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EPIDEMIOLOGY IN KOREA

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For a stakeholder to enter into Korea for clinical development, it is in most situations of key importance to get a comprehensive first-look at any disease. To address these needs, Korea National Enterprise for Clinical Trials (hereafter KoNECT) has built up a robust epidemiology database of key diseases in Korea. The epidemiological data covers incidence/prevalence rate, diagnosis, treatment, and risk factors providing comprehensive first-look at these diseases. This database is based on the literature review of epidemiological and clinical studies in Korean subjects. This database may be able to identify the eligible patients' size, the relevance of the eligibility criteria of concerned protocol, and local medical practices.

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EPIDEMIOLOGY IN KOREA

CONTENTS

Cardiovascular

Angina ... 2
Atrial Fibrillation ... 5
Heart Failure ... 8
Hypertension ... 11
Ischemic Stroke ... 14
Myocardial Infarction ... 17
Pregnancy-induced (Gestational) Hypertension ... 20
Venous Thromboembolism ... 23

Dermatology

Acne Vulgaris ... 27
Atopic Dermatitis ... 29
Herpes Zoster ... 32
Psoriasis ... 35

Endocrine & Metabolism

Cushing's Disease ... 39
Dyslipidemia ... 42
Hypoparathyroidism ... 45
Metabolic Syndrome ... 47
Non-Alcoholic Fatty Liver Disease ... 50
Obesity ... 53
Osteoporosis ... 56
Pediatric Type 1 Diabetes Mellitus ... 59
Type 1 Diabetes Mellitus ... 62
Type 2 Diabetes Mellitus ... 65

Gastrointestinal

Dyspepsia ... 69
Gastroesophageal Reflux Disease (GERD) ... 71
Irritable Bowel Syndrome ... 74
Liver Cirrhosis ... 77
Peptic Ulcer ... 80
Ulcerative Colitis ... 83

Genitourinary

Benign Prostate Hyperplasia 87
Chronic Kidney Disease 90
Diabetic Nephropathy 93
Erectile Dysfunction 96
IgA Nephropathy 98
Urinary Incontinence 101

Hematology

Acute Lymphoblastic Leukemia 105
Acute Myeloid Leukemia 108
Anemia 111
Chronic Lymphocytic Leukemia 114
Chronic Myeloid Leukemia 116
Follicular Lymphoma 119
Hemophilia 122
Leukopenia 125
Multiple Myeloma 127
Myelofibrosis 130
Non-Hodgkin Lymphoma 132

Infection

Helicobacter Pylori Infection 136
Hepatitis B Virus Infection 139
Hepatitis C Virus Infection 143
HIV Infection 146
Influenza 149
Nontuberculous Mycobacteria 152
Norovirus Infection 155
Respiratory Syncytial Virus 157
Tuberculosis 160

Musculoskeletal

Ankylosing Spondylitis 164
Axial Spondyloarthropathy 167
Chronic Back Pain 169
Osteoarthritis 171
Psoriatic Arthritis (Arthropathic Psoriasis) 174
Rheumatoid Arthritis 176

Neurology

Alzheimer's Disease 180
Amyotrophic Lateral Sclerosis 183
Cerebral Palsy 186
Diabetic Peripheral Neuropathy 188
Narcolepsy 191
Parkinson's Disease 194

Oncology

Bladder Cancer 198
Brain and CNS Tumor 201
Breast Cancer 204
Cervical Cancer 207
Colorectal Cancer 210
Endometrial Cancer 213
Esophageal Cancer 215
Gallbladder and Biliary Tract Cancer 218
Gastric Cancer 221
Gastrointestinal Stromal Tumors (GIST) 224
Head and Neck Cancer 227
Kidney Cancer 230
Liver Cancer 233
Lung Cancer 236
Malignant Melanoma 239
Osteosarcoma 242
Ovarian Cancer 245
Pancreatic Cancer 248
Prostate Cancer 251
Thyroid Cancer 254

Ophthalmology

Cataract 258
Diabetic Retinopathy 260
Dry Eye Syndrome 263
Glaucoma 266
Macular Degeneration 269

Psychiatry

Attention Deficit Hyperactivity Disorder (ADHD) 273
Autism Spectrum Disorder 276

Bipolar Disorder 279
Depression 282
Insomnia 285
Schizophrenia and Schizoaffective Disorders 288

Rare Disease

Acromegaly 292
Amyloidosis 295
Crohn's Disease 297
Cystic Fibrosis 300
Epilepsy 302
Familial Adenomatous Polyposis 305
Gaucher Disease 308
Hereditary Angioedema 311
Hereditary Ataxia 313
Huntington's Disease 316
Idiopathic Pulmonary Fibrosis 319
Multiple Sclerosis 322
Myasthenia Gravis 325
Neuromyelitis Optica Spectrum Disorder (NMOSD) 328
Paroxysmal Nocturnal Hemoglobinuria (PNH) 331
Pemphigus Vulgaris 333
Pulmonary Arterial Hypertension 335
Sarcoidosis 338
Systemic Lupus Erythematosus 341

Respiratory

Allergic Rhinitis 344
Asthma 347
Chronic Obstructive Pulmonary Disease (COPD) 350
Non-Cystic Fibrosis Bronchiectasis 353
Pneumonia 355

Others

Androgenetic Alopecia 359
Anticoagulant (warfarin)-associated Intracranial Hemorrhage 362
Graft-versus-Host Disease (GvHD) 364
Intracerebral Hemorrhage 367
Liver Transplantation 370

Otitis Media 373
Primary Immunodeficiency 376
Sleep Apnea Syndromes 379
Subarachnoid Hemorrhage 382

Cardiovascular

Angina

Incidence	NR
Prevalence	According to national health insurance data, the number of patients treated for angina in Korea showed a generally consistent trend between 2018 and 2022, with a slight increase overall. The annual number of patients was 665,070 in 2018, 680,350 in 2019, 669,599 in 2020, 711,164 in 2021, and 705,259 in 2022. [1]
Mortality	The age-standardized mortality rate for ischemic heart disease was 30.9 per 100,000 in men and 25.6 per 100,000 in women. [2]
Gender	In 2022, a total of 429,437 male and 275,822 female patients received medical care for angina. The male-to-female ratio was approximately 1.56:1. [1]
Age	The prevalence of angina by age group from national health insurance data in 2022 was as follow: 0–9 years: 41 (0.0%), 10–19 years: 967 (0.1%), 20–29 years: 4,756 (0.6%), 30–39 years: 10,255 (1.4%), 40–49 years: 34,788 (4.7%), 50–59 years: 110,964 (15.0%), 60–69 years: 235,624 (31.9%), 70–79 years: 221,792 (30.0%), 80+ years: 119,195 (16.1%). [1]
Regional distribution	Notable regional differences in angina were generally not observed in Korea. In the 2013 CHS, Gwangju (2.8%) and Chungnam (2.7%) showed the highest prevalence, whereas Ulsan (1.3%) and Gyeonggi (1.7%) had the lowest prevalence. [3]
Clinical phenotypes/ Classification	Based on ICD-10 codes from national insurance claims data (2012–2016), angina pectoris (I20) accounted for the largest proportion (68.4%) among ischemic heart disease cases, followed by chronic ischemic heart disease (I25, 21.0%) and acute myocardial infarction (I21, 9.6%). Other Classifications, including I22–I24, accounted for less than 1% each. [4]
Clinical manifestation	In patients with coronary artery disease (CAD), the most common presentation is asymptomatic, and in some cases, the first manifestation may be syncope or sudden death due to myocardial infarction. [5]
Risk factor	Myocardial infarction or angina pectoris (MIAP) was more strongly associated with total cholesterol than other variables in men (adjusted OR = 0.436 [0.384-0.495]) and women (adjusted OR = 0.541 [0.475-0.618]). The waist-to-height ratio (adjusted OR = 1.325 [1.082-1.623]) and waist circumference (adjusted OR = 1.290 [1.072-1.553]) showed a significant association with MIAP in men, with no association between obesity indices and MIAP in women after adjustment. [6]
Diagnosis	Angina is a symptom-based clinical diagnosis. Typical angina is defined when all of the following three characteristics are present: A sensation of pressure or discomfort

	localized to the chest, neck, jaw, shoulder, or arm, Onset of symptoms with physical exertion or emotional stress, Relief of symptoms within five minutes by rest or administration of nitrates. When only two of these criteria are met, the condition is classified as atypical angina. If only one or none of the features is present, the condition is categorized as non-anginal chest pain. [5]
Treatment	In procedures, drug-eluting stent was the most frequently used device (93.2%), followed by balloon angioplasty (5.5%) and bare metal stents (1.3%). The mean number of stents per patient was 1.39±0.64. At discharge, dual-anti platelet therapy, statin, beta-blockers, and angiotensin converting enzyme inhibitor or angiotensin receptor blocker were provided to 76,292 (94.1%), 71,411 (88.0%), 57,429 (70.8%), and 54,418 (67.1%) patients, respectively. [7]
Prognosis	The study patients were divided into two groups: group I (stable angina pectoris [SAP], n = 60, 48 men, 62 ± 10 years) and group II (acute coronary syndrome [ACS], n = 388, 291 men, 64 ± 10 years). Stent implantation techniques and use of intravascular ultrasound guidance were not different between two groups. In-hospital mortality was 0% in group I and 7% in group II (p = 0.035). One-month mortality was 0% in group I and 7.7% in group II (p = 0.968). Two-year survival rate was 93% in the group I and 88.4% in the group II (p = 0.921). [8]
Genetic information	Genetic polymorphisms in the endothelin-1 [9], rho-associated kinase 2 [10], interferon gamma gene [11], OPG, RANK, and RANKL [12] were associated with angina in Korean population.
References	[1] Statistics on Medical Practices for Everyday Diseases. Wonju: Health Insurance Review & Assessment Service; 2023. [2] Thirty-six Year Trends in Mortality from Diseases of Circulatory System in Korea. Korean Circ J. 2021 Apr;51(4):320-332. [3] Social Security Information Service. A study on the evolution of the medical use interregional gap using healthcare big data (2016) [4] Health Insurance Review and Assessment Service, Policy Research Institute. *Analysis of Treatment Trends for Ischemic Heart Disease Over the Past 5 Years.* Wonju: Health Insurance Review and Assessment Service; September 2017. [5] Pathophysiology and Role of Coronary CT Angiography in Stable Angina. The Korean Society of Radiology. 2022 Jan;83(1):42-53. Korean. [6] Association of myocardial infarction and angina pectoris with obesity and biochemical indices in the South Korean population. Sci Rep. 2022 Aug 12;12(1):13769. [7] Trends, Characteristics, and Clinical Outcomes of Patients Undergoing Percutaneous Coronary Intervention in Korea between 2011 and 2015. Korean Circ J. 2018 Apr;48(4):310-321.

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Atrial Fibrillation

Incidence	Between 2013 and 2022, the number of newly diagnosed patients with atrial fibrillation (AF) per year steadily increased. The incidence of atrial fibrillation increased from 184 per 100,000 person-years in 2013 to 275 per 100,000 person-years in 2022, reflecting a 1.5-fold increase over the 10 years. [1]
Prevalence	In Korean adults aged ≥ 20 years, the number of patients with prevalent atrial fibrillation increased from 43,769 in 2013 to 940,063 in 2022, with the prevalence doubling from 1.1 to 2.2% over this time. [1]
Mortality	Compared with patients without atrial fibrillation, atrial fibrillation was associated with an increased risk of mortality (hazard ratio [HR]: 1.78; 95% confidence interval [CI] 1.67–1.89) [1]
Gender	In 2022, incidence rate was 301 per 100,000 person-years in men and 249 per 100,000 person-years in women. [1]
Age	Over these 10 years(2013-2022), the mean age of patients with atrial fibrillation increased gradually from 67.7 to 70.3 years (p-for-trend <0.001). The proportion of the older population aged ≥ 75 years significantly rose from 34.9% in 2017 to 54.9% in 2022. [1]
Regional distribution	The prevalence of atrial fibrillation exhibited slight regional variation, with Jeonbuk reporting the highest prevalence at 3.5% in 2022 and Sejong City reporting the lowest at 1.6%. Comparative analysis between urban and suburban/rural areas revealed a significantly higher prevalence in suburban/rural areas than urban areas (2.4% vs. 1.9%, $p < 0.001$). [1]
Clinical phenotypes/ Classification	The 2020 European Society of Cardiology (ESC) guidelines introduced the 4S-AF scheme, which encompasses four domains related to atrial fibrillation. Individual patients with atrial fibrillation are assessed based on stroke risk, symptom severity, severity of atrial fibrillation burden, and substrate severity. [2]
Clinical manifestation	From March to July 2014, a total of 1,483 individuals were screened in a Korean community-based study, and 46 were diagnosed with atrial fibrillation. Among them, no symptom was reported in 27 patients (27/46), while dyspnea (10/46), chest discomfort (4/46), palpitation (3/46), edema (3/46), and dizziness/syncope (1/46) were also observed. [3]
Risk factor	The proportion of the older population aged ≥ 75 years significantly rose from 34.9% in 2017 to 54.9% in 2022. Comorbidities, including hypertension, diabetes, heart failure,

	prior ischemic stroke, transient ischemic attack, and myocardial infarction, showed a consistent increase throughout the decade; this was accompanied by a rise in the mean CHA2DS2-VASc score from 3.3 points in 2017 to 3.6 points in 2022, along with a gradual increase in the proportion of patients with higher CHA2DS2-VASc scores. [1] Among comorbid diseases, hypertension (n=1,757, 50%), ischemic heart disease (n=735, 20.9%) and heart failure (n=519, 14.8%) were related to the incidence of atrial fibrillation. [4] Old age (≥60 years), male sex, and obesity (body mass index [BMI] ≥25 kg/m2) were associated with atrial fibrillation after adjusting for comorbidities. [4]
Diagnosis	If atrial fibrillation lasting 30 seconds or longer is confirmed by a physician using a wearable device capable of recording an electrocardiogram (such as a single-lead ECG device), a definitive diagnosis of atrial fibrillation can be made. However, if atrial fibrillation is detected by a method other than ECG (e.g., devices using photoplethysmography) or if the ECG tracing obtained from the device is inconclusive, additional ECG recordings are required to confirm the diagnosis. [5]
Treatment	In 2022, 940,063 patients had a prior diagnosis of atrial fibrillation. From 2013 to 2022, the use of antiarrhythmic drugs increased from 12.1 to 16.4% among prevalent atrial fibrillation patients. Beta-blockers (44.6%) were the most commonly prescribed rate control medication, while the use of calcium channel blockers and digoxin declined. The frequency of AF catheter ablation procedures also increased, from 0.5% of prevalent AF patients in 2013 to 0.7% in 2022. Younger patients, males, and those with lower CHA2DS2-VASc scores were more likely to receive AF catheter ablation. [6]
Prognosis	Compared with patients without AF, AF was associated with an increased risk of ischemic stroke (HR: 2.39; 95% CI 1.98–2.88), major bleeding (HR: 2.10; 95% CI 1.53–2.87), MI (HR: 1.44; 95% CI 1.09–1.91), and HF admission (HR: 2.42; 95% CI 1.88–3.11). [1] During the study, 20.4% of ischemic strokes were accompanied by AF, with AF diagnosed within 6 months before or after the ischemic stroke. The proportion of patients diagnosed with AF but not received appropriate oral anticoagulant prescriptions until a stroke occurred was 4%. [7]
Genetic information	A genome-wide association study was conducted with 672 cases (≤60 years old, Yonsei AF Ablation cohort) and 3,700 controls (Korea Genome Epidemiology Study). In this analysis, five previously established genetic loci—1q24/PRRX1, 4q25/PITX2, 10q24/NEURL, 12q24/TBX5, and 16q22/ZFHX3—were successfully validated. Additionally, two novel genetic loci associated with early-onset AF were identified on chromosomes 1q32.1/PPFIA4 (rs11579055, $P = 6.84 \times 10^{-10}$) and 4q34.1/HAND2 (rs8180252, $P = 1.49 \times 10^{-11}$). [8]

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Heart Failure

Incidence	In 2003, the incidence rate of heart failure (HF) was 482 per 100,000 persons, with incidence rates of 377 and 587 per 100,000 men and women, respectively. Compared with that in 2002, the incidence rate in 2020 was higher at 609 per 100,000 persons, with incidence rates of 619 and 599 per 100,000 men and women, respectively. [1]
Prevalence	In the NHID, an estimated 1,326,886 people, or 2.58% of the total population, had HF in 2020. The estimated number of patients with heart failure increased 3.6-fold in about 18 years, from 369,211 in 2002 (a prevalence of 0.77%). [1]
Mortality	In 2002, an estimated 1,431 deaths occurred owing to heart failure, with a rate of 3.0 per 100,000 persons. In 2020, an estimated 8,020 deaths occurred owing to HF, a rate of 15.6 per 100,000 persons. An increasing trend was observed from 2002 to 2020. [1]
Gender	The prevalence in men was 2.55%, and that in women was 2.62%. [1] Of 475,019 total patients in 2014, 42.3% were male and 57.7% were female. [2]
Age	In 2020, the age-specific prevalence of HF was 0.06%, 0.07%, 0.18%, 0.38%, 0.87%, 2.02%, 4.71%, 10.57%, and 18.62% for those aged 0–9, 10–19, 20–29, 30–39, 40–49, 50–59, 60–69, 70–79, and ≥80 years, respectively. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Dyspnea is graded according to the activity necessary symptom manifestation, which helps track the disease course or the response to heart failure treatment, though it is not proportional to the degree of ventricular function. The New York Heart Association (NYHA) functional Classification categorizes symptoms into four classes, from Class I to Class IV. [3]
Clinical manifestation	Dyspnea is a common symptom of heart failure and it is usually exacerbated during exercise. However, these symptoms are non-specific. When heart failure gradually becomes severe, patients develop orthopnea and paroxysmal nocturnal dyspnea. In addition, a decrease in cardiac output causes severe fatigue, and patients with arrhythmias, such as atrial fibrillation, often develop palpitations. Anorexia, indigestion, and bloating may occur in patients with RV dysfunction. [3]
Risk factor	The KorAHF Registry, which examined 5,625 patients hospitalized for acute HF from 2011 to 2014, revealed that ischemic heart disease, cardiomyopathy, valvular heart disease, tachycardia, and hypertensive heart disease accounted for 37.6%, 20.6%, 14.3%, 10%, and 4%, respectively. In Korea, ischemic heart disease is the most common cause of HF. [3]

Diagnosis	In patients with suspected HF, the following initial tests are recommended: 1. Twelve-lead electrocardiogram (ECG). (Class I, Level of Evidence C) 2. Assessment of B-type natriuretic peptide (BNP) or N-terminal (NT) pro BNP levels. (Class I, Level of Evidence B) 3. Diagnostic blood tests include complete blood count, lipid profile, and serum urea, electrolytes, and iron (transferrin saturation and ferritin), fasting blood glucose, glycated hemoglobin (HbA1c), and kidney (creatinine), liver, and thyroid function tests. (Class I, Level of Evidence C) 4. Echocardiography. (Class I, Level of Evidence C) 5. Chest radiography. (Class I, Level of Evidence C) [3]
Treatment	The prescription rate for angiotensin-converting enzyme inhibitor(ACEI)/angiotensin receptor blocker (ARB)/ARNI was 76.8%. In detail, the prescription rate for ACEIs, ARBs, and ARNI was 14.2%, 50.7%, and 12.0%, respectively. Furthermore, 66.5% and 50.0% of patients were on beta-blockers and mineralocorticoid receptor antagonist (MRA), respectively, while only 17.5% of patients were on SGLT2 inhibitors. In HFrEF patients, the prescription rate of for ACEI/ARB/ARNI, beta blockers, MRA and SGLT2 inhibitors were 86.5%, 75.3%, 64.3%, and 23.0% [4]
Prognosis	Natriuretic peptide has a short half-life, which changes with hemodynamic stress or LV filling pressure, reflecting the severity of HF. A higher NYHA functional Classification or pulmonary congestion correlates with a higher concentration of natriuretic peptide. [3] Among the 1,932 patients included in the study, the proportion of NYHA class IV was 26.8% in the death group and 21.5% in the survival group. The median NT-proBNP level was 9,003.0 pg/mL (25th–75th percentile: 3,366.0–22,663.5) in the death group and 4,193.5 pg/mL (25th–75th percentile: 1,729.5–9,657.3) in the survival group. [5]
Genetic information	The study uncovered exome-wide significant associations for heart failure and rare predicted loss-of-function variants in TTN, MYBPC3, FLNC and BAG3 using exome sequencing of 376,334 individuals. [6]
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Hypertension

Incidence	Based on data from 64,136 individuals in the National Health Insurance Service–Health Screening Cohort in South Korea, 8,676 participants were newly diagnosed with hypertension during a mean follow-up period of 3.4 ± 1.9 years, resulting in a cumulative incidence of approximately 13.5%. [1]
Prevalence	The age-standardized prevalence of hypertension among adults aged 20 years or older modestly decreased from 26.0% in 1998 to 21.8% in 2021. Over the same period, the age-standardized prevalence of hypertension among adults aged 30 years or older decreased from 30.7% to 26.8%. [2]
Mortality	Out of 65,686 participants, 397 (0.6%) experienced hypertension-related avoidable hospitalizations within 1 year of their initial hypertension diagnosis. Individuals who experienced such hospitalizations had a significantly higher risk of all-cause mortality compared to those who did not (3-year: hazard ratio [HR], 2.12; 95% confidence interval [CI], 1.53 to 2.94; 5-year: HR, 2.13; 95% CI, 1.68 to 2.68). [3]
Gender	Before the age of 60, the prevalence of hypertension is higher in men than in women. However, in the age 60 s, the prevalence is similar between men and women, and after the age of 70, the prevalence of hypertension becomes higher in women. In 2021, estimated people with hypertension were 4.3 million men and 2.6 million women under the age of 65, but 2.2 million men and 3.2 million women aged 65 years or older. [2]
Age	Among the participants of the KNHANES VIII (2019–2021), individuals aged 70 years and older accounted for the largest proportion, with 3,695 participants (20.0%), followed by 3,482 participants (18.8%) aged 60–69 years, and 3,445 participants (18.6%) aged 50–59 years. The number of participants in the 40–49, 30–39, and 20–29 age groups were 3,212 (17.4%), 2,481 (13.4%), and 2,196 (11.9%), respectively. [2]
Regional distribution	Based on data from the National Health Insurance Services Senior Cohort (2008–2019), 41.7% of the study population resided in metropolitan areas, while 58.3% lived in non-metropolitan regions. [3]
Clinical phenotypes/ Classification	According to results of office office BP (OBP) and out-of-office measurements, individuals are categorized into four phenotypes: (1) normotension (OBP and out-of-office BP not elevated), (2) white coat hypertension (elevated OBP [≥140/90 mmHg] but not elevated out-of-office BP [≤135/85 mmHg in awake blood pressure and home blood pressure monitoring or ≤ 130/80 mmHg in 24-hour mean blood pressure by ambulatory blood pressure monitoring]), (3) masked hypertension (elevated out-of-

	office BP but not OBP), and (4) sustained hypertension (both elevated OBP and out-of-office BP). [4]
Clinical manifestation	Hypertension usually has no signs symptoms. Elevated resting heart rate [5], increased urine albumin-to-creatinine ratio within a normal range [6,7], and high platelet-to-lymphocyte ratio [8] were reported in patients with hypertension in Korea.
Risk factor	Among the 75,335 included participants, the progression rate to hypertension was 66.39% (50,013), Age, BMI, hemoglobin, and family history of hypertension and other diseases were related to the progression. Among the progression group, 78.21% (39,116) participants skipped a pre-hypertensive status; this group consisted of older females with lower pulse pressure and more alcohol consumption compared to people who had pre-hypertensive status before the progression. [9]
Diagnosis	In general, the target SBP is <140 mmHg and DBP is <90 mmHg, unless the patient has conditions such as diabetes mellitus or chronic kidney disease. It is reasonable to reduce BP below 130/80 mmHg in individuals with CVD or high CV risk. On the other hand, it is recommended to control BP to less than 140/90 mmHg in low-risk and intermediate-risk groups. The main rationale of changing target BPs from around 130/80 mmHg to below 130/80 mmHg in high-risk patients is the adoption of corresponding BPs, which emphasize the balanced awareness of both WCE and masked effects during intensive BP control. [4]
Treatment	In 2021, the most frequently prescribed antihypertensive drug class was ARB (75.1%), followed by CCB (61.7%), diuretics (23.4%), beta-blockers (15.3%), potassium-sparing diuretics (1.8%), and ACEi (1.3%). The most commonly prescribed regimen for hypertension treatment was dual therapy involving ACEi/ARB plus CCB, followed by ARB monotherapy and CCB monotherapy. [2] Among male patients, the usage frequency of ACEi/ARB was higher compared to female patients, while the usage frequency of diuretics was lower. [2]
Prognosis	As the duration of hypertension increased, the risks of cardiovascular disease and stroke also increased. When hypertension lasts longer than 20 years, ischemic heart disease, myocardial infarction, and stroke prevalence were 14.6%, 5.0%, and 12.2%, respectively. However, achieving a target blood pressure goal below 140/90 mmHg reduced the risk of all cardiovascular disease and stroke by nearly half. Nevertheless, fewer than two-thirds of patients in Korea with hypertension achieved this targeted blood pressure goal. [10]
Genetic information	In a longitudinal analysis (n=5,632), participants in the highest tertile of wGRS had a 1.22-fold (OR=1.22, 95%CI, 1.02–1.46) greater risk of incident hypertension relative to those in the lowest tertile, after adjusting for a number of confounding factors. [11]

	Among 153 SNPs in renin-related gene regions, two SNPs (rs11726091 and rs8137145) showed an association in the high-renin group, four SNPs (rs17038966, rs145286444, rs2118663, and rs12336898) in the low-renin group, and three SNPs (rs1938859, rs7968218, and rs117246401) in the total population. Most significantly, the low-renin SNP rs12336898 in the SPTAN1 gene, closely related to vascular wall remodeling, was associated with the development of hypertension (p-value = 1.3 × 10-6). [12]
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Ischemic Stroke

Incidence	The crude incidence rate of stroke hovered around 200 (per 100,000 person-years) from 2011 to 2015, then surged to 218.4 in 2019, before marginally declining to 208.0 in 2020. [1]
Prevalence	NR
Mortality	From 2011 to 2019, there was a reduction in the 30-day case fatality rates for both total stroke and first stroke, with rates decreasing from 8.5% to 7.4% and 9.0% to 7.7%, respectively. [1]
Gender	Notably, the rate of increase in the number of stroke events was more pronounced in males compared to females, resulting in an increase in the male-to-female ratio from 1.1 in 2011 to 1.3 in 2020. [1]
Age	Among the reported stroke cases in 2020, individuals aged 80 years and older accounted for the largest proportion, with 29,177 cases (24.5%), followed by 28,143 cases (23.6%) among those aged 70–79 years and 24,420 cases (20.5%) among those aged 60–69 years. The number of cases in the 50–59, 40–49, and 30–39 age groups were 16,102 (13.5%), 6,230 (5.2%), and 1,846 (1.5%), respectively. [1] Age-specific sex ratios show that men were more prevalent in the middle-aged group (55–64 years), while women were more common in the older age group (≥ 85 years), a finding consistent with prior research. The mean age was 72.9 ± 13.4 years for women and 66.6 ± 12.9 years for men in 2021. [2]
Regional distribution	In 2008, an insignificant difference was observed between the 30-day mortality rate for ischemic stroke patients in urban (3.6%) and rural (3.8%) areas (RR: 1.0). By 2019, improvements were observed in both areas (urban: 2.4%; rural: 2.6%; RR: 1.0). The decline in both areas was more notable in urban areas (AAPC: -3.5%) than in rural areas (AAPC: -2.4%) [3]
Clinical phenotypes/ Classification	The TOAST Classification system includes five categories: 1) large-artery atherosclerosis, 2) cardioembolism, 3) small-artery occlusion (lacune), 4) stroke of other determined etiology, and 5) stroke of undetermined etiology. [4] Based on the TOAST Classification, the distribution of ischemic stroke subtypes in Korea in 2021 was as follows: large-artery atherosclerosis accounted for the largest proportion at 38.2%, followed by cardioembolism at 19.5% and small-vessel occlusion at 17.9%. Strokes of other determined etiology comprised 4.6% of cases. [2]

Clinical manifestation	About half of ischemic and hemorrhagic stroke cases had NIHSS of four or lower. Severe neurological deficits at symptom onset (NIHSS scores of 25 or higher) were more common in hemorrhagic stroke than in ischemic stroke (13.9% vs. 1.5%). [5]
Risk factor	In 2021, hypertension was the most prevalent modifiable risk factor, affecting 67.4% of AIS cases. [2]
Diagnosis	Diagnoses are based on clinical features and on data collected by tests such as brain imaging, cardiac imaging, duplex imaging of extracranial arteries, arteriography, and laboratory assessments for a prothrombotic state. [4] Patients who were diagnosed of I63 (cerebral infarction) at discharge or had hemorrhagic complication by intravenous thrombolysis (IVT) or endovascular treatment (EVT), were classified as ischemic stroke. [6]
Treatment	Antithrombotic drugs were administered to 94% of acute ischemic stroke patients within 48 hours of hospitalization in 2021, aligning closely with the US rate of 97%. Aspirin monotherapy was the most common treatment until 2016, but the combination of aspirin plus clopidogrel became the preferred regimen after 2017, used in 65% of cases by 2021. [2] Notably, the use of DOACs for cardioembolism stroke without AF increased to 26% in 2021, while warfarin usage significantly dropped from 39% in 2008–2010 to 12% in 2021, indicating a significant shift in anticoagulation practices that merits further investigation. [2]
Prognosis	In the study cohort, 3-month and 1-year mRS scores were collected for 97% and 93% of patients, respectively. In 2021, 63% of all AIS patients achieved favorable outcomes (mRS 0–2) at 3 months, with 55% of those receiving IVT and 41% undergoing EVT achieving similar outcomes. Excellent 3-month outcomes (mRS 0–1) were seen in 48% of all AIS patients and 39% of those receiving IVT, surpassing the 31% reported in a meta-analysis of IVT trials. For 2021, favorable one-year outcomes were observed in 64% of AIS patients, with excellent one-year outcomes reported at 49% for 2020. [2]
Genetic information	Sixteen out of 72 SNPs identified in GWAS showed significant associations with stroke, with an odds ratio greater than 2.0. For participants aged <40 years, AUROCs for incident stroke were 0.58, 0.65, and 0.67 in models using modifiable TRS only, GRS only, and TRS plus GRS, respectively, showing that GRS only model had better prediction than TRS only. [7] Polymorphisms in PAI-1 were identified by polymerase chain reaction/restriction fragment length polymorphism analysis using genomic DNA. Specifically, three variations (−675 4G>5G, 10692T>C, and 12068G>A) were linked to a higher overall

	prevalence of stroke as well as a higher prevalence of certain stroke subtypes. Haplotype analyses also revealed combinations of these variations (−844G>A, −675 4G>5G, 43G>A, 9785A>G, 10692T>C, 11053T>G, and 12068G>A) that were significantly associated with a higher prevalence of ischemic stroke. [8]
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Myocardial Infarction

Incidence	The crude incidence rate of acute myocardial infarction (AMI) per 100,000 person-years demonstrated a consistent increase from 44.7 in 2011 to 68.3 in 2019, representing a cumulative increase of 54%. However, in 2020, this incidence rate declined slightly to 66.2. [1]
Prevalence	According to HIRA disease statistics, the number of patients with a diagnostic code of I21 or I22 was 122,231 in 2020, which translates to a prevalence of 0.343% of Korean adults aged 30 years and older. The annual prevalence was 0.278% in 2016, 0.291% in 2017, 0.317% in 2018, and 0.337% in 2019, indicating a gradual increase between 2016 and 2020. [2]
Mortality	The relative risk (RR) for 30-day acute myocardial infarction mortality remained at 1.2 in both 2008 and 2019. The mortality rate of OECD countries showed a continuous decline, with an average annual percent change of −2.5% between 2008 (11.9%) and 2019 (8.9%). [3]
Gender	In 2020, the age-standardized incidence rate of acute myocardial infarction in males was 92.1 per 100,000 persons, reflecting a steady increase from 2011 with a slight tapering off in the final year. In contrast, the rate in females showed only minimal change over the same period, reaching 35.5 per 100,000 persons in 2020. [1]
Age	In 2020, the number of acute myocardial infarction events increased with age: 9 cases occurred in individuals under 20, 80 in those aged 20–29, 572 in the 30–39 group, 2,873 among those aged 40–49, 6,990 in the 50–59 group, 9,047 in those aged 60–69, 7,850 in the 70–79 group, and 6,567 cases were reported in individuals aged 80 and older. [1]
Regional distribution	Daegu, Jeju, and Gwangju Province showed the highest average AMI incidence rates of 50.3, 47.3, and 47.1 per 100,000 person-years, respectively. On the other hand, Sejong, Chungnam, and Incheon Province showed low average incidence rates of 30.2, 37.9, and 38.4 per 100,000 person-years, respectively. The highest incidence rate of Daegu city was relatively 66.6% higher than that of the lowest Sejong city. [4]
Clinical phenotypes/ Classification	STEMI decreased from 64.3% in 2005 to 48.4% in 2018, and thus the ratio of STEMI/NSTEMI decreased in 2012 (p for trend < 0.001). [5]
Clinical manifestation	Epigastric pain was the most commonly reported symptom of acute myocardial infarction, observed in 41.7% of patients, followed by cold sweats (29.4%), dyspnea (29.0%), central chest pain (20.0%), left shoulder pain (12.1%), and pain in the left side of the chest (12.0%). In contrast, previous domestic studies identified chest pain as the most common symptom, reported in approximately 60% of cases, along with dyspnea,

	fatigue or dizziness, and nausea and vomiting. These findings differ from the present study, in which epigastric pain was the most frequently reported symptom. [6]
Risk factor	Among the cardiovascular risk factors, KAMIR data from November 2005 to August 2018 revealed that hypertension is the most common comorbidity (57.2%), followed by current smoking (40.6%), diabetes mellitus (DM; 32.3%), and dyslipidemia (13.2%).[5]
Diagnosis	Criteria for acute myocardial infarction (types 1, 2 and 3 MI) The term acute myocardial infarction should be used when there is acute myocardial injury with clinical evidence of acute myocardial ischaemia and with detection of a rise and/or fall of cTn values with at least one value above the 99th percentile URL and at least one of the following: Symptoms of myocardial ischaemia; New ischaemic ECG changes; Development of pathological Q waves; Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality in a pattern consistent with an ischaemic aetiology; Identification of a coronary thrombus by angiography or autopsy (not for type 2 or 3 MIs). [7]
Treatment	99.1% of STEMI patients in Korea underwent primary percutaneous coronary intervention (PCI) in 2018. And, drug-eluting stents (DESs), almost exclusively newer-generation DESs, were implanted in 99.6% of patients with primary PCI. Thus, nearly all STEMI patients underwent primary PCI with newer-generation DES, in accordance with recent European Society of Cardiology (ESC) guidelines. [8] Statins, renin-angiotensin system (RAS) blockers, and beta blockers are prescribed in approximately 80% of all AMI patients. RAS blockers, such as angiotensin-converting enzyme inhibitors or angiotensin II receptor blockers (ARBs), are prescribed more for Korean patients with AMI (85.4%, 86.4%, and 89.6% of AMI, STEMI, and NSTEMI patients, respectively) compared with those in French and Swedish registries (64.0% and 57.0% of STEMI and NSTEMI patients, respectively, in the French registry and 56.2% of AMI patients in the Swedish registry. [5]
Prognosis	Data from KAMIR compared the clinical impact of a pharmacoinvasive strategy with primary PCI in STEMI patients. Most patients (n=8,878) underwent primary PCI at a median 105 minutes after symptom onset, whereas 708 patients underwent thrombolysis and subsequent PCI. The 12-month incidences of death (4.4% vs. 4.1%) and major adverse cardiac events (7.5% vs. 7.8%) were similar in the 2 groups. [8]
Genetic information	In Korean early-onset acute myocardial infarction patients who underwent percutaneous coronary intervention, the polygenic risk score distribution was significantly higher compared to the control group. The odds ratio associated with the polygenic risk score was 1.83 in patients, indicating a higher genetic risk burden. [9]

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Pregnancy-induced (Gestational) Hypertension

Incidence	Hypertensive disorders during pregnancy have been increasing over the past 10 years. In 2019, 5.4% of women who gave birth were diagnosed with chronic hypertension and 3.1% with pregnancy-induced hypertension (PIH). [1]
Prevalence	NR
Mortality	The maternal mortality due to PIH was 0.15% (5/3,263) based on nationwide multi-center data of 49 hospitals. [2]
Gender	NA
Age	The PIH incidence increased with age, especially among women over 40 years of age. Among pregnant women over 40 years of age (n=22,300), the PIH incidence was 1.5% in 2011. [3]
Regional distribution	NR
Clinical phenotypes/ Classification	PIH is one of several hypertensive disorders of pregnancy (HDPs), which are classified into four categories: gestational hypertension, preeclampsia, chronic hypertension, and chronic hypertension with superimposed preeclampsia. In terms of the onset of hypertension, HDPs are classified as gestational or chronic hypertension. In terms of the presence of proteinuria and abnormal systemic findings, HDPs are classified as preeclampsia and chronic hypertension with superimposed preeclampsia. [4]
Clinical manifestation	PIH can manifest clinically in several ways. Although some of the women may be asymptomatic, some may be symptomatic, and this includes hypertension, which is described as systolic blood pressure of 140 mmHg or above or diastolic of 90 mmHg or above as confirmed by two consecutive readings taken at least four hours apart. Proteinuria occurs together with the symptoms in some patients and may include headache, vision problems, and epigastric discomfort. [5]
Risk factor	PIH during the current pregnancy period was found more frequently in women with gestational diabetes mellitus (GDM) compared to those without GDM (unadjusted OR = 1.64 [95% CI, 1.36, 1.99], $p < 0.0001$, adjusted by age OR = 1.61 [1.33, 1.95], $p < 0.0001$]). [6]
Diagnosis	Pregnancy-induced hypertension was defined as cases that did not meet the criteria for chronic hypertension but had insurance claims with a diagnosis of gestational hypertension (ICD-10: O13) or preeclampsia/eclampsia (ICD-10: O14, O15) within 40 weeks before or 12 weeks after delivery, based on the International Classification of Diseases, 10th Revision (ICD-10). [1]

Treatment	PIH is treated pharmacologically with the goals of regulating blood pressure, averting problems, and guaranteeing the safety of the fetus and mother. The degree of hypertension, the drug's effectiveness, and its safety profile during pregnancy all play a role in the selection of an antihypertensive treatment. [5] We included 2,030,821 pregnancies, of whom 0.9%, 3.1%, and 1.8% were dispensed antihypertensives in the pre-pregnancy, pregnancy, and postpartum periods, respectively. The most frequent medications used were dihydropyridines (40.7%), beta-blockers (38.4%) and Angiotensin II Receptor Blockers (16.8%) in the first trimester, and dihydropyridines (89.7%) and vasodilators (11.5%) in the third trimester. Among women exposed to antihypertensives during pregnancy, this was the first use in 86.3% of women. [7]
Prognosis	The gestational age of the PIH group was higher than that of the non-PIH group (27.3 ± 1.8 versus 28.0 ± 1.4 weeks, p <0.001). Birth weight was lower in the PIH group than that in the non-PIH group (876.4 ± 261.5 versus 1027.4 ± 250.2 g, p <0.001). Infants who were SGA were more common in the PIH group than the non-PIH group (1.4% vs. 9.9%, p <0.001). [8]
Genetic information	Genetic association data for the HDPs were obtained from 393 238 female individuals for gestational hypertension and 606 903 female individuals for preeclampsia. Seventy-five of 90 proteins (83.3%) had at least 1 valid cis-pQTL. Of those, 10 proteins (13.3%) were significantly associated with HDPs. Four were robust to sensitivity analyses for gestational hypertension (cluster of differentiation 40, eosinophil cationic protein, galectin 3, N-terminal pro-brain natriuretic peptide), and 2 were robust for preeclampsia (cystatin B, heat shock protein 27 [HSP27]). [9]
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Venous Thromboembolism

Incidence	The age-standardized rate for venous thromboembolism (VTE) per 100,000 person-years increased from 32.8 in 2014 to 53.7 cases in 2018 (relative risk of 1.63; 95% confidence interval, 1.6–1.67). [1]
Prevalence	The prevalence of preoperative VTE was 11.1% (n=23/208) in an observational study conducted between December 2010 and August 2014. [2]
Mortality	VTE-related unfavorable outcomes developed in 13.1%, while 30-day all-cause mortality was 8.6%. [3]
Gender	A study identified 95,205 patients with VTE (female, 56.8%). [1]
Age	The RRs for VTE incidence are 0.12 in the 10s (95% CI, 0.11–0.13; P < 0.001), 0.51 in the 20s (95% CI, 0.48–0.53; P < 0.001), but 3.03 in the 50s (95% CI, 2.94–3.13; P < 0.001), 7.66 in the 60s (95% CI, 7.44–7.90; P < 0.001), 18.48 in the 70s (95% CI, 17.95–19.04; P < 0.001), and 25.40 in the 80s or older (95% CI, 24.63–26.18; P < 0.001) age groups, compared with that of the 30s group, respectively. [1]
Regional distribution	The age standardised rate of 53.66 per 100,000 person-years in 2018 is a six-fold increase since 2004, and it is comparable to Asia's highest incidence rate in Singapore. The incidence of VTE incidences in countries in Europe and North America (114–184 per 100,000) are much higher than those in Korea and Asian countries (13.8–57 per 100,000). [1]
Clinical phenotypes/ Classification	The study aimed to compare the characteristics of venous thromboembolic disease in Korean to Caucasian population. The Korean population was older, was less obese, and had more active cancer at baseline than the Caucasian population. Provoked venous thromboembolic disease was more common in the Korean population. And, Koreans showed less accompanying thrombophilia than Caucasians, and factor V Leiden mutations were not detected. Korean analyses comparing the effects of rivaroxaban and standard anticoagulation with primary outcomes showed a lower incidence of major bleeding, recurrent venous thromboembolic disease, and all-cause mortality with rivaroxaban. [4]
Clinical manifestation	Patients with VTE may experience leg swelling, pain, erythema and local heating, dyspnea and other symptoms, but differential diagnosis of VTE can be difficult due to: i) an overlap in symptoms associated with a hip fracture (e.g., swelling and severe pain) or ii) no presenting symptoms. [5] VTE lesions were newly detected in 18 (26%) of the 70 patients. However, none of the patients complained of VTE-related symptoms and multidetector row computed

	tomography demonstrated that all VTEs were small and involved limited portion without lower leg edema or pleuroparenchymal complication. [6]
Risk factor	Most of the patients (90%) had more than one risk factor for VTE and the most common risk factor was old age, followed by heart and respiratory failure. [7]
Diagnosis	VTE is currently diagnosed via blood test, Doppler ultrasound and CT scan, and can also be diagnosed using contrast venography. One representative blood test is the D-dimer in which a negative result means the absence of deep vein thrombosis (DVT). The D-dimer test may be used to help rule out the possibility of DVT, however, results should be interpreted carefully because a positive result may be observed in cases of liver disease, inflammation, malignant tumor, pregnancy, trauma, and even after recent surgery. [5]
Treatment	The proportion of DOAC prescriptions increased from 40.5% to 72.8%, whereas warfarin prescriptions decreased from 27% to 5.6% in 2014 and 2018. It seems that the convenience of use for patients, physician preference, and active marketing of new anticoagulants contributed to the increased use of DOAC. In particular, insurance coverage and easy access to medical institutions seem to be related to greater DOAC use in Korea than in other countries. [1]
Prognosis	In the multivariate analysis, a pulse ≥110/min and respiratory rate ≥30/min were statistically significant predictors for VTE-related unfavorable outcomes. Diabetes was a significant risk factor for major bleeding. In addition, a history of malignancy, no anticoagulation treatment, and need for mechanical ventilation were significant predictors of all-cause mortality. [3]
Genetic information	Genes provided in the present study with genetic variants associated with VTE were FVL (G1691A), Prothrombin (G20210A), MTHFR (C677T, A1298C), PAI-1 (4G/5G), factor VII activating protease (1601G > A), and endothelial protein C receptor (g.6936A_G, c.4600A_G). Among them, variants in FVL, Prothrombin, MTHFR, and PAI-1 showed high significance. [8]
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Dermatology

Acne Vulgaris

Incidence	NR
Prevalence	It is a common condition, with a prevalence of up to 80% among adolescents and young adults. [1]
Mortality	NR
Gender	A total of 221 patients were enrolled, 98 male (44.3%) and 123 female (55.7%). [2] Although recent epidemiological data from Korea are lacking, a study involving 552 Chinese acne patients found that the sample was composed of 387 adolescent and 165 adult patients with acne. Female patients accounted for a greater proportion of adult acne (80.0%) than adolescent acne (64.9%). [3]
Age	Acne is generally known to improve naturally by adulthood; however, it can also occur severely in individuals who did not experience it during adolescence. Acne affects approximately 80% of individuals in their early 20s, 50% in their late 20s, and 30% in their early 30s. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Acne vulgaris is primarily found on areas with increased sebum production, such as the face, neck, back, and chest. These lesions are called comedones and can be divided into two types based on their characteristics: open comedones (blackheads) and closed comedones (whiteheads). [1]
Clinical manifestation	It initially appears mainly on the face, and over time, numerous lesions tend to develop along the midline of the body, including the chest and back. [1]
Risk factor	Acne is a multifactorial condition that presents with various clinical manifestations. Major contributing factors include increased sebum production, follicular hyperkeratinization, colonization by *Propionibacterium acnes*, and inflammatory responses. In addition, genetic and environmental factors are also known to play a role. [1]
Diagnosis	Of the 251 children with acne, 237 (94.4%) had mild and 14 (5.6%) had moderate acne. Moderate acne was present in 1.3% of students in the lower and 7.5% of students in the upper grades (P = 0.04). [4]
Treatment	Locally applied medications are recommended as standard treatment. Topical applications may cause erythema, dryness, and irritation. Therefore, oral treatment is

	often recommended for inflammatory acne, with antibiotics and isotretinoin being the most commonly prescribed drugs. [5] *Although not yet commercially available in Korea, 5% dapsone gel is known to be particularly effective in managing acne in adult women. [1]
Prognosis	Post-inflammatory hyperpigmentation from acne can persist for over a year, and deeper lesions such as large pustules or nodules may leave permanent scars after healing, potentially causing greater cosmetic concerns than the acne itself. [1] The mean duration of acne was 0.7 years in the total group, 0.5 years in the lower grades and 0.8 years in the upper grades (P = 0.04). [4]
Genetic information	In a Korean study, patients with a family history of acne (A+) showed a significantly earlier onset of acne than those without (P = 0.002). Female patients were more likely to report a family history than males (P = 0.002). Even among those without prior treatment experience, earlier onset was observed in the A+ group (P = 0.084). [6] TNF rs1800629 A allele carriers and CYP17A1 rs743572 T allele carriers had significantly reduced mild acne risk [pOR: 0.60; 95% Confidence Interval (CI): 0.33–0.86] and severe acne risk (pOR: 0.59; 95% CI: 0.40–0.79), respectively, across populations. [7]
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Atopic Dermatitis

Incidence	The number of participants in each period was as follows: 223,947 from 2009 to 2011, 146,621 from 2012 to 2013, 140,103 from 2014 to 2015, 127,804 from 2016 to 2017, and 117,343 from 2018 to 2019. [1]
Prevalence	The prevalence of atopic dermatitis (AD) was the highest among patients aged 0–1 year (18.6%–24.5%), decreasing rapidly with increasing age (<2% in patients aged ≥20 years). [2] The weighted prevalence of AD increased from 6.79% (95% CI 6.66–6.91) in 2009–2011 to 7.22% (95% CI 7.06–7.38) in 2016–2017. However, there was a slight decrease immediately preceding the pandemic, from 2018–2019 (6.89%, 95% CI 6.72–7.05) to 2022 (5.82%, 95% CI 5.60–6.04). [1]
Mortality	NR
Gender	In terms of participant demographics, 471,306 (51.37%) of the participants were male, 446,155 (48.63%) female. [1]
Age	The number of patients in each age group is as follows: 377,994 for 0–4 y, 175,749 for 5–9 y, 120,854 for 10–14 y, 91,647 for 15–19 y, 54,982 for 20–24 y, 48,887 for 25–29 y, 39,382 for 30–34 y, 34,285 for 35–39 y, 27,590 for 40–44 y, 25,966 for 45–49 y, 24,039 for 50–54 y, 17,829 for 55–59 y, 15,428 for 60–64 y, 15,652 for 65–69 y, 13,203 for 70–74 y, 8,851 for 75–79 y, 4,719 for 80–84 y, 1,936 for 85–89 y, 514 for 90–95 y, 103 for 95–99 y, and 19 for 100 y and above. [2]
Regional distribution	The regional prevalence in adults increased slightly in metropolitan areas, especially in Gyeonggi, from 0.9% in 2010 to >1.0% in 2015. In contrast, the regional prevalence in children tended to decrease annually throughout the region, especially in the metropolitan areas. The prevalence in Seoul and Gyeonggi, the metropolitan areas of Korea, decreased from 7.1% in 2010 to 6.2% in 2015. Regarding the regional prevalence in 2015, the highest prevalence in children was reported in Jeju, whereas the highest prevalence in adults was reported in Seoul, followed by Gyeonggi, Incheon, and Daejeon. [2]
Clinical phenotypes/ Classification	One of the most representative Classification methods for AD phenotypes is based on the distinction between extrinsic and intrinsic AD. Extrinsic AD is characterized by elevated total immunoglobulin E (IgE) levels and/or sensitization to food or inhalant allergens, whereas intrinsic AD shows neither increased total IgE nor allergen sensitization. The reported distribution of intrinsic AD varies among studies, accounting

	for approximately 10–45% of cases, with a prevalence of around 20% reported in Korea. [3]
Clinical manifestation	The clinical presentation of atopic dermatitis varies significantly depending on the age of onset. Approximately 60–80% of AD patients develop symptoms before the age of two. In infants, skin lesions generally begin around two months of age and appear as papules and vesicles with edema on both cheeks. Among these patients, approximately 40% continue to exhibit cutaneous symptoms beyond infancy and are considered at high risk for progression along the atopic march. [3]
Risk factor	Middle school student status, low parent's highest education level, low household income, non-alcohol consumption, non-smoker smoking status, no suicidal thoughts, and no suicide attempts were associated with increased risk of atopic dermatitis. [1]
Diagnosis	There have been various diagnostic criteria such as Hanifin-Rajka (HR) criteria, the earliest and highly renowned criteria, International Study of Asthma and Allergies in Childhood (ISAAC) criteria, and United Kingdom (UK) Working Party criteria which is a modified criteria suitable for epidemiologic studies. In Korea, Diagnostic criteria for AD include pruritus, eczema with age-specific pattern, and chronic or relapsing history. Diagnostic aids for AD encompass xerosis, immunoglobulin E reactivity, hand–foot eczema, periorbital changes, periauricular changes, perioral changes, nipple eczema, perifollicular accentuation, and personal or family history of atopy. [4]
Treatment	In 2015, the proportion of patients with AD receiving systemic steroids and systemic antibiotics was 27.2% and 4.0%, respectively. The percentage of systemic cyclosporine prescriptions increased from 0.6% in 2010 to 1.2% in 2015. [2]
Prognosis	Patients who develop atopic dermatitis during childhood (ages 2–12 years) are more likely to experience progression to chronic disease or develop comorbid allergic rhinitis. Less than 10% of all AD patients present during adolescence, typically exhibiting both acute lesions and chronic features such as lichenification, along with worsened xerosis. Approximately 20% of AD cases are diagnosed during adulthood (ages 20–60 years), with a predominance in female patients. Adult-onset AD is generally mild, shows limited allergen sensitization, and often presents with normal total IgE levels. [3]
Genetic information	SNPs at a region on 13q21.31 were associated with recalcitrant AD at a genome-wide threshold of significance ($P < 2.0 \times 10(-8)$). These associated SNPs are more than 1 Mb from the closest gene, protocadherin (PCDH)9. SNPs at 4 additional loci had P values of less than $1 \times 10(-6)$, including SNPs at or near the neuroblastoma amplified sequence (NBAS; 2p24.3), thymus-expressed molecule involved in selection (THEMIS; 6q22.33), GATA3 (10p14), and S-phase cyclin A-associated protein in the ER (SCAPER; 15q24.3) genes. [5]

	Three SNPs were associated with allergic disease at a level of genome-wide suggestive significance ($p<1.0\times10-5$) in the Korean population: rs7275360, located in neural cell adhesion molecule 2; rs698195; and rs3750552, located in family with sequence similarity 189, member A2. [6]
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Herpes Zoster

Incidence	A study based on the National Health Insurance Service (NHIS) database in 2011, identified 529,690 individuals with herpes zoster, corresponding to an incidence of 10.4/1,000 person-years in all age groups. [1]
Prevalence	Prevalence of herpes zoster in 2023 was 763,938 cases, based on the total number of patients who received medical care for the condition during the year, according to the Health Insurance Review and Assessment Service (HIRA), Republic of Korea. [2]
Mortality	NR
Gender	Gender distribution of total cases (all ages) in 2023 was as follows: Male: 295,637 cases (38.9%), Female: 465,113 cases (61.1%) [2]
Age	Age distribution of prevalence in patients aged ≥19 years in 2023 was as follows: 20–29 years: 43,719 cases (5.7%), 30–39 years: 79,941 cases (10.5%), 40–49 years: 121,896 cases (16.0%), 50–59 years: 166,518 cases (21.9%), 60–69 years: 186,313 cases (24.5%), 70–79 years: 97,666 cases (12.9%), ≥80 years: 47,611 cases (6.3%) [2]
Regional distribution	The highest number of patients was reported in Gyeonggi Province, with 192,144 cases (25.1%), followed by Seoul with 160,087 cases (20.9%) and Gyeongnam with 48,021 cases (6.3%). Other regions with notable case counts included Busan (48,664 cases, 6.4%), Incheon (40,842 cases, 5.3%), and Gyeongbuk (34,782 cases, 4.6%). Regions such as Daegu (35,310 cases), Chungnam (30,580 cases), Jeonnam (25,724 cases), and Jeonbuk (25,626 cases) each accounted for approximately 3–4% of total cases. The lowest numbers were observed in Sejong with 5,735 cases (0.8%), followed by Jeju (8,438 cases, 1.1%) and Ulsan (15,611 cases, 2.0%). [3]
Clinical phenotypes/ Classification	Disseminated Herpes Zoster (Generalized Herpes Zoster): This refers to cases in which more than 25 vesicular lesions are observed throughout the body. Herpes Zoster Ophthalmicus: Occurs when the ophthalmic branch of the trigeminal nerve is involved. It develops in approximately one-third of patients with involvement of the nasociliary nerve. Ramsay Hunt Syndrome: Caused by varicella-zoster virus infection of the facial and vestibulocochlear nerves, specifically involving the geniculate ganglion. Neurogenic Bladder: May occur when herpes zoster involves the third sacral nerve root, or less commonly, the second or fourth sacral nerve root. [4]
Clinical manifestation	The most common site of the rash was the head or neck (n=49, 90.7%), followed by the trunk (n=4, 7.4%) and extremities (n=1, 1.7%). In cases of trigeminal nerve root

	involvement, the ophthalmic branch was frequently involved, and almost all complications were zoster ophthalmicus cases. [5]
Risk factor	It is known to be associated with immunosuppression, emotional stress, radiation exposure, malignancy, and local trauma. The most important factor is the decline in varicella-zoster virus (VZV)-specific cell-mediated immunity due to aging. In addition, according to a recent meta-analysis, being female (1.3 times higher risk than males), white ethnicity (twice the risk compared to Black individuals), a family history of herpes zoster, autoimmune diseases (such as systemic lupus erythematosus and rheumatoid arthritis), asthma, diabetes, and chronic obstructive pulmonary disease have all been identified as significant risk factors. [4]
Diagnosis	In cases where characteristic skin lesions are present, a diagnosis can be made based solely on the typical clinical features. Traditionally, in dermatology outpatient settings, the Tzanck test may reveal multinucleated giant cells, and this may be used in place of direct immunofluorescence testing. Although viral culture can be performed, its success rate is low. Serological tests may also be used to detect the presence of IgM/ IgG antibodies. Recently, molecular diagnostic methods using polymerase chain reaction (PCR) have become widely used due to their high sensitivity and specificity. [4]
Treatment	During the early vesicle formation stage, wet compresses applied to the lesions can help relieve pain; however, topical antiviral agents are ineffective. In immunocompetent elderly patients, oral antiviral therapy—such as acyclovir (800 mg orally, five times daily for 7 days), famciclovir (500 mg orally, three times daily every 8 hours for 7 days), or valacyclovir (1 g orally, three times daily for 7 days)—when administered within 72 hours of rash onset, can promote healing of the skin lesions, shorten the duration of acute pain, and reduce the incidence of postherpetic neuralgia (PHN). [4]
Prognosis	It has been reported that patients aged 50 years and older who have had herpes zoster are more likely to develop stroke and myocardial infarction 3 to 12 months after the onset of herpes zoster compared to individuals of the same age group without a history of the disease. According to a Korean study, which followed patients for 11 years starting in 2002, the incidence of stroke and myocardial infarction in patients with herpes zoster increased by 1.35-fold and 1.59-fold, respectively. [4]
Genetic information	In the study, the genome sequences of three varicella vaccine strains were analyzed for the genetic diversity including single nucleotide polymorphism (SNP) and genetic polymorphism. The number of genetically polymorphic sites (GPS) was highest in Varivax and lowest in Varilrix. GPS in the R region including R1, R2, and R3 appeared to be responsible for the genetic polymorphisms in the open reading frame (ORF) 11, 14, and 22 in all three vaccine strains. A relatively large number of GPS were observed in ORF31, 55, and 62. [6]

	In Korean patients with herpes zoster, several SNPs appear at high frequencies in the interleukin-10 promoter gene. As a result, the incidence of herpes zoster varies according to race and individual susceptibility to herpes zoster varies. [7]
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Psoriasis

Incidence	A study based on the National Health Insurance Service (NHIS) database in 2011, identified 529,690 individuals with herpes zoster, corresponding to an incidence of 10.4/1,000 person-years in all age groups. [1]
Prevalence	After adjusting for age and sex, the standardized prevalence of psoriasis was 453 per 100,000 in a population-based epidemiological study using the Korean National Health Insurance database of 2015. [2]
Mortality	NR
Gender	In the Asian region total, the male-female ratio was 1.87:1. And the male–female ratio in Korea was 1.71:1. [3] As of 2015, the male-to-female ratio was approximately 1.3:1 among patients with psoriasis. [2]
Age	Age distribution of psoriasis prevalence was as follow: 0-9 years: 5,312 cases (2.3%), 10-19 years: 12,078 cases (5.2%), 20-29 years: 25,217 cases (10.8%), 30-39 years: 37,605 cases (16.1%), 40-49 years: 45,173 cases (19.3%), 50-59 years: 48,775 cases (20.9%), 60-69 years: 31,925 cases (13.6%), 70-79: 21,363 cases (9.1%), ≥80 years: 6,461 cases (2.8%) in 2015 [2]
Regional distribution	Regional distribution of psoriasis prevalence was as follow: City and county (51.3%), metro city (36.7%), rural place (12.0%) [2]
Clinical phenotypes/ Classification	The proportion of psoriasis vulgaris (PsV), psoriatic arthritis (PsA), and pustular psoriasis (PP) was 80.1%, 17.7%, and 2.2%, respectively, and PsA was more commonly associated with nail symptoms than psoriasis vulgaris (PsV). [3] In Korea, Psoriasis patients with an affected body surface area of less than 5%, accounted for 51.7%; those with an affected BSA of 5%–10% accounted for 24.6%, and those with an affected BSA of more than 10% accounted for 23.7%. [3]
Clinical manifestation	Plaque-type psoriasis was the most prevalent, occurring in 1,081 patients (85.8%), followed by guttate type in 106(8.4%), pustular type (including localized form) in 66 (5.2%), erythrodermic type in 44 (3.5%), annular type in 24 (1.9%), and inverse type in 4 (0.3%) [4]
Risk factor	Of the patients, 13% had a familial history of psoriasis and the most frequently affected family member was the father. [3] The adjusted odds ratio (OR) for moderate-to-severe psoriasis as compared with mild psoriasis: male sex (1.11~1.16), young and mid-aged adult patients (children younger than 10: 0.22~0.26, elders older than 60: 0.40~0.77). [2]

	In the present study, 50.6% of patients reported exacerbating factors. The most commonly reported exacerbating factor was the weather season (51.2%), followed by stress (44.2%), lack of sleep (22.9%), fatigue (17.7%), infection (13.2%), and alcohol (10.6%). The association between psoriasis exacerbation during the winter season has been well-established in previous studies. [3]
Diagnosis	The distribution pattern of age at diagnosis revealed dual peaks at 21~25 years and 46~50 years. A ratio of early onset (＜40 years) versus late onset (≥40 years) at diagnosis was 53.9% versus 46.1% (33.8% versus 66.2% when divided by age of 30 years old). [4]
Treatment	In Asia, 78.3% of the patients received topical medications, 9.0% underwent phototherapy, 34.0% received oral medications, and 36.1% were treated with biological agents. [3] *Notably, the percentage of patients receiving topical calcineurin inhibitors was higher in Korea (32.1%) than in China (6.8%) and Japan (1.1%). This discrepancy may be attributed to the fact that topical calcineurin inhibitors are not approved for psoriasis treatment in Japan, unlike in Korea, China. [3]
Prognosis	Sunlight exposure and summer season were helpful in improving the disease state, while winter season and stress aggravated the disease course. [2] A case-control study conducted in Korea showed a higher prevalence of metabolic syndrome, cardiovascular disease, hypertension, and hyperlipidemia in psoriasis patients than in controls. [2]
Genetic information	The human leucocyte antigen (HLA)-Cw6 allele has been consistently associated with an elevated risk of psoriasis across various racial groups. Previous studies have found that individuals with psoriasis who manifest the condition at an early age are more likely to have a familial link and to possess the HLA-Cw6 allele. In addition, research has shown that the prevalence of the HLA-Cw6 allele in individuals with psoriasis is higher among individuals of European descent than of Asian descent. The percentage of HLA-Cw6 positivity in psoriasis patients was found to be 10.5%–12.0% in Japan, 32.5%–50.8% in China, 76.1% in Korea, and 12.1%–32.8% in Chinese Taipei, in the literature. [3]
References	[1] Epidemiology and cardiovascular comorbidities in patients with psoriasis: A Korean nationwide population-based cohort study. Journal of Dermatology. (2017) 44(6): 621-629 [2] Prevalence of Psoriasis in Korea: A Population-Based Epidemiological Study Using the Korean National Health Insurance Database. Ann Dermatol. (2017) 29(6): 761-767 [3] Epidemiological analysis of the patients with psoriasis in Asian countries and region using the same clinical case cards between 2020 and 2022. J Dermatol. 2024;51(4):567-583.

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Endocrine & Metabolism

Cushing's Disease

Incidence	Between January 2013 and December 2017, a total of 584 newly diagnosed cushing's disease (CD) patients were recorded, with more than 100 cases each year. [1] The incidence of CD was 2.3 cases per million. [1]
Prevalence	The prevalence was 9.8 cases per million. [1]
Mortality	A total of 14/117 cases with death were noted in patients with CD, and 9/102 cases were shown to undergo either medical or surgical treatment, and 5/15 cases were found to be untreated. This resulted in a significantly lower mortality rate in the treated group than those in the untreated group (HR, 4.648; 95% CI, 1.391 to 8.183; P=0.0029). [1]
Gender	The majority of patients were females, accounting for 88.0% of all cases. [1] In 2017, A total of 114 patients with Cushing's disease were identified. Of these, 25 (21.9%) were male and 89 (78.1%) were female. [1]
Age	The age distribution of patients diagnosed with Cushing's disease in 2017 is as follows. : 0–19 years: 2 patients (1.8%), 20–29 years: 14 patients (12.3%), 30–39 years: 24 patients (21.1%), 40–49 years: 19 patients (16.7%), 50–59 years: 30 patients (26.3%), 60–69 years: 15 patients (13.2%), 70–79 years: 9 patients (7.9%), Over 79 years: 1 patient (0.9%) [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Cushing's disease is generally caused by microcorticotropinomas (MICs) and in approximately 7-20% of patients by macrocorticotropinomas (MACs). [2] CD with macroadenoma (n=7/30) and CD with microadenoma (n=23/30) [3]
Clinical manifestation	CD is a serious condition associated with high rates of morbidity and mortality that result from excessive levels of systemic glucocorticoids. The classic features of CD include central obesity, moon face, hirsutism, facial plethora, buffalo hump, hypertension, and purple striae. CD is also characterized by high risks of osteoporosis and fractures. [4]
Risk factor	While these findings are not derived from Korean populations, international research has reported the following: Comparison of Knosp grade 0 to 2 vs 3 to 4 showed that lower grades had reduced risk of recurrence (OR = 0.27, P = .04). Other factors such as length of stay, surgeon experience, prior tumor treatment, and Knosp grades 1, 2, or 3 failed to reach levels of statistical significance in multivariable analysis. [5]
Diagnosis	Until recently, inferior petrosal sinus sampling (IPSS) with corticotropin-releasing hormone was performed to stimulate adrenocorticotropic hormone (ACTH) secretion

	and allow for the discrimination between CD and ectopic ACTH-secreting tumors; however, IPSS is currently performed using desmopressin, because of its stable supply and lower cost. Additionally, an 8-mg overnight dexamethasone suppression test is now employed rather than the classic 5-day dexamethasone suppression test, because the latter requires an inconveniently long testing period. [4]
Treatment	Endoscopic transsphenoidal surgery, the first-line treatment for CD, is performed to decrease complications while achieving remission and long-term disease control. [5] Despite initial remission, patients with CD may eventually experience recurrence. The mean recurrence rate at the 5-10-year follow-up is 23% for microadenomas and 33% for macroadenomas. [6] Although several drugs are available for Cushing's disease, there remains an unmet need for new and effective drugs because patients continue to suffer from the low tolerability and effectiveness of previous treatments. Osilodrostat is a potent, oral, reversible inhibitor of 11β-hydroxylase. In a phase 3 trial, osilodrostat maintained a complete response in 53% of 137 patients without up-titration after week 12. [7] *The above information was updated in 2020. Osilodrostat (Isturisa®) was approved by the Ministry of Food and Drug Safety in November 2024 and is available for use in patients with endogenous Cushing's syndrome.
Prognosis	CD is known to have a high CVD-associated mortality rate because of impaired glucose metabolism and persistent hypertension caused by neurohormonal effects. [1] CVD risk factors such as body mass index, blood pressure, and fasting blood glucose level were increased in patients with CD even after 5 years of successful treatment when compared with that age- and sex-matched controls. [1]
Genetic information	USP8-mutations have been identified as a major genetic cause of CD (~ 50%). The urinary cortisol levels of our patients with corticotropin USP8-mutated-alleles were lower than those of patients with wild-type alleles ($p \leq 0.017$). The frequency of USP8-mutated-alleles among the series was approximately 30% with a higher prevalence in female-patients ($p < 0.1 \times 10\text{-}4$). Among the 5 series, the remission rates were higher in patients with USP8-mutated-alleles than in those with the USP8-WT-alleles ($p < 0.1 \times 10\text{-}4$). [2]
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Dyslipidemia

Incidence	NR
Prevalence	The crude prevalence of dyslipidemia—more than one out of three conditions (low-density lipoprotein cholesterol ≥160 or the use of a lipid-lowering drug, triglycerides ≥200, or high-density lipoprotein cholesterol [HDL-C] [men and women] <40 mg/dL)—was 40.2% between 2016 and 2020. [1]
Mortality	A nationwide Korean cohort study investigated the relationship between total cholesterol (TC) and all-cause mortality across age and sex groups. During follow-up, 694,423 individuals died. U-curve associations were found. In the TC ranges of 50–199 and 200–449 mg/dL, each 39 mg/dL (1 mmol/L) increase in TC was associated with 23% lower (95% CI:23%,24%) and 7% higher (6%,7%) mortality, respectively. [2]
Gender	The sex distribution was similar, with 49.9% male and 50.1% female. [3]
Age	The age distribution was as follows: 20–29 years, 19.1%; 30–39 years, 19.6%; 40–49 years, 21.4%; 50–59 years, 20.0%; 60–69 years, 11.4%; 70–79 years, 7.5%; and 80 years and older, 1.0%, with the largest proportion observed in the 40–49 age group. [3]
Regional distribution	NR
Clinical phenotypes/ Classification	The Fredrickson Classification of dyslipidemia, originally proposed in the 1960s, was adopted by the World Health Organization (WHO) in 1972 and categorizes lipid disorders into five phenotypes (types I–V) based on characteristic lipoprotein abnormalities. They separated disorders of elevated cholesterol and/or triglycerides into five phenotypes (types I–V), each of which represented a characteristic abnormality: chylomicrons (types I, V), very low-density lipoproteins (VLDL) (types IIb, IV, V), low-density lipoproteins (LDL) (types IIa, IIb), or remnant particles (type III). [4]
Clinical manifestation	NR
Risk factor	An analysis of socioeconomic status showed that the prevalence of dyslipidemia was higher among individuals with lower income levels (χ^2 = 23.38, p < .001) and lower educational attainment (χ^2 = 93.09, p < .001). Regarding marital status, the prevalence was higher in married individuals compared to those who were unmarried (χ^2 = 155.87, p < .001). In terms of alcohol consumption, those in the heavy drinking group had the highest prevalence of dyslipidemia (χ^2 = 26.52, p < .001), and among smoking status categories, current smokers showed the highest prevalence (χ^2 = 98.17, p < .001). Regarding physical activity, the inactive group had a higher prevalence than the active group (χ^2 = 26.60, p < .001). With respect to BMI, the prevalence of dyslipidemia was

	53.4% in the overweight group, 29.5% in the normal weight group, and 9.4% in the underweight group, indicating a statistically significant difference according to obesity status (χ^2 = 343.21, p < .001). Lastly, individuals with comorbid hypertension (χ^2 = 562.15, p < .001) or diabetes mellitus (χ^2 = 426.60, p < .001) had a significantly higher prevalence of dyslipidemia. [3]
Diagnosis	Hyper- LDL cholesterolemia was defined as serum LDL-cholesterol ≥160 mg/dL or taking antidyslipidemic drug(s). Hypo- HDL cholesterolemia was defined as serum HDL-cholesterol < 40mg/dL. Hypertriglyceridemia was defined as serum triglycerides ≥200mg/dL. Dyslipidemia was diagnosed as having one of the definitions stated above, taking any medication for dyslipidemia, or previously diagnosed. [5]
Treatment	Among individuals with dyslipidemia, 1,114 (17.5%) were in the medication adherence group. [3] Because of the high failure rate in achieving the low-density lipoprotein target in patients with atherosclerotic cardiovascular disease, the 2019 European Society of Cardiology guidelines recommend adding ezetimibe therapy to the maximally tolerated intensity of statin. However, this study, which represents routine clinical practice in Korea and was performed before the publication of the RACING trial, identified an increasing trend of favoring moderate-intensity statin with ezetimibe combination therapy over high-intensity statin monotherapy in patients undergoing percutaneous coronary intervention. This trend of favoring combination therapy has been previously demonstrated in the treatment of hypertension. [6] * According to the 2022 Korean guidelines for the management of dyslipidemia, the standard treatment is to add ezetimibe if the target LDL-C level is not achieved despite using the maximally tolerated dose of statin. However, in actual clinical practice, it is uncommon to use statins at their maximum dose, and ezetimibe is often added at an earlier stage. When the initial drug treatment failed to achieve the LDL-C goal, 62.7% of the participants answered that they added ezetimibe first, while 34.6% increased statin dose to the maximum. Regarding the reason for the early use of ezetimibe instead of statin intensification, participants chose the following as the main reasons: concerns regarding the side effects of high-dose statins (16.0%) and improved chances of attaining LDL-C goal when ezetimibe was added (16.2%). [7]
Prognosis	The awareness was 48.90% (95% CI 47.34–50.47). The treatment reached 38.19% (95% CI 36.61–39.76), with a particularly notable rise during the COVID-19 period (βdiff, 3.94 [95% CI 1.97–5.92]). Control among prevalence was 31.82% (95% CI 30.33–33.32), with further enhancing of this trend during the pandemic (βdiff, 3.52 [95% CI 1.67–5.38]). Control among treatment was 74.55% (95% CI 72.56–76.55). [8]

Genetic information	GWAS of the entire cohort revealed a total of five significant SNPs: rs117026536 (LPL), rs651821 (APOA5), rs9804646 (APOA5), rs9926440 (CETP), and rs429358 (APOE). GWAS of the male subjects revealed a total of four significant SNPs. While rs9804646 (APOA5) and rs429358 (APOE) were significant for all the subjects, rs662799 (APOA5) and rs56156922 (CETP) were significant only for the male subjects. GWAS of the female subjects revealed two significant SNPs, rs651821 (APOA5) and rs9804646 (APOA5), both of which were significant in all the subjects. [9]
References	[1] Dyslipidemia Fact Sheet in South Korea, 2022. Diabetes Metab J. 2023;47(5):632-642. [2] Total cholesterol and all-cause mortality by sex and age: a prospective cohort study among 12.8 million adults. Sci Rep 9, 1596 (2019). [3] Risk Factors of Dyslipidemia and Related Factors of Medication Adherence in Korea Adults: KNHANES 2013-2015. Journal of Korean Biological Nursing Science. Korean Society of Biological Nursing Science. (2017) [4] Modern prevalence of the Fredrickson-Levy-Lees dyslipidemias: findings from the Very Large Database of Lipids and National Health and Nutrition Examination Survey. Arch Med Sci. 2019;16(6):1279-1287. [5] *Dyslipidemia Fact Sheet 2018 in Korea*. Seoul: Korean Society of Lipid and Atherosclerosis. Korean Society of Lipid and Atherosclerosis. (2018). [6] Comparative effectiveness of moderate-intensity statin with ezetimibe therapy versus high-intensity statin monotherapy in patients with acute coronary syndrome: a nationwide cohort study. Sci Rep 14, 838 (2024). [7] Significant Gap Between Guidelines and Practice in the Management of LDL Cholesterol: Insight From the Survey of the Korean Society of Myocardial Infarction. J Korean Med Sci. 2023;38(50):e419. [8] National trends in dyslipidemia prevalence, awareness, treatment, and control in South Korea from 2005 to 2022. Sci Rep 15, 16148 (2025). [9] Sex-related differences in single nucleotide polymorphisms associated with dyslipidemia in a Korean population [published correction appears in Lipids Health Dis. 2022 Dec 16;21(1):139.

Hypoparathyroidism

Incidence	The crude incidence of nonsurgical hypoparathyroidism was 0.13 cases per 100,000 person-years in 2015. [1]
Prevalence	The age-standardized prevalence of nonsurgical hypoparathyroidism was 1.1 cases per 100,000 persons in 2015. [1]
Mortality	The risk of mortality in the case group was not significantly increased compared with that in the control group (HR, 1.56; 95% CI, 0.86–2.84; P = 0.145) [1]
Gender	59%(n=529) of patients were female. [1]
Age	The mean (± standard deviation) age was 43.8 ± 21.9 years. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	NR
Clinical manifestation	The classic symptom of hypoparathyroidism is neuromuscular irritability owing to hypocalcemia. Other manifestations can occur due to episodes of hypercalcemia and hyperphosphatemia (for example, extraskeletal calcification), but the cause of some symptoms (for example, neuropsychiatric symptoms) remains poorly understood. [2]
Risk factor	The most frequent cause of hypoparathyroidism is the inadvertent removal or damage of parathyroid glands during neck surgery; the remaining one-fourth of cases are related to genetic or autoimmune causes, magnesium deficiency, and other rare etiologies. [3]
Diagnosis	The biochemical hallmark and diagnostic criteria of hypoparathyroidism is two episodes of hypocalcemia at least 2 weeks apart with concomitant inappropriately low PTH levels. Low PTH causes additional biochemical abnormalities in hypoparathyroidism that support the diagnosis: blood phosphate levels are high - normal or frankly elevated; circulating concentrations of 1,25 - dihydroxy - vitamin D and bone turnover markers are low or in the low - normal range; and fractional urinary excretion of calcium is elevated especially when the blood calcium levels have been raised into the normal range by convention treatment. [3]
Treatment	Conventional treatment of adults with hypoparathyroidism involves calcium supplementation or activated vitamin D supplementation (using calcitriol or alphacalcidol (1α(OH)D3)), or a combination of both. Treatment aims to increase intestinal calcium absorption to increase serum calcium concentrations. [2]

Prognosis	During a mean follow-up period of 9.5 years, patients with nonsurgical hypoparathyroidism had a higher risk of cardiovascular disease, especially arrhythmia (hazard ratio [HR], 2.03; 95% confidence interval [CI], 1.11–3.70) and heart failure (HR, 2.43; 95% CI, 1.22–4.83). The risk of vertebral fracture was higher in patients than in controls (HR, 2.27; 95% CI, 1.09–4.72). Patients had a significantly increased risk of renal disease (HR, 2.57; 95% CI, 1.56–4.21), seizure (HR, 5.74; 95% CI, 3.34–9.86), depression and bipolar disease (HR, 1.82; 95% CI, 1.30–2.56), and cataract (HR, 1.90; 95% CI, 1.30–2.79) compared with controls. [1]
Genetic information	Genetic forms of hypoparathyroidism include isolated hypoparathyroidism and syndromes with hypoparathyroidism as a component. [3] In one family who underwent the whole exome sequencing analysis, approximately 300 single nucleotide changes emerged as candidates for genetic alteration. Among them, we identified a functional mutation in exon 2 of GCMB (C106R) in two affected cases. Besides, heterozygous gain-of-function mutations in the CASR gene were found in other subjects; D410E and P221L. We also found one single nucleotide polymorphism (SNP) in the prepro-PTH gene, five SNPs in the CASR gene, and four SNPs in the GCMB gene. [4]
References	[1] Prevalence and complications of nonsurgical hypoparathyroidism in Korea: A nationwide cohort study. PLoS One. 2020;15(5):e0232842. [2] Hypoparathyroidism. Nature Revies Disease Primers 3 (2017) Article number: 17055 [3] Hypoparathyroidism: Genetics and Diagnosis. J Bone Miner Res. 2022;37(12):2615-2629. [4] Genetic and clinical characteristics of korean patients with isolated hypoparathyroidism: from the Korean hypopara registry study. J Korean Med Sci. 2013;28(10):1489-1495.

Metabolic Syndrome

Incidence	During the mean follow-up period of 5 years, the incidence of metabolic syndrome (MetS) was 435 (10.7%) and 1,260 (8.9%) subjects in men and women, respectively. [1]
Prevalence	The age-adjusted prevalence of metabolic syndrome was 30.52% in 2013 (P <0.01). [2]
Mortality	People with metabolic syndrome have high risks of morbidity and mortality because of cardiovascular disease and type 2 diabetes. [3] As compared to those without, people with Mets had an increased HR for all cause mortality of 2.44 (95% confidence interval [CI]: 1.20-4.94). [4]
Gender	In the study, the increase in prevalence was more prominent in men, and this gender difference was mainly attributed to a decreased prevalence of abdominal obesity in middle-aged women (age 50–69 years). [2]
Age	Based on the KNHANES VII data (2016–2018), the current prevalence of MetS among Korean adults aged ≥19 years was 23%, and it was 27.7% among adults aged ≥30 years. The prevalence of MetS among adults aged ≥65 years was 45.3%. The prevalence of MetS increases with age. The prevalence exceeded 40% in men in their 60s, while for women, it exceeded 50% in their 70s. [5]
Regional distribution	The highest MetS prevalence rates in 2016–2018 were found in Jeonnam (34.7%), Gangwon (30.7%), Chungbuk (30.6%), and Jeonbuk (30.4%). The prevalence of MetS is higher in rural residents than in urban residents, and it has also remarkably increased, especially in rural regions over the past 12 years. [5]
Clinical phenotypes/ Classification	In the study, waist circumference (WC) was the best indicator of MetS in men of all age groups. However, in women aged 40-49 years, the waist-to-height ratio (WHtR) was the best indicator of MetS. Rib circumference and chest circumference were the strongest indicators in women aged 50-59 years and 70-79 years, respectively. The combination of WC and triglyceride (TG) was the best indicator of MetS in men and women overall. [6]
Clinical manifestation	Metabolic syndrome is a condition marked by a complex set of physiological, biochemical, and metabolic factors, such as abdominal obesity, insulin resistance, high blood pressure, and dyslipidemia (elevated triglycerides and low levels of high-density lipoproteins). [7]
Risk factor	Regarding social factors, an increased prevalence of MetS in subjects with a lower educational level, lower family income, and rural residents has been observed. [5]

Diagnosis	The diagnostic criteria based on the International Diabetes Federation (IDF) are as follows. In the study, Individuals with three or more of the following criteria were defined as having metabolic syndrome: 1) Abdominal obesity; WC ≥90 cm in men or ≥80 cm in women; 2) Hypertriglyceridemia; TG ≥150 mg/dL or medication use; 3) Low HDL-cholesterol; HDL-cholesterol <40 mg/dL in men and <50 mg/dL in women or medication use; 4) High BP; systolic BP ≥130 mmHg and/or diastolic BP ≥85 mmHg or use of antihypertensive agents; 5) Hyperglycemia; FPG ≥100 mg/dL or use of antidiabetic medication. [2] * However, the criteria of waist circumference (≥80 cm) for women seemed to be unsuitable for Asian ethnic groups, including Koreans. When this cut-off value was applied to the Korean population, the prevalence of metabolic syndrome in women was higher than men by approximately 1.5-fold. In fact, the prevalence of abdominal obesity exceeds 50% using this cut-off value in Korean postmenopausal women. Based on this, the Korean Society for the Study of Obesity (KOSSO) recommends to use the cut-off values of waist circumference for abdominal obesity in Koreans as ≥90 cm for men and ≥85 cm for women. Using these cut-off values, the prevalence of abdominal obesity was 19.8% in men and 24.5% in women. However, the KOSSO cut-off values were not based on prospective data; hence, further study results are required to find the optimal cut-off values for abdominal obesity in Korea. [8]
Treatment	Healthy lifestyle changes are the first line of treatment for Mets. Medication is used to treat and control the five components of Mets, such as weight control, high blood pressure, high TGs, low HDL-C, and high blood glucose. [9]
Prognosis	People with metabolic syndrome have high risks of morbidity and mortality because of cardiovascular disease and type 2 diabetes. [3]
Genetic information	After adjusting for age and sex, rs662799 located in the APOA5 gene were significantly associated with MetS. 15 SNPs in GCKR, C2orf16, APOA5, ZPR1, and BUD13 were associated with high triglyceride (TG). 14 SNPs in APOA5, ALDH1A2, LIPC, HERPUD1, and CETP, and 2 SNPs in MTNR1B were associated with low high density lipoprotein cholesterol (HDL-C) and high fasting blood glucose respectively. [10]
References	[1] Association of Relative Handgrip Strength with the Incidence of Metabolic Syndrome in Korean Adults: A Community Based Cohort Study. Exercise Science. 28. 303-310. (2019) [2] Trends in the prevalence of metabolic syndrome and its components in South Korea: Findings from the Korean National Health Insurance Service Database (2009-2013). PLoS One. 2018;13(3):e0194490.

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Non-Alcoholic Fatty Liver Disease

Incidence	From 2010 to 2022, the incidence of non-alcoholic fatty liver disease (NAFLD*) in patients who visited hospitals more than once annually rose from 1.87% to 4.47%. [1]
Prevalence	Over a ten-year period from 2012 to 2022, the prevalence of NAFLD* among adults increased from 10.49% in 2012 to 17.13% in 2022. [1] The prevalence of NAFLD* was estimated to be approximately 50.7% in the general population, and it varied substantially across countries and regions, from 22.3% to 81.5%. According to a recently published study, the prevalence of NAFLD* in Korea was reported to be 33.9%. [2]
Mortality	In the time-dependent models, the multivariable-adjusted HRs (95% CIs) in the low, intermediate, and high FIB-4 score groups in the NAFLD* group were 0.43 (0.19–0.94), 2.74 (1.23–6.06), and 84.66 (39.05–183.54), respectively. [3]
Gender	The rates in males and females increased from 1.86% to 4.55% and from 1.87% to 4.38%, respectively. [1]
Age	The highest incidence rates were in individuals aged from 60 to 69 years, reaching 6.79% in males and 7.83% in females by 2022. [1]
Regional distribution	The incidence rates of NAFLD* over the decade in both urban and rural settings were compared, demonstrating a consistent increase from 1.92% to 4.50% in urban areas and from 1.92% to 4.05% in rural areas. [1]
Clinical phenotypes/ Classification	It is classified into two types: macrovesicular and microvesicular steatosis. Steatosis in NAFLD* is usually macrovesicular; however, microvesicular steatosis may also be present in approximately 10% of patients with NAFLD*. [2]
Clinical manifestation	NAFLD* is one type of fatty liver which occurs when fat is deposited (steatosis) in the liver due to causes other than excessive alcohol use. [4] One survey revealed awareness of the terminology for NAFLD*; however, the knowledge that NAFLD* can progress to end-stage liver disease and incident CVD is lacking in the general population. Only 40.2% of people diagnosed with NAFLD* incidentally visited a clinic for further evaluation or management. 28.3 Of the men, 28.3% pointed out that they did not consider NAFLD* a grave disease, whereas 54.5% of the women responded that they had never received an explanation from a doctor that disease management was necessary. [5]
Risk factor	Risk factors for NAFLD* include insulin resistance and metabolic syndrome i.e., three or more of the following: obesity, diabetes mellitus, hypertension, low high-density

	lipoprotein levels, and high triglyceride levels. Among these, obesity is the most common risk factor. [2]
Diagnosis	The term non-alcoholic fatty liver disease (NAFLD*) was first introduced by Schaffner in 1986. It is characterized by excessive hepatic fat accumulation, associated with insulin resistance and defined as the histological presence of steatosis in >5% hepatocytes. As non-invasive measurement, proton magnetic resonance spectroscopy or quantitative fat/water selective magnetic resonance imaging (MRI) can be used to measure steatosis by determining the proton density fat fraction (rough estimation of the fat volume fraction in the liver; steatosis >5.6%). [2] * Multinational liver societies, including those in the United States and Europe, have agreed to change the nomenclature and definitions of non-alcoholic fatty liver disease (NAFLD). This decision was made because the current name is thought to obscure the etiology of the disease and carry a stigma. The proposed new terminology is metabolic dysfunction-associated steatotic liver disease (MASLD) to replace NAFLD, and metabolic dysfunction-associated steatohepatitis (MASH) to replace nonalcoholic steatohepatitis. [6]
Treatment	Pegozafermin is a fibroblast growth factor 21 (FGF21) analogue currently under development for the treatment of nonalcoholic steatohepatitis (NASH) and severe hypertriglyceridemia. It demonstrated both histological improvement in liver fibrosis and resolution of NASH in patients with biopsy-confirmed F2 or F3 fibrosis in the phase 2b ENLIVEN trial, [7] and is currently being evaluated in phase 3 clinical studies (ENLIGHTEN program) for further confirmation.
Prognosis	The incidence rates in the NAFLD* group were 13.42% for malignancy, 15.72% for ischemic heart disease, and 8.36% for ischemic stroke. These rates were significantly higher than those in the control group, which were 11.76% for malignancy, 10.85% for ischemic heart disease, and 7.26% for ischemic stroke. [1] The incidence rates of cirrhosis and hepatocellular carcinoma over ten years were 2.22% and 0.77%, respectively. [1]
Genetic information	Typically, patatin-like phospholipase domain-containing protein 3 (PNPLA3) and transmembrane 6 superfamily member 2 (TM6SF2) nucleotide polymorphisms affect the development and progression of the disease. Furthermore, homozygous carriers of p.148M mutations show a 12-fold increased risk of developing HCC, suggesting the potential for monogenic inheritance. The rs738409[G] allele of PNPLA3 has been consistently shown to be associated with higher liver fat content and necroinflammatory scores and a substantially increased risk of developing fibrosis. The PNPLA3 rs738409[G] allele is more common in Asians with lean NAFLD without metabolic syndrome, which

	could account for the observation that Asian and Caucasian populations have a similar prevalence of NAFLD*. [2]
References	[1] Evolving epidemiology of non-alcoholic fatty liver disease in South Korea: incidence, prevalence, progression, and healthcare implications from 2010 to 2022. Korean J Intern Med. 2024;39(6):931-944. [2] Non-alcoholic fatty liver disease: Definition and subtypes. Clin Mol Hepatol. 2023;29(suppl):S5-S16. [3] Alcoholic and Nonalcoholic Fatty Liver Disease and Liver-Related Mortality: A Cohort Study. Am J Gastroenterol. 2019;114(4):620-629. [4] The Analysis of Non-pharmacological Intervention Study for Nonalcoholic Fatty Liver Disease: Intervention Types and Measurement Parameters. Journal of Korean biological nursing science (2013) 15: 43-53 [5] A survey on the awareness, current management, and barriers for non-alcoholic fatty liver disease among the general Korean population. Sci Rep. 2023;13(1):15205. [6] No More NAFLD: The Term Is Now MASLD. Endocrinol Metab. 2024;39(1):92-94. [7] Pegozafermin for NASH and fibrosis: phase IIb results. Nat Rev Gastroenterol Hepatol 20, 631 (2023).

Obesity

Incidence	NR
Prevalence	The prevalence of obesity in Korea has steadily increased over the past decade, reaching 38.4% in 2021. [1]
Mortality	The meta-analysis showed a U-shaped relationship between body mass index (BMI) and all-cause mortality risk, with the lowest mortality in the BMI range of 25–30 kg/m2. Subgroup analysis showed a J-shaped relationship, with greater risk in the highest BMI range (>35 kg/m2). [2] The results for Asian and non-Asian populations were consistent with the general findings. However, in the subgroup of the elderly within the Asian population, a more pronounced U-shaped trend was observed compared to the general and non-Asian populations. [2]
Gender	The prevalence of class II–III obesity, defined as a BMI of 30 kg/m2 or higher, surpassed 7% in 2021. This increase was more pronounced in men than in women (Fig. 1C). The highest prevalence of class III obesity was observed in men in their 20s (2.6%) and 30s (2.6%), and in women in their 30s (1.59%). [1]
Age	The 2023 Obesity Fact Sheet highlights a significant increase in the prevalence of class II and III obesity, particularly among young adults aged 20 to 39 years. Millennials, born in the mid-1980s to early 2000s, exhibited a significantly higher incidence of obesity than the previous generation. [1]
Regional distribution	The prevalence of overall obesity and all three classes of obesity increased in all regions of South Korea in 2018 compared to 2009. In 2018, Jeju-si had the highest prevalence of all obesity classes and the second highest prevalence of all obesity classes was observed in Gangwon-do. [3]
Clinical phenotypes/ Classification	Not all individuals with obesity develop metabolic complications, which has brought about the concepts of metabolically healthy and unhealthy obesity (MHO/MUO). [4] Traditionally, the prevalence of obesity was known to be higher in women than in men, and the increase in its prevalence was usually higher in women than in men, and MHO was also reported to be more common in women than in men, and to be more likely to occur in younger people. [5]
Clinical manifestation	According to the *Diabetes Fact Sheet*, the prevalence of diabetes among Korean adults currently stands at 16.7%, and this figure continues to rise each year. The *Dyslipidemia Fact Sheet* reports that the prevalence of hypercholesterolemia has more than doubled from 9.0% in 2007 to 20.7% in 2018, with a rapid increase also observed in the number of Koreans receiving treatment for dyslipidemia. The sharp rise in these cardiovascular risk

	factors is closely linked to the increasing obesity rate, as more than 50% of individuals with diabetes are already obese, and both hypertension and dyslipidemia are commonly associated comorbidities of obesity. The increase in these comorbid conditions, in turn, contributes to the rising prevalence of cardiovascular disease. [6]
Risk factor	Among Korean adults aged 19–39 years, the prevalence of obesity, prediabetes, and prehypertension was 45.4%, 29.2%, and 31.1% in male and 20.5%, 17.7%, and 12.5% in female, respectively. Obesity was associated with lower education and higher stress levels in both sexes. In male, additional factors included marital status, lower income, alcohol use, and a history of smoking, whereas in female, obesity was linked to labor job or unemployment. [7]
Diagnosis	Obesity is defined by the Asia-Pacific criteria of the World Health Organization as a body mass index of 25 kg/m2 or higher. The Korean Society for the Study of Obesity (KSSO) categorizes overweight (pre-obesity) as a BMI of 23 kg/m2 or higher and obesity as a BMI of 25 kg/m2 or higher, based on a marked increase in obesity-related comorbidities. [1]
Treatment	According to the 2024 Clinical Practice Guidelines of the Korean Society for the Study of Obesity (KSSO), pharmacotherapy for obesity follows these principles: (1) The fundamental treatment for obesity consists of dietary therapy, physical activity, and behavioral therapy; pharmacological treatment is considered as an adjunct to these approaches. (2) Pharmacotherapy may be considered for adults with a body mass index (BMI) of 25 kg/m^2 or higher who have not achieved weight loss through non-pharmacological methods. (3) Medications approved based on large-scale clinical trials should be used for long-term weight management. (4) If a patient fails to achieve a weight reduction of at least 5% within three months of treatment with a maintenance dose of an anti-obesity drug, the medication should be discontinued or changed. The choice of medication should be personalized, taking into account the patient's comorbid conditions, current medications, and contraindications. As obesity is a chronic disease, long-term maintenance of pharmacotherapy is important if the treatment proves effective. [8]
Prognosis	Metabolically unhealthy status was associated with higher risk of all-cause and cardiovascular mortality regardless of BMI levels, and there was a dose-response relationship between the number of incident metabolic diseases and mortality risk. In conclusion, poor metabolic health status contributed more to mortality than high BMI did, in Korean adults. [9]
Genetic information	An increase or decrease in BMI was analyzed using PLINK, STRING, and DAVID, with significant differences observed in the AEN, ANKS1B, CSF1, EEF2K, FRAS1, GRIK4, PDGFC, THTPA, and TREH genes. These genes were observed to cluster with pathways related to

	type 2 diabetes, cardiovascular disease, metabolic processes, and endocytosis-related genes. [10] Gene-based and gene-set analyses, along with cluster analysis, revealed heterogeneous patterns of significant genes on chromosomes 3 (MUO group) and 11 (MHO group). In analyses targeting genetic predisposition differences based on metabolic health, odds ratios of high PRS compared with medium PRS showed significant differences between non-obese and MUO, and non-obese and MHO. Similar patterns were seen for low PRS compared with medium PRS. [11]
References	[1] Epidemiology and Trends of Obesity and Bariatric Surgery in Korea. Endocrinol Metab (Seoul). 2024;39(5):678-685. [2] Impact of Body Mass Index on All-Cause Mortality in Adults: A Systematic Review and Meta-Analysis. J Clin Med. 2024;13(8):2305. [3] Obesity Fact Sheet in Korea, 2020: Prevalence of Obesity by Obesity Class from 2009 to 2018. J Obes Metab Syndr. 2021;30(2):141-148. [4] Assessment of a consensus definition of obesity and metabolic health phenotypes in children at different pubertal stages. Sci Rep 12, 21129 (2022). [5] Trends in the Prevalence of Obesity and Its Phenotypes Based on the Korea National Health and Nutrition Examination Survey from 2007 to 2017 in Korea. Diabetes Metab J. 2022;46(5):808-812. [6] Current status of obesity treatment in Korea: based on the 2020 Korean Society for the Study of Obesity guidelines for obesity management, J Korean Med Assoc. 2022;65(7):388-392. Published online July 10, 2022 [7] Prevalence of Obesity, its Comorbidities, and Related Risk Factors among Young Korean Adults: Using the Korea National Health and Nutrition Examination Survey (2019–2021). Korean Journal of Family Practice. 2024; 14(4) 211-219. [8] Recent advances in the pharmacological treatment of obesity. Journal of the Korean Medical Association. 2025; 68(5) 321-332. [9] Obesity, metabolic health, and mortality in adults: a nationwide population-based study in Korea. Sci Rep 6, 30329 (2016). [10] Genetic Variants Associated with Body Mass Index Changes in Korean Adults: The Anseong and Ansan Cohorts of the Korean Genome and Epidemiology Study. Current Issues in Molecular Biology. 2024; 46(8):9074-9081. [11] Genetic determinants of obesity in Korean populations: exploring genome-wide associations and polygenic risk scores. Brief Bioinform. 2024;25(5):bbae389.

Osteoporosis

Incidence	Between 2008 and 2016 in Korea, although the absolute number of osteoporotic fractures increased year-on-year from 186,488 to 275,131, fracture incidence (numbers of osteoporotic fractures per 10,000 of the general population) has remained constant from 2013. [1]
Prevalence	Among Korean adults aged ≥50 years, 22.4% and 47.9% had osteopenia or osteoporosis, respectively. [1]
Mortality	Osteoporotic fractures can directly lead to death and, even in survivors, often result in serious disabilities that require assistance from others. Among these, hip fractures are less frequent than other types of osteoporotic fractures, but they are associated with significantly reduced mobility and high mortality rates. In a prospective study by Lee et al. [2], 790 patients diagnosed with hip fractures were followed for up to 8 years, and the mortality rates were reported as follows: 16.7% at 1 year, 25.2% at 2 years, 45.8% at 5 years, and 60% at 8 years. [3] A study analyzing data from the National Health Insurance Service reported that, in 2012, the one-year mortality rate following hip fractures was 16% overall (21% in men and 15% in women). The mortality rate in men was 1.4 times higher than that in women. [3]
Gender	The prevalence of osteoporosis was 5 times higher in women (37.3%) than in men (7.5%), whereas the prevalence of osteopenia was similar in women (48.9%) and men (46.8%). [1]
Age	The prevalence of osteoporosis increased with age for both genders, and reached almost 70% in women aged ≥70 years. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Vertebral fractures were most common in all age groups, except for women in their 50s. Distal radius fractures mainly occurred in the 50s and hip fractures rapidly increased from 70 years of age. [1]
Clinical manifestation	According to the 2015 guidelines of the Korean Society for Bone and Mineral Research (KSBMR), osteoporotic fractures are defined as fractures resulting from low-energy trauma, such as a fall from a standing height, rather than from high-energy trauma like traffic accidents. Major osteoporotic fractures are typically defined as fractures of the spine, hip, wrist, and humerus occurring in men and women aged 50 and older. Additional osteoporotic fractures include those of the pelvis, sacrum, ribs, distal femur, distal humerus, and ankle. [3]

Risk factor	A previous osteoporotic fracture history is the strongest risk factor of future fracture. [1]
Diagnosis	The diagnostic criteria for osteoporosis, as defined by the World Health Organization (WHO), classify the condition as having a bone mineral density (BMD) that is 2.5 standard deviations or more below the average peak BMD of a young adult reference population. The most accurate method for diagnosing osteoporosis is direct measurement of bone mineral density. [3]
Treatment	Only a relatively small number of patients are being treated for osteoporosis in Korea. In particular, only 4 of 10 patients with an osteoporotic fracture history take AOMs during the 12 months after fracture. The percentage of vertebral fracture patients prescribed AOMs during the 12 months after fracture was higher (53.2%) than for those with a hip (36.6%), humerus (22.9%), or distal radius (22.6%) fracture. The under-treatment of patients at high risk for osteoporotic fracture, including those with a fracture history, is a worldwide management problem. [1] Osteoporosis medications are broadly categorized into antiresorptive agents, anabolic agents, and those with dual effects. Currently available antiresorptive agents include selective estrogen receptor modulators (SERMs), bisphosphonates, and denosumab. Anabolic agents include parathyroid hormone (PTH) analogs, while romosozumab is a medication with dual action—both stimulating bone formation and inhibiting bone resorption. [3]
Prognosis	Approximately half of individuals that have experienced one osteoporotic fracture are known to experience another, and the number of fractures experienced exponentially increases the risk of future fracture. Although few studies have addressed the incidence of subsequent fracture, a recent study found that the overall cumulative incidence of subsequent fracture following an index fracture was 12% at 24 months. Similarly, this present study has reported cumulative incidences for subsequent fracture of 12.1% and 24.8% during 24 and 48 months of follow-up in Korea, respectively, regardless of index fracture type, although vertebrae were most frequently affected by secondary fractures. [1]
Genetic information	The genetic risk scores for osteoporosis were strongly associated with predicting osteoporosis, and they were involved in the balance of osteogenesis and osteoclastogenesis in the present study. Osteogenesis is associated with TGF-β and Wnt signaling through COL1A1, COL1A2, LRP5, PLS3, and WNT1. Furthermore, rs6086746 in the PLCB4 promoter alters the binding affinity to RUNX2 to influence the osteoporosis risk.37 Osteoclastogenesis is involved in RANKL-induced bone resorption with runt domain transcription factor 2 (RUNX2), osteoprotegerin (OPG), and NF-κB activation.38 In a previous study, the polygenetic-risk scores of AKAP11_rs238340, KCNMA1_rs628948,

	PUM1_rs7529390, SPTBN1_rs6752877, and EPDR1_rs2722298 were positively associated with the susceptibility to osteoporosis by 1.7-fold. [4]
References	[1] Osteoporosis and Osteoporotic Fracture Fact Sheet in Korea. J Bone Metab. 2020;27(4):281-290. [2] Incidence and outcome of osteoporotic fractures in 2004 in Sado City, Niigata Prefecture, Japan. J Bone Miner Metab 2008;26:373-378. [3] Epidemiology of osteoporosis in Korea. J Korean Med Assoc. 2016;59(11):836-841. [4] A Prediction Model for Osteoporosis Risk Using a Machine-Learning Approach and Its Validation in a Large Cohort. J Korean Med Sci. 2023 Apr;38(21):e162.

Pediatric Type 1 Diabetes Mellitus

Incidence	A total of 29,013 children were registered. The overall incidence of type 1 diabetes mellitus (T1DM) was 4.45 per 100,000 persons. The overall incidence of childhood-onset T1DM in Korea increased from 3.70 in 2008 to 4.77 in 2016 (P=0.002). [1]
Prevalence	The overall prevalence of childhood-onset T1DM in Korea increased significantly from 32.85 to 41.03 per 100,000 persons between 2007 and 2017. [1]
Mortality	NR
Gender	The overall prevalence of childhood-onset T1DM in Korea was 43.88 per 100,000 in girls, 41.03 per 100,000 persons in boys. [1]
Age	Mean age at T1DM diagnosis was 8.9 ± 4.0 years. In total, 65.1% of the study population was prepubertal. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	NR
Clinical manifestation	Among 91 subjects, type 1 DM, latent autoimmune diabetes (LAD), and type 2 DM were 51 (56.0%), diabetic ketoacidosis (DKA) was more common (70% vs. 14.3% vs. 6.2%, respectively, P<0.001) at disease onset in type 1 DM than in other 2 groups. Serum c-peptide levels was lowest in type 1 DM (0.52±0.45 ng/mL vs. 1.92±1.07 ng/mL vs. 3.62±2.02 ng/mL, respectively, P<0.001), and fructosamine levels at diagnosis were highest in type 1 DM (639.28±188.05 μmol/L vs. 579.0±119.03 μmol/L vs. 462.14±210.98 μmol/L, respectively, P=0.009). glycated hemoglobin (HbA1c) at diagnosis showed no significant difference among groups subdivided by the type of DM. Autoantibody positivity was 96% in type 1 DM, with anti-glutamic acid decarboxylase (GAD) autoantibody as most common. [3]
Risk factor	Risk factors predicting DKA at T1DM diagnosis were age ≥ 12 years, lower serum C-peptide levels, presence of a preceding infection, and delayed diagnosis. Low parental education level and preceding infection increased the severity of DKA. [2]
Diagnosis	Although a HbA1c level of ≥6.5% is used as a diagnostic criterion for diabetes in both adults and children/adolescents, its standalone use in the pediatric population remains unclear and requires further research. In particular, using the HbA1c ≥6.5% criterion alone to diagnose type 1 diabetes in children and adolescents is considered inappropriate. [4]

Treatment	The guidelines published by the American Diabetes Association (ADA) in 2005 recommended age-specific HbA1c targets for children and adolescents: <8.5% for those under 6 years of age, <8.0% for those aged 6–12 years, and <7.5% for adolescents aged 13–19 years. However, subsequent studies reported no association between recurrent hypoglycemia and impaired neurocognitive function. Moreover, maintaining good glycemic control even before puberty is believed to reduce the risk of future microvascular and macrovascular complications. Some studies have also indicated that hyperglycemia and wide glycemic variability may negatively affect short-term neurocognitive function and the central nervous system. Currently, the recommended glycemic target for individuals with type 1 diabetes, regardless of age, is an HbA1c level of <7.0%. Target blood glucose levels are recommended as follows: 70–130 mg/dL before meals, 90–180 mg/dL after meals, and 80–140 mg/dL at bedtime. [4] For patients continuing pump therapy, HbA1c levels significantly decreased after 1 year of therapy (from 8.9% to 8.1%, P<0.001) without changes in the body mass index z-scores or insulin dose. Although 4 patients experienced diabetic ketoacidosis, all recovered without complications. [5]
Prognosis	The prevalence of diabetes-related complications during childhood and adolescence in patients with type 1 diabetes is generally low. However, a longer duration of diabetes, older age, and puberty are considered risk factors for the development of complications. It is recommended to begin screening for complications from the age of 11. In patients who develop type 1 diabetes at a younger age, screening for chronic complications should start five years after diagnosis, even if the patient is still prepubertal, in order to detect any early signs of complications and initiate appropriate management. [4]
Genetic information	The positivity of the anti-ICA512, anti-GAD65, and anti-insulin autoantibodies in the newly onset T1DM patients (n = 15) was 66.7%, 86.7%, and 46.7%, respectively, and all of them had one or more of the autoantibodies. HLA analysis showed higher frequencies of HLA-DRB1*0301, *0405, *09012 and -DQB1*0201, *0401, *03032 alleles in T1DM patients compared to controls (P(c) < 0.05). Because HLA-DQB1*0401, *03032 alleles carry aspartic acid at position 57 of DQB, susceptibility to T1DM in Korean children was not related to the presence of aspartic acid at position 57 of DQB1 locus. [6]
References	[1] Incidence and Prevalence of Type 1 Diabetes Mellitus among Korean Children and Adolescents between 2007 and 2017: An Epidemiologic Study Based on a National Database. Diabetes Metab J. 2020;44(6):866-874. [2] Factors Associated with the Presence and Severity of Diabetic Ketoacidosis at Diagnosis of Type 1 Diabetes in Korean Children and Adolescents. J Korean Med Sci. 2017;32(2):303-309.

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Type 1 Diabetes Mellitus

Incidence	An average of 136 new type 1 diabetes mellitus (T1DM) patients were registered to the T1DM registry each month, resulting in 1,632 newly diagnosed T1DM patients each year. [1] The incidence rate of new T1DM cases was 3.28 per 100,000 people. [1]
Prevalence	The prevalence of type 1 diabetes in South Korea increased from 32.85 per 100,000 population in 2007. [2] The prevalence of T1DM was 1.66 diagnosed per 10,000 policyholders for the 49,662,097 policyholders. [1]
Mortality	The study used the Health Insurance Sample Cohort database, which consists of 1,021,208 people, and analyzed the cause of death for 10 years from 2006 to 2015 based on the data. The hazard ratio (HR: risk ratio) of diabetic patients was 1.45 times (1.23 to 1.71) higher than that of normal people. Type 1 diabetes patients were 2.43 times(1.34 to 4.39) and Type 2 diabetes patients were 1.43 times(1.21 to 1.70) higher than that of normal people. Type 1 diabetes patients were 3.83 times higher in the high income group (1.23 to 11.96). [3] The mortality risk was significantly higher in patients with T1D (3.69; 95% CI 1.95-6.98) than in the control group. [4]
Gender	Among the 8,256 subjects, 3,899 (47.2%) were male and 4,357 (52.8%) were female, and the male to female ratio was 1:1.12. [1]
Age	The mean age at the sampling time point was 35.1±18.4 years old, and the minimum age was 0 and the maximum age was 89. [1] 2,346 registrants (28.4%) were under 20 years old (114 were 0 to 4 years old, 394 in the 10 to 14 age bracket, and 998 in the 15 to 19 age bracket), 5,910 T1DM patients (71.6%) were over 20 years old, and 96.2% of all subjects were under 69 years of age. [1]
Regional distribution	Gyeonggi (a local province) had the largest number of registrants with 2,334, followed by Seoul (the capital city) with 2,056, Busan with 641, Jeju with 146, and Sejong with five registrants. The registration rate in the Korean Type 1 Diabetes Mellitus Registry was significantly higher in the Jeju region (the biggest island) at 0.026% compared with the other local populations, which averaged 0.0125% ($P<0.05$). [1]
Clinical phenotypes/ Classification	Recent evidence suggests that T1DM is also a heterogeneous disease and significance advances have been made in precision prediction, prevention, diagnosis, and treatment in T1DM. Mounting evidence has confirmed the importance of precision

	medicine in T1DM. An insightful understanding of the etiology of T1DM revealed the role of novel omics biomarkers in addition to genetics and immunity (9). Clinical parameters such as islet autoantibodies, age of disease onset, body mass index (BMI), C-peptide, as well as genetic factors such as human leukocyte antigen (HLA) and genetic risk score (GRS) were utilized in T1DM sub-phenotyping using hypothesis-driven and data-driven approaches. [5]
Clinical manifestation	At the time of presentation, 75% (21 out of 28) of patients with type 1 diabetes mellitus (T1DM) exhibited the classic triad of symptoms: polyuria, polydipsia, and polyphagia. Weight loss was observed in 57% (16/28) of cases. Other symptoms included gastrointestinal symptoms such as vomiting or abdominal pain in 21% (6/28), and altered consciousness in 21% (6/28). Diabetic ketoacidosis (DKA) was present at diagnosis in 57% (16/28) of patients with type 1 diabetes, while none of the patients with type 2 diabetes presented with DKA. [6]
Risk factor	Among the 42 pediatric patients, 21 (50%) had a family history of diabetes. In type 1 diabetes, 39% (11 out of 28) had a family history, whereas in type 2 diabetes, 70% (7 out of 10) had a family history, indicating that a family history of diabetes was more common among patients with type 2 diabetes. [6]
Diagnosis	T1DM is most commonly diagnosed in puberty, but there are also patients diagnosed with T1DM after the age of 20. [1]
Treatment	All registered subjects with type 1 diabetes used insulin, a mandatory requirement. [1] In the RCTs, insulin lispro continuous subcutaneous insulin infusion (CSII) and multiple daily injections (MDI) therapy showed comparable incidences of diabetic ketoacidosis and severe hypoglycemia. The Agency for Healthcare Research and Quality systematic review of RCTs concluded that both insulin delivery modalities (CSII and MDI) display similar effectiveness on glycemic control and severe hypoglycemia in pediatric patients with T1DM. In children and adults with T1DM, CSII improves quality of life greater than MDI, albeit with low strength of evidence. [7]
Prognosis	After adjusting for sex, age, family income, hypertension, and dyslipidemia, the hazard ratio (HR) for MI was 6.76 (95% CI 2.44-18.72) for T1D. The HR for stroke was 4.65 (95% CI 1.70-12.71) for T1D. The HR for kidney failure was 20.92 (95% CI 11.40-38.39) for T1D. [4]
Genetic information	The HLA-DRB1*04:05–HLA-DQB1*04:01 haplotype was significantly associated with increased risk of fulminant T1DM in Fisher's exact test (odds ratio [OR], 4.11; 95% confidence interval [CI], 1.56 to 10.86; p = 0.009). A histidine residue at HLA-DRβ1 position 13 was marginally associated with increased risk of fulminant T1DM (OR, 2.45; 95% CI ,1.01 to 5.94; p = 0.054). [8]

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Type 2 Diabetes Mellitus

Incidence	Over a mean follow-up period of 4 years (49.8 ± 13.3 months, IQR 45–72 months), a total of 1,167 new cases (4.0%) of type 2 diabetes (T2D) were identified. [1]
Prevalence	In South Korea, the prevalence of type 2 diabetes among adults aged ≥30 years was estimated to be 16.7% in 2020, and the prevalence of type 2 diabetes increased from 7.9% in 2009 to 12.4% in 2021. [2]
Mortality	The study used the Health Insurance Sample Cohort database, which consists of 1,021,208 people, and analyzed the cause of death for 10 years from 2006 to 2015 based on the data. The hazard ratio (HR: risk ratio) of diabetic patients was 1.45 times (1.23 to 1.71) higher than that of normal people. Type 1 diabetes patients were 2.43 times (1.34 to 4.39) and Type 2 diabetes patients were 1.43 times (1.21 to 1.70) higher than that of normal people. Type 2 diabetes patients were the highest in the suicide HR 2.97 times (1.88 to 4.71) of the age of 20-39. [3] The mortality risk was significantly higher in patients with type 2 diabetes (3.06; 95% CI 2.02-4.63) than in the control group. The mortality risk was highest in the type 2 diabetes subgroup of participants aged <20 years at enrollment (10.70; 95% CI 4.41-25.94). [4]
Gender	Among 1,167 new cases, 490 patients were men [5.7%] and 677 patients were women [3.3%]). [1]
Age	Compared to male participants, female participants showed lower prevalence (wOR 0.75, 95% CI 0.72-0.79), higher awareness (wOR 1.28, 95% CI 1.16-1.41), higher treatment (wOR 1.31, 95% CI 1.20-1.44), and lower control participants with diabetes (wOR 0.90, 95% CI 0.81-1.00). [2]
Regional distribution	NR
Clinical phenotypes/ Classification	An algorithmic subClassification approach that has been arguably the most well replicated, including with findings of clinical consequences related to the subgroups, was proposed in 2018 by Leif Groop and colleagues (sometimes referred to as the Ahlqvist Classification). The ANDIS clusters were named after their most defining trait: severe autoimmune diabetes (SAID) was defined by being GAD65 positive and thus included all individuals with type 1 diabetes and LADA. Individuals in the severe insulin-deficient diabetes (SIDD) group were GAD65 negative but otherwise similar to SAID. SIDD had the highest risk of early diabetic retinopathy and neuropathy. Severe insulin-resistant diabetes (SIRD) was characterised by obesity, severe insulin resistance, high insulin secretion and late onset, but relatively low HbA1c. People with SIRD also had a higher prevalence of non-alcoholic fatty liver. The mild obesity-related diabetes (MOD) and mild

	age-related diabetes (MARD) subtypes were characterised by early onset (and obesity) and late onset, respectively. [5]
Clinical manifestation	In patients with type 2 diabetes mellitus, 20% (2 out of 10) presented without any symptoms, while 70% (7/10) exhibited the classic triad of symptoms: polyuria, polydipsia, and polyphagia. No cases presented with gastrointestinal symptoms or altered consciousness. [6]
Risk factor	Among the 42 pediatric patients, 21 (50%) had a family history of diabetes. In type 1 diabetes, 39% (11 out of 28) had a family history, whereas in type 2 diabetes, 70% (7 out of 10) had a family history, indicating that a family history of diabetes was more common among patients with type 2 diabetes. [6]
Diagnosis	Annual screening (Expert opinion, General) for diabetes should be conducted for adults aged ≥35 and adults aged ≥19 with risk factors (Others, General) using fasting plasma glucose, HbA1c, and 2-hour plasma glucose during a 75 g oral glucose tolerance test (NRS, General). [7]
Treatment	When selecting glucose-lowering agents for patients with T2DM, it is important to consider not only the glucose-lowering efficacy of the drugs, but also the characteristics of both the patient and the medication. In patients without comorbidities such as heart failure, atherosclerotic cardiovascular disease, or chronic kidney disease, metformin is generally recommended as the first-line treatment. However, depending on the patient's condition, other oral hypoglycemic agents may also be initiated as monotherapy. Recently, studies demonstrating the cardio-renal protective effects of diabetes medications have led to a shift in the treatment paradigm for type 2 diabetes—from focusing solely on glycemic control to incorporating organ protection. This paradigm shift has been actively reflected in the 2023 Korean Diabetes Clinical Practice Guidelines. In particular, for patients with heart failure or chronic kidney disease, the guidelines now recommend the use of SGLT2 inhibitors regardless of HbA1c levels. When considering injection-based combination therapy, GLP-1 receptor agonists (GLP-1 RAs) are recommended prior to basal insulin. [8] In our study of 57 576 study population, the use of SGLT2i increased from 1.20% in 2015 to 10.51% by 2020. GLP1RA usage increased from 0% to 1.17% over the same period. [9]
Prognosis	After adjusting for sex, age, family income, hypertension, and dyslipidemia, the hazard ratio (HR) for MI was 5.07 (95% CI 2.48-10.36) for T2D. The HR for stroke was 3.30 (95% CI 1.67-6.53) for T2D. The HR for kidney failure was 2.78 (95% CI 1.37-5.64) for type 2 diabetes. [4]
Genetic information	In total, 7 loci were significant with a Bonferroni adjusted P=1.03×10−6. rs2233580 in paired box gene 4 (PAX4) showed the highest odds ratio of 1.48 (P=1.60×10−10).

	rs11960799 in membrane associated ring-CH-type finger 3 (MARCH3) and rs75680863 in transcobalamin 2 (TCN2) were newly identified loci. [10] One analysis showed that the T2DM PRS could predict the transition of glucose tolerance stages from normal glucose tolerance to prediabetes and from prediabetes to T2DM. Moreover, T2DM patients in the top-decile PRS group were more likely to be treated with insulin (hazard ratio = 1.69, p value = 2.31E−02) than were those in the remaining PRS groups. [11]
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Gastrointestinal

Dyspepsia

Incidence	NR
Prevalence	The prevalence of functional dyspepsia (FD) was 10.3% in the health check-up population in Korea. [1]
Mortality	After multivariate analysis, there was no significant difference in likelihood of death at 10 years in those with dyspepsia (HR: 0.94; 99% CI: 0.58-1.54) or IBS (HR: 1.35; 99% CI: 0.36-5.10), compared with those not meeting the criteria for either condition. [2]
Gender	Among 1714 subjects without organic disease, 917 patients (53.5%) were female. [1] When FD was analyzed by sex, the prevalence of FD in female was 12.4% (114/917) and the prevalence of male FD was at 7.8% (62/797). [1]
Age	The mean (± SD) age was 51.5 (± 12.7) years. [1] When analysis was performed depending on age, the prevalence of FD at age ≥60 years was 11.3% (51/450) compared with 9.9% (125/1264) in patients aged below 60. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	According to the Rome III criteria revised in 2006, FD was divided into 2 subtypes, namely, epigastric pain syndrome (EPS) and postprandial distress syndrome (PDS), and these definition was also adopted by the Rome IV criteria. [2] The subtypes of postprandial distress syndrome alone, epigastric pain syndrome alone, and postprandial distress syndrome-epigastric pain syndrome overlap were 4.8%, 3.0%, and 2.5%, respectively. [1]
Clinical manifestation	PDS was characterized by symptoms of early satiety, bloating, postprandial fullness and nausea. EPS was defined by the symptoms of epigastric pain and burning. [1]
Risk factor	The proportion of H. pylori seropositivity was 51.0% (874/1714). [1] Multivariate analysis showed that female gender (OR, 1.58; 95% CI, 1.14–2.21) and education below college level (OR, 1.45; 95% CI, 1.01–2.07) were related to FD. [1]
Diagnosis	Functional dyspepsia is diagnosed based on typical symptoms after excluding organic diseases such as gastric cancer or peptic ulcer. Clinical guidelines from the United States and Canada recommend testing for Helicobacter pylori in patients with dyspepsia rather than performing immediate endoscopy. If the test result is positive, eradication therapy should be initiated, and upper gastrointestinal endoscopy should be considered only if symptoms persist thereafter. However, unlike Western countries, in Asia the cost of endoscopy is relatively low, and more importantly, the prevalence of gastric cancer is higher and the age of onset is younger. Therefore, a different approach is required.

	Accordingly, the 2020 clinical practice guidelines for functional dyspepsia strongly recommend early upper gastrointestinal endoscopy in chronic dyspepsia patients aged 40 years or older to exclude organic causes. [3]
Treatment	If the symptoms become chronic or repeat after the elimination of the underlying disease, patients with FD should be treated with PPIs, especially in EPS subtypes. Although H2RAs were shown to be as effective, their effectiveness is unknown for long-term use. Prokinetics such as dopamine D2 antagonists and 5-HT4 receptor agonists could be used for patients with FD, especially in PDS subtypes. Some D2 antagonists need to be used carefully as they can cause adverse reactions during long-term use. Meta-analysis shows significant but modest efficacy of Helicobacter pylori eradication on long-term resolution of FD symptom. [3] * Itopride was found to be effective for global symptom improvement, postprandial fullness, and early satiation when compared to placebo in a meta-analysis comprising 9 studies that included a total of 2620 patients. Although this drug is not available in the USA or UK owing to negative phase III study results, it can be used in Korea. [3]
Prognosis	Of 128 FD patients, 64 (50%) also met Rome IV criteria for irritable bowel syndrome (IBS). In the final multivariable model, lower baseline sleep disturbance, improvement in anxiety scores, absence of IBS, and a lower number of medications taken for gastrointestinal symptoms were associated with improvement in dyspepsia scores ($P < .05$ for all). Conversely, higher baseline dyspepsia severity was associated with greater improvement in dyspepsia severity at follow-up evaluation ($P < .001$). [4]
Genetic information	Genetic polymorphisms in GNβ3-subunit gene were related to changes in the sensitivity of sensory and motor nerves of the gastrointestinal tract due to decreased signal transduction, resulting in functional dyspepsia and irritable bowel syndrome. [8, 11, 14] In the case of FD patients treated with cimetidine, changes in enzyme activity due to CYP2C19 polymorphism may affect the drug efficacy. [5]
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Gastroesophageal Reflux Disease (GERD)

Incidence	NR
Prevalence	The overall prevalence of reflux esophagitis (RE) was 6.4% (651/10,158); 4.5% (457/10,158) in LA-A, 1.8% (182/10,158) in LA-B, and 0.1% (12/10,158) in LA-C. [1]
Mortality	NR
Gender	The prevalence of RE in men was significantly higher than that in women (10.6% vs. 2.0%, P < 0.001); however, symptomatic Gastro-esophageal reflux disease (GERD) showed predominance in women (6.2% vs. 2.5%, P < 0.001). [1] Among 10,158 participants, 50.9% of them were men. [1]
Age	Their mean age was 47.1 ± 10.2 years. [1]
Regional distribution	A total of 3,413 patients were included in this study, of whom, 978 (28.7%) had been diagnosed with RE by EGD. Among patients with reflux esophagitis (n = 978), residency was distributed as follows: Rural and capital areas (excluding the Greater Gangnam area): 660 patients (67.5%), Greater Gangnam area (Gangnam, Seocho, Songpa districts): 318 patients (32.5%). [2]
Clinical phenotypes/ Classification	The Rome IV criteria subdivided non-erosive reflux disease (NERD) into "true NERD," reflux hypersensitivity, and functional heartburn, based on the esophageal acid exposure and reflux symptom correlation from pH or 24-hour ambulatory pH-impedance monitoring studies.5 The difference in symptom perceptions may be related to esophageal hypersensitivity or cognitive hypervigilance. [3] The prevalence of symptomatic GERD in women was significantly higher compared to that in men in all age groups (2.5% vs. 6.2%, P < 0.001). In women, its prevalence dramatically increased above the age of 50, and high prevalence persisted since then. [1]
Clinical manifestation	Among patients with reflux esophagitis (n = 978), the following symptoms were reported: Epigastric pain in 425 patients (12.5%), Recurrent abdominal pain in 233 patients (6.8%), Vomiting, nausea, regurgitation, or dyspepsia in 192 patients (5.6%), Heartburn (chest pain, discomfort) in 33 patients (1.0%), Gastrointestinal bleeding in 55 patients (1.6%), Anemia or iron deficiency anemia in 13 patients (0.4%), Dysphagia in 10 patients (0.3%), Evaluation for other diseases in 17 patients (0.5%). [2]

Risk factor	Several studies reported that the common risk factors for RE and GERD are age, obesity, hiatal hernia, alcohol drinking, and smoking. In addition, gender-related factors might contribute in the pathogenesis and development of RE and symptomatic GERD. [1]
Diagnosis	The GerdQ and Reflux Disease Questionnaire (RDQ) are the most frequently used questionnaires with multilingual versions.46-48 The GerdQ use confirmed that a family practitioner could diagnose GERD at a gastroenterologist level.47 Moreover, about 80.0% of the subjects with ≥ 8 points filled a positive result of one diagnostic modality including pH-study, endoscopy, or positive response to PPI treatment. [4]
Treatment	Proton pump inhibitors (PPIs) and histamine H2-receptor antagonists (H2RAs), which are representative acid-suppressive agents, have been widely used as primary treatments for acid-related disorders. In Korea, their usage has continued to increase in parallel with the rising prevalence of acid-related diseases. [5] Since the introduction of potassium-competitive acid blockers (P-CABs) in Korea, their use—primarily centered around tegoprazan and fexuprazan—has shown a continuous upward trend. Although the overall use of P-CABs remained limited prior to 2019, a sharp increase was observed following the initial reimbursement of tegoprazan under the national health insurance system in March 2019. This trend further accelerated after fexuprazan became eligible for reimbursement in July 2022. Between January and May 2023, the use of P-CABs for acid-related disorders in Korea reached 937 defined daily doses (DDD) per 100,000 population. [5] In the tegoprazan group, 26.2% (182/694) of those with episodes experienced symptom improvement within 30 min, which is a significantly higher proportion compared to 16.1% (104/646) in the esomeprazole group. Compared to the esomeprazole group, the tegoprazan group had a significantly shorter time to symptom improvement overall and a significantly higher proportion of patients who improved within 30 min. [6]
Prognosis	Weight loss or waist reduction was associated with improvement in GERD symptoms only in subjects with general or abdominal obesity. Among subjects with general obesity (BMI ≥25 kg/m2) and decreased ≥2 kg/m2 in BMI, the adjusted odds ratio of improvement in GERD symptoms was 2.34 (95% confidence interval [CI] 1.70-2.83). Among subjects with abdominal obesity (waist circumference ≥90 cm) and decreased ≥5 cm in waist circumference, the corresponding OR was 2.16 (95% CI 1.56-2.90). [7]
Genetic information	Polymorphisms in SLC25A26 were analyzed in 1,369 domestic gastric disease patients and 7,471 healthy controls. As a result, 11 single nucleotide polymorphisms (SNPs) (in the genotype) and 13 SNPs (in the imputation) showed statistical significance ($P<0.05$), and high relative risk of gastric diseases. Among them, the rs13874 allele of SLC25A26 showed a highly significant association with gastric diseases. [8]

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Irritable Bowel Syndrome

Incidence	A total of 2,416,424 patients used medical care related to irritable bowel syndrome (IBS) in 2018. [1]
Prevalence	According to an internet survey that adopted the Rome III criteria, the prevalence of IBS was estimated to be 10.1% in the world population, 9.3% in Japan, and 7.4% in China (South Korean data were not shown). [2] A survey conducted among 1,018 high school students from freshman to senior year in Seoul found that the prevalence of IBS was 19.1%. [3]
Mortality	A total of 25,697 participants (5.1%) had a history of IBS at baseline. After a median follow-up of 13.7 years, a total of 44,499 deaths occurred. Having an IBS diagnosis was strongly associated with lower risks of all-cause (HR = 0.70, 95% CI = 0.62-0.78) and all-cancer (HR = 0.69, 95% CI = 0.60-0.79) mortality in the first 5 years of follow-up. [4]
Gender	According to a study conducted in Korea, the prevalence of IBS-like symptoms was 14.5%, with 15.1% of male and 13.9% of female participants reporting such symptoms. [5]
Age	The mean ages of patients with IBS was 45.4±13.6 years. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	On assessing the prevalence of IBS subtypes in Japan, China, and South Korea, IBS-M had the highest prevalence in all 3 countries (52.12%, 47.37%, and 37.50%, respectively). In contrast, unclassified IBS had the lowest prevalence in Japan and China, and IBS-D had the lowest prevalence in South Korea (7.82%, 8.77%, and 15.63%, respectively). [2]
Clinical manifestation	Among the total of 119 participants (74.4%) who had experienced gastrointestinal diseases, the distribution by type was as follows: enteritis in 101 participants (84.9%), gastric ulcer in 4 (3.4%), duodenal ulcer in 1 (0.8%), gastritis in 63 (52.9%), esophagitis in 12 (10.1%), and appendicitis in 10 (8.4%). Meanwhile, 39 participants (24.4%) had experienced non-gastrointestinal diseases. Among them, 1 (2.6%) had diabetes, 2 (5.1%) had hypertension, 2 (5.1%) had hepatitis B, 11 (28.2%) had asthma, 1 (2.6%) had stroke, 4 (10.3%) had hypothyroidism, 14 (35.9%) had mental disorders, and 11 (28.2%) had other conditions. [5]
Risk factor	Family history of IBS (OR=2.98, 95% CI=1.32~6.70), history of stomach and intestinal disease (OR=2.24, 95% CI=1.36~3.77), sleep quality (OR=2.01, 95% CI=1.16~3.48), mild anxiety (OR=2.75, 95% CI=1.19~6.33) and more than moderate anxiety (OR=2.02, 95% CI=1.02~4.00) were found to be factors related to IBS. [6]

Diagnosis	The Rome III criteria for IBS were used in this study. These criteria include recurrent abdominal pain or discomfort (experienced for at least 3 days per month in the previous 3 months) associated with 2 or more of the following characteristics: (1) symptom improvement after defecation, (2) symptom onset associated with a change in defecation frequency, and (3) symptom onset associated with a change in stool form (appearance). Subtypes were based on stool consistency and included IBS with constipation (IBS-C), IBS-D, mixed IBS (IBS-M), and unclassified IBS (IBS-U). [2] In patients suspected of having irritable bowel syndrome, colonoscopy may be considered when alarm features are present, such as rectal bleeding, unexplained weight loss, gastrointestinal symptoms that awaken the patient at night, changes in bowel habits in individuals over the age of 50, or a family history of gastrointestinal cancer. [7]
Treatment	Foods high in FODMAPs include napa cabbage, garlic, radish, green onions, chili peppers, mushrooms, and cabbage. These ingredients are commonly used in the base seasonings or sauces of Korean cuisine. Therefore, foods such as kimchi, gochujang (red chili paste), doenjang (fermented soybean paste), ssamjang (seasoned soybean paste), and dumplings are considered high-FODMAP foods. [7] Although there are no epidemiological studies on low-FODMAP diets in Korea, international research continues to demonstrate that the low-FODMAP diet is one of the most effective dietary approaches for managing IBS. Based on failure to achieve an improvement in global IBS symptoms, a low FODMAP diet ranked first vs habitual diet (RR of symptoms not improving=0.67; 95% CI 0.48 to 0.91, P-score=0.99), and was superior to all other interventions. Low FODMAP diet ranked first for abdominal pain severity, abdominal bloating or distension severity and bowel habit, although for the latter it was not superior to any other intervention. [8] Regarding treatment methods chosen, 16 participants (20.3%) reported doing “nothing,” 16 (20.3%) had “consulted a doctor,” 4 (5.1%) had “consulted a pharmacist,” 7 (8.9%) had “asked questions on internet portal sites,” 9 (11.4%) had tried “dietary therapy,” 8 (10.1%) had taken “probiotic products,” 16 (20.3%) had taken “simple rest,” and 3 (3.8%) had used “medications based on personal judgment. In addition, among the 79 participants with IBS symptoms, 6 (7.6%) had taken medications. Among these, 4 (66.7%) had used laxatives, 4 (66.7%) had taken antidiarrheal agents, and 3 (50.0%) had taken other types of medication. [5]
Prognosis	More than 80% of patients diagnosed with IBS also experience psychological issues such as depression, anxiety, or stress. [5]
Genetic information	Case-control studies conducted in India and South Korea found that the polymorphism of -1291C>G in α2A-adrenergic receptor gene was closely related to IBS-D rather than IBS-C. [9] A study compared the (AAT)n triplet of the CNR1 gene between IBS patients

	and healthy controls in the South Koreans, and found the significant correlation between the > 10/> 10 genotype and higher IBS risk. [9]
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Liver Cirrhosis

Incidence	From 2008 to 2017, 16,888 patients visit records from six hospitals were collected and analyzed. [1]
Prevalence	The prevalence of liver cirrhosis is 0.5% in total population, 0.6% in men and 0.4% in women using data from Korean Statistical Information Service (KOSIS) in 2017. [2]
Mortality	Cirrhosis caused 1.48 million deaths in 2019, an increase of 8.1% compared to 2017. [3] Men had higher all-cause and liver-related mortality rates than women (7.1% vs. 4.6%, P < 0.001; 5.3% vs. 3.2%, P < 0.001, respectively), and only the all-cause mortality rate decreased in men during the 10-year period (Exp[B] = 0.976, P = 0.047). [1]
Gender	Among the 4,875 patients diagnosed with liver cirrhosis between 2010 and 2014, 72.4% (3,528 individuals) were male. [4]
Age	Among 4,875 patients diagnosed with liver cirrhosis between 2010 and 2014, the mean age was 58.1 years (±11.9). Patients aged 51–60 years accounted for the largest proportion at 32.9% (1,604 individuals), followed by those aged 61–70 years at 23.2% (1,131 individuals), and 41–50 years at 19.0% (928 individuals). Patients aged over 70 comprised 10.8% (963 individuals), and those under 40 accounted for 5.1% (249 individuals). [4]
Regional distribution	Regional distribution of age-standardized death rate of liver diseases including cirrhosis was as follow: Seoul: 7.5%, Busan: 10.9%, Daegu: 11.9%, Incheon: 10.3%, Gwangju: 6.8%, Daejeon: 7.1%, Ulsan: 8.8%, Sejong: 4.3%, Gyeonggi: 8.4%, Gangwon: 13.0%, Chungbuk: 9.6%, Chungnam: 11.2%, Jeonbuk: 8.7%, Jeonnam: 10.7%, Gyeongbuk: 11.6%, Gyeongnam: 9.8%, Jeju: 11.1%. [2]
Clinical phenotypes/ Classification	The proportion of cirrhotic patients with immune-mediated hepatitis, including autoimmune hepatitis, primary biliary cholangitis (PBC), and PSC, and non-alcoholic fatty liver disease increased over time despite their small number (Exp[B] = 1.093, P < 0.001). [1] Although there were no significant trends in the Child–Turcotte–Pugh (CTP) score, the number of patients with CTP B decreased by 1.1%/year (P = 0.040), whereas that of patients with CTP C increased by 2.3%/year (P = 0.009). The number of patients with decompensated liver cirrhosis showed no specific trend. [1]
Clinical manifestation	The incidence of variceal bleeding, severe ascites, hepatic encephalopathy, and spontaneous bacterial peritonitis significantly decreased from 12.3% to 7.7%, 7.8% to 4.1%, 1.0% to 0.5%, and 1.9% to 1.1%, respectively (P < 0.05 for all). [1]

Risk factor	Liver cirrhosis is a public health problem. It is usually associated with transmissible infectious diseases such as viral hepatitis, consumption of alcohol, metabolic syndrome, autoimmune processes, storage diseases, toxic substances and medications. [5] The most common etiology of cirrhosis at diagnosis was hepatitis B virus (HBV) (n = 6,972; 44.4%), followed by alcohol (n = 5,252; 33.4%), hepatitis C virus (HCV) (n = 995; 6.3%), and non-alcoholic fatty liver disease (NAFLD) (n = 583; 3.7%). [4] Direct antiviral agents for HCV infection have been in use since 2016 in South Korea, and successful eradication of HCV has been reported in several studies. Therefore, the incidence of virus-related cirrhosis has been reduced due to the effective treatment of viral hepatitis in recent years. [1] A nationwide study assessing the etiology of cirrhosis in Korea between the 1980s and early 1990s reported HBV (56–73%) as the most common etiology, followed by alcohol consumption (7%); however, between the late 1990s and 2000s, the prevalence of HBV-related liver cirrhosis decreased to 41–58%, whereas that of alcohol-related cirrhosis increased to 26–37%. [1]
Diagnosis	Liver cirrhosis is a silent disease, and most patients remain asymptomatic until there is the development of the decompensated phase. Clinical suspicion in most cases is due to an incidental finding of stigmas of chronic liver disease in the physical examination, alteration of the hepatogram in a laboratory analytical control, or when there is decompensation of cirrhosis during a surgical procedure (laparotomy or laparoscopy) indicated by another reason. [5] For diagnosing cirrhosis, computed tomography (CT), ultrasonography, and magnetic resonance imaging (MRI) were used in 59.2%, 30.9%, and 2.9% of patients, respectively. [4]
Treatment	The alcohol group showed an increased treatment rate ($P < 0.001$, Exp[B] = 1.054), but more than half of these patients were still consuming alcohol. Liver function, represented by the CTP, Model for End-Stage Liver Disease (MELD) score, and MELD-Na scores, was poorer in the alcohol group than in the HBV group and showed a deteriorating trend during the 10-year period. Although the rate of abstinence showed improvement from 25.6% in 2008 to 45.0% in 2017, due to poor compliance to treatment and abstinence, the MELD score and proportion of patients with CTP class C increased. While the MELD score in 2008 between patients with and without abstinence showed no difference (13.14 vs. 12.75, respectively, $P = 0.560$), there was a significant gap in the MELD scores between patients with and without abstinence in 2017 (13.05 vs. 14.24, respectively, $P = 0.027$), reflecting the bipolarizing liver function between the two patient groups over time. [1]
Prognosis	Of these, 616 (73.5%) of 837 expired patients with CTP class C died of cirrhosis complications before HCC was diagnosed, which suggests a higher mortality rate than that of CTP class A (47.3%). Finally, our finding that virus (HBV, HCV)-related cirrhosis

	had greater risk of HCC than alcohol or NAFLD cirrhosis suggests that hepatitis B and C viruses themselves have a direct carcinogenic effect. [4]
Genetic information	A study demonstrated that the PNPLA3 and SAMM50 genes are significantly associated with the presence and severity of NAFLD in a Korean population. After adjusting for age, sex and body mass index, rs738409, rs12483959 and rs2281135, located in the PNPLA3 gene, were validated in our population ($p<8.56\times10-8$) in the same linkage disequilibrium block. Additionally, rs2143571, rs3761472, and rs2073080 in the SAMM50 gene showed significant associations with NAFLD ($p<8.56\times10-8$). [6]
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Peptic Ulcer

Incidence	The incidence of peptic ulcer bleeding (PUB) showed no significant change from 2006 to 2008 and decreased from 2008 to 2015, with an annual change of -2.7% ($p<0.05$); however, this change was only significant in men. [1]
Prevalence	Subjects were included from the fifth Korean National Health and Nutrition Examination Survey conducted from 2008–2009. The prevalence of peptic ulcer disease (PUD) was 5.7% and was higher in men (6.8%) than in women (4.9%). [2]
Mortality	Mortality caused by bleeding was higher in patients with Marginal ulcer bleeding than in those with peptic ulcer bleeding (4.7% vs. 0.4%, $p < 0.001$). [3]
Gender	15544 (58%) were men, and 11241 (42%) were women. [4] The incidence of PUB was higher in men than in women between 40 and 70 years old and higher in women than in men older than 80 years. [1]
Age	The proportion of patients with old age (≥ 65 years) was 38.8% (10392/26785). The PUD with the old-age group demonstrated an increasing annual trend (P = 0.01 for trend), whereas the young age group (< 65 years) showed no specific trend overall (P = 0.47 for trend) [4]
Regional distribution	NR
Clinical phenotypes/ Classification	The proportion of gastric ulcers (69.2%) was over twofold that of duodenal ulcers (31.3%). The most prevalent comorbidity was hypertensive disorder, followed by diabetes mellitus. [4] The proportion of drug-related PUD revealed an increasing trend, and it was prominent in the old-age group. The drug-related PUD group included more elderly patients and showed comorbidities and exposure to concomitant ulcerogenic drugs compared with the other groups, consistent with previous reports. [4]
Clinical manifestation	Peptic ulcer disease presents with a wide range of symptoms, from being asymptomatic to experiencing epigastric discomfort, upper abdominal pain, heartburn, bloating, and loss of appetite. In some cases, it may present as serious complications such as bleeding or perforation. In one study, 81% of symptomatic patients with peptic ulcers reported abdominal or epigastric pain, and 46% complained of heartburn or acid reflux symptoms. Additionally, 29% of symptomatic patients experienced bleeding as their initial symptom. [5]

Risk factor	The proportions of exposure to NSAIDs, aspirin, and antiplatelet agents were 19.9%, 15.2%, and 11.4%, respectively. Regarding anticoagulants, warfarin and DOAC were prescribed in 2.2% and 1.1% of total patients, respectively. [4] The risks for idiopathic PUD included older age, smoking, alcohol, comorbid diseases, and higher psychological stress. [4]
Diagnosis	Of the 19601 patients, 41.8% had H. pylori-related, 36.1% had drug-related, and 22.1% had idiopathic PUD. H. pylori-related PUD exhibited a decreasing trend after 2014 (P = 0.01), drug-related PUD demonstrated an increasing trend (P = 0.04), and idiopathic PUD showed an increasing trend in the old-age group (P = 0.01) during 10 years. [4]
Treatment	Peptic ulcer bleeding is a common complication of peptic ulcer disease and the most common cause of upper gastrointestinal bleeding. Despite advances in drug usage and endoscopic modalities, no significant improvement is observed in the mortality rate of bleeding ulcers. Endoscopic hemostasis can be performed as mono or combination therapy using the aforementioned methods. Endoscopic hemostasis is the most important treatment for patients with peptic ulcer bleeding. [6] Early refeeding at 24 hours after endoscopic hemostasis is not noninferior to later refeeding at 48 hours for rebleeding in patients with high-risk peptic ulcer bleeding. Recurrent bleeding rates at 7 days were 7.9% in the 24-hour group and 4.0% in the 48-hour group in the PP analysis; tests for noninferiority did not reach statistical significance (difference: 3.9%, 95% confidence interval [CI]: -2.7 to 10.5, P value for noninferiority = 0.034). The recurrent bleeding rates within 30 days were 10.9% and 4.0% in the 24- and 48-hour groups (difference: 6.9%, 95% CI: -0.5 to 14.2), and the 30-day mortality rates were 5.9% and 14.1%, respectively (difference: -8.2%, 95% CI: -16.5 to 0.1) in the PP analysis. [7]
Prognosis	Among 864 BPU bleeding patients, rebleeding after completion of benign peptic ulcer bleeding occurred in 140 (16.2%). Initial indicators of hypotension (OR 1.878, p = 0.005) and Forrest classes Ia (OR 25.53, p < 0.001), Ib (OR 27.91, p = 0.005), IIa (OR 21.41, p < 0.001), and IIb (OR 23.74, p < 0.001) were independent risk factors of rebleeding compared to Forrest class III, and being inpatients (OR 1.75, p = 0.01). Compared to the outpatients, the inpatients showed significantly higher rebleeding rates (25.6% vs 13.8%, p < 0.001), predictive bleeding scores, red blood transfusion counts, proportion of Forrest classes Ia, Ib, and IIb (p < 0.001), and overall mortality rates (68.8% vs 34.0%, p < 0.001). [8] The overall annual hospitalization rate was 34.98 per 100,000 person-years. [1]
Genetic information	In this study, the correlation between SLC25A26 and gastric diseases was analyzed. Polymorphisms in SLC25A26 were analyzed in 1,369 domestic gastric disease patients and 7,471 healthy controls. As a result, 11 single nucleotide polymorphisms (SNPs) (in

	the genotype) and 13 SNPs (in the imputation) showed statistical significance ($P < 0.05$), and high relative risk of gastric diseases. Among them, the rs13874 allele of SLC25A26 showed a highly significant association with gastric diseases. In the genotype-based mRNA expression analysis, the minor allele (C) group showed increased mRNA expression and this could increase oxidative stress. [9]
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Ulcerative Colitis

Incidence	Incidence rate (crohn's disease, 2.7–3.8 per 100,000; ulcerative colitis, 5.4–8.3 per 100,000/over 2010–2019). [1]
Prevalence	In 2019, there were approximately 37,000 patients with ulcerative colitis (UC), representing more than a twofold increase over the past 10 years. And the prevalence of ulcerative colitis was 65.7 per 100,000 population. [2]
Mortality	Survival of patients with Crohn's disease (CD) was lower than that of the general population, whereas patients with ulcerative colitis had similar survival. [3]
Gender	The male-to-female ratio was 1.3:1. [4]
Age	The prevalence of extensive colitis at diagnosis (45.8% vs. 22.3%) and the cumulative risk of colectomy (8.9% vs. 1.8%) were significantly higher in pediatric UC than in adult UC cases. [1]
Regional distribution	There was a tendency for higher prevalence rates in major cities and the capital region. The regional prevalence of ulcerative colitis per 100,000 population in 2019 is as follows:Seoul (80.7), Sejong (80.8), Daejeon (75.9), Gyeonggi (71.8), Daegu (70.7), Incheon (61.4), Chungbuk (64.3), Chungnam (64.3), Ulsan (60.6), Gyeongbuk (58.1), Gangwon (57.6), Jeonbuk (54.5), Jeju (52.1), Busan (51.7), Gwangju (46.7), Gyeongnam (46.5), Jeonnam (42.5). [2]
Clinical phenotypes/ Classification	Disease extent of E1 comprised 12.2% (25/205), E2 24.9% (51/205), E3 11.2% (23/205), and E4 51.7% (106/205) of the patients. S1 comprised 13.7% (28/205) of the patients. The proportion of patients with a disease severity of S1 was significantly higher in patients with E4 compared to the other groups (E1: 0% vs. E2: 2% vs. E3: 0% vs. E4: 24.5%, $P < 0.001$). Significant differences between disease extent groups were also observed in Pediatric Ulcerative Colitis Activity Index (median 25 vs. 35 vs. 40 vs. 45, respectively, $P < 0.001$), hemoglobin (median 13.5 vs. 13.2 vs. 11.6 vs. 11.4 g/dL, respectively, $P < 0.001$), platelet count (median 301 vs. 324 vs. 372 vs. 377 × 103/μL, respectively, $P = 0.001$), C-reactive protein (median 0.05 vs. 0.10 vs. 0.17 vs. 0.38 mg/dL, respectively, $P < 0.001$), and Ulcerative Colitis Endoscopic Index of Severity (median 4 vs. 4 vs. 4 vs. 5, respectively, $P = 0.006$). [5]
Clinical manifestation	The frequency of extraintestinal symptoms in Korean patients with inflammatory bowel disease (IBD) is not known. However, in a recent survey using the health insurance database, the prevalence of 17 extraintestinal symptoms (of the eyes, skin, hepatobiliary pancreas, and musculoskeletal system) was higher in patients with IBD than in the general population. [1]

	Anti-Saccharomyces cerevisiae antibody was positive in 44.5% and 16.2% of CD and UC patients, respectively (p<0.001), and antineutrophil cytoplasmic antibody was positive in 15.0% and 58.8% of CD and UC patients, respectively (p<0.001). Terminal ileal involvement was prominent in CD, while rectal involvement was more prominent in UC. [5]
Risk factor	In a recent report, the relative risk of developing IBD among first-degree relatives of patients with IBD was 13.8 (compared to the general population); the figure was similar to that in Western patients. In particular, a significant increase in the number of familial cases, from 1.9% in 2002 to 4.9% in 2015, was observed in one cohort study in Korea. [1]
Diagnosis	Korea has seen a steep increase in the number of patients with IBD during the last three decades because of recent industrialization, as have other Asian countries. However, Korean patients exhibit several distinct characteristics compared to other Asian patients. Adoption of Western guidelines is difficult, because IBD treatment in Korea requires special clinical consideration of regional differences in infectious diseases. [1] With the increasing use of anti-tumor necrosis factor (anti-TNF) therapy across Asia, the associated risk of active tuberculosis (TB) poses a significant public health concern. In response, the Asian Organization for Crohn's and Colitis (AOCC) and the Asia Pacific Association of Gastroenterology (APAGE) have developed consensus statements regarding the assessment of TB risk, detection and prevention of latent TB infection (LTBI), and the management of active TB in patients with inflammatory bowel disease (IBD) receiving anti-TNF treatment. [6] *Given the epidemiological characteristics of tuberculosis (TB) in Korea, differential diagnosis between inflammatory bowel disease (IBD) and TB is considered an important aspect of the diagnostic and therapeutic process.
Treatment	The most commonly used medication among patients with ulcerative colitis is aminosalicylic acid. The use of steroids in patients with ulcerative colitis has been decreasing. Although the proportion of patients receiving treatment with immunomodulators and biologics is lower than that of Crohn's disease, it has been increasing. According to 2018 data, the number and percentage of patients who were prescribed each medication at least once during the year were as follows: Aminosalicylic acid: 32,274 patients (93%), Steroids: 6,280 patients (18%), Immunomodulators: 5,464 patients (16%), Biologics: 2,717 patients (8%). [2] The serological prevalence of cytomegalovirus (CMV) is generally high in Asia. The risk factors for CMV colitis in patients with UC are high-dose steroid use and severe uncontrolled disease. Moreover, CMV is a significant predictor of non-response to infliximab. [1]

Prognosis	During follow-up, 28.7% of 778 patients with proctitis or left-sided colitis at diagnosis experienced proximal disease extension. A total of 28 patients (2.8%) underwent colectomy, demonstrating cumulative risks of colectomy at 1, 5, 10, 20 and 30 years after diagnosis of 1.0%, 1.9%, 2.2%, 5.1% and 6.4%, respectively. [7]
Genetic information	Mutations in NOD2 (a gene involved in bacterial pattern recognition), ATG16L1 (a gene associated with intracellular autophagy), and cytokine-encoding genes (cytokines regulate the innate and adaptive immune responses) are considered to be major genetic variants. However, the mutations may exert only minor impacts: CD-related mutations only 8%–13% and UC-related mutations only 4%–7%. Differences between East and West have also been reported. NOD2 and IL23R are associated with the risk of CD in Europeans, but rarely in East Asians. In contrast, TNFSF15 exhibits a much stronger association in East Asians. [1]
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Genitourinary

Benign Prostate Hyperplasia

Incidence	The number of patients increased from 20,114 to 27,390 from 2012 to 2016. [1]
Prevalence	The present study analyzed data of patients diagnosed with benign prostate hyperplasia (BPH) who underwent medical treatment or surgery in 3% of the national patient sample of the Health Insurance and Review Assessment database each year between 2012 and 2018. [2]
Mortality	NR
Gender	NA
Age	In 2016, there were 12,050 patients (44.0%) aged 60–69 years, 11,176 patients (40.8%) aged 70–79 years, and 4,164 patients (15.2%) aged 80 years or older. The total number of patients was 27,390 (100%). [1]
Regional distribution	Regional distribution of BPH population showed a similar pattern every year. [1]
Clinical phenotypes/ Classification	Severity of BPH in participants was classified into moderate (54%), severe (31.5%), and mild (14.5%). [3]
Clinical manifestation	The mean health-related quality of life (HRQoL) score was 3.78 points. The scores in each section were 4.18 points for ‘disability of daily living activity’, 3.95 points for ‘discomfort due to BPH’, 3.69 points for ‘psychological state’, 3.65 points for ‘anxiety’ and 2.93 points for ‘sex life’. Perceived health state presented positive correlation with HRQoL and negative correlation with BPH symptoms. The BPH symptoms showed negative correlation with HRQoL. The level of BPH symptoms, perceived health status and prostate volume were revealed to influence the HRQoL in the order of the degree of influence. [3]
Risk factor	As a result of the analysis, in the 40s and 50s, the effect of BMI on BPH was not statistically significant. However, in the 60s, 70s, and 80s or over, the risk of BPH incidence was 1.41 times, 1.22 times, and 3.01 times, respectively, in obese people compared to underweight. In addition, waist circumference had a statistically significant effect on BPH in all age groups except for the 40s. As a result of analysis of hypertension, diabetes, and hyperlipidemia, the risk of BPH was higher in the group compared to the group without a history, but as a result of analyzing by age group, statistically significant results were found only in the 50s and 60s. [4]
Diagnosis	The DRE is one of the essential tests in the initial evaluation of BPH patients. In cases of palpable nodules by DRE, prostate biopsy is warranted. In the treatment of BPH, the

	precise measurement of prostate size is a quite important issue, because prostate size itself can affect the whole course of BPH treatment. Using prostate ultrasonography, physicians can estimate the degree of intravesical prostate protrusion (IPP), which is categorized as mild (less than 5 mm), moderate (from 5 mm to less than 10 mm), and severe (more than 10 mm). This degree of IPP is known to be related to the degree of BOO(Bladder Outlet Obstruction). [5]
Treatment	While watchful waiting and medical management using a wide array of pharmaceuticals can be effective, surgery has been one of the most definite solutions for those highly affected by this condition. Transurethral resection of the prostate (TURP) is the gold standard surgical procedure, but other alternatives using laser (HoLEP and ThuLEP) and robotic water jets (Aquablation) are emerging treatments aimed at reducing postoperative morbidity. [6] Treatment with medications was the most commonly used treatment option in >90% cases. [1] One study aimed to compare and evaluate the safety and efficacy of prostatic artery embolization (PAE) and transurethral resection of the prostate (TURP) for the treatment of benign prostatic hyperplasia (BPH). In terms of safety, there were no significant differences in the inci- dence of major complications such as bleeding, infection, and urinary retention between the two procedures. PAE tended to have a lower incidence of sexual dysfunction compared to TURP. Fluo- roscopy-related radiation exposure and duration were reported to be within acceptable ranges in some studies, and no radiation-related adverse events were identified. Regarding efficacy, PAE showed com- parable improvements in International Prostate Symptom Score and quality of life to TURP, but demonstrated inferior outcomes in urodynamic parameters, prostate volume reduction, and surgical success rate. However, patient satisfaction was significantly higher in the PAE group ($p<0.001$).[7]
Prognosis	In Korea, a large-scale multicenter study showed that the prostate volume and serum PSA level had an age-dependent log-linear relationship, and PSA had good predictive value for various prostate volume thresholds (30, 40, and 50 mL). Many studies have reported that baseline PSA levels are positively related to overall BPH progression and the incidence rate of invasive therapy (e.g., surgery). [5] Owing to a lack of evidence about follow-up strategies, follow-up periods and follow-up assessments are dependent on the empirical data of physicians or preference according to the treatment modalities. Patients on watchful waiting or behavioral modification should be reviewed after 6 months and then have periodic follow-up visits annually to evaluate symptom progression or the need for medical or surgical treatment. Patients with alpha-blockers should be reviewed after 2 to 6 weeks to evaluate the adverse effects of alpha-blockers and treatment response. Patients should then be monitored every 6 to 12 months. [5]

Genetic information	The rs11568943 and rs11569017 SNPs in the EGF gene showed significant associations with prostate volume (rs11568943: P=0.038 in the log-additive model, P=0.024 in the allele distribution; rs11569017, P=0.031 in the dominant model, P=0.028 in the log-additive model, P=0.020 in the allele distribution). Additionally, the rs3756261, rs11568943, and rs11569017 SNPs of the EGF gene and the rs2293347 SNP of the EGFR gene were associated with PSA levels (P<0.05 in each model, respectively). [8]
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Chronic Kidney Disease

Incidence	In 2021, the Republic of Korea had 277 thousand patients with chronic kidney disease (CKD), more than doubling over 10 years. [1]
Prevalence	Among the included adults (n = 80,010), the overall national prevalence of CKD was 6.2%. The trend slope gradually increased from 2007 to 2019. [2]
Mortality	During the follow-up period, there were 183 deaths (11.7 cases per 1,000 person-years). Compared to the general population, CKD patients showed a 2.25-fold higher mortality rate (95% CI, 1.95–2.60). The risk of death was significantly elevated across all CKD stages relative to the general population. [3]
Gender	CKD accounted for 6.2% (unweighted n = 6105) adults of the total subjects, with 51.8% being females. [2]
Age	A total of 50.0% (95% CI 48.3–51.6) of CKD group was 65 years or older. [2]
Regional distribution	The proportion of subjects with CKD in rural areas was higher than in those without CKD. [2]
Clinical phenotypes/ Classification	Among the underlying causes of chronic kidney disease (CKD), glomerulonephritis was the most common, accounting for 36.2%, followed by diabetic nephropathy (23.1%), hypertensive nephrosclerosis (18.3%), polycystic kidney disease (16.3%), and others (6.1%). Based on estimated glomerular filtration rate (eGFR), the distribution of CKD stages was as follows: stage 1 (≥90 mL/min/1.73 m^2), 11.8%; stage 2 (60–89 mL/min/1.73 m^2), 18.7%; stage 3a (45–59 mL/min/1.73 m^2), 18.0%; stage 3b (30–44 mL/min/1.73 m^2), 21.6%; stage 4 (15–29 mL/min/1.73 m^2), 23.3%; and stage 5 (<15 mL/min/1.73 m^2), 6.5%. [3]
Clinical manifestation	Current smokers comprised 15.7% (n = 349) and former smokers 30.4% (n = 677). Coronary artery disease was prevalent in 5.3% of the total subjects. Peripheral artery disease and cerebrovascular disease were prevalent in 3.5% and 6.0%, respectively. Seven hundred fifty-five subjects (33.7%) were diabetic (either type 1 or type 2 diabetes). Mean systolic and diastolic BPs were 127.8 ± 16.2 mmHg and 77.0 ± 11.1 mmHg, respectively, 96.1% of the patients either had a history of hypertension or was taking antihypertensive drugs. Mean body mass index (BMI) was 24.6 ± 3.4 kg/m2 with 68% of total subjects being in the categories of overweight or obesity. [4]
Risk factor	The lower educational attainment group and the low quartile of household income group with CKD showed a higher proportion than those without CKD. [2]

	Compared to the non-CKD group, patients with CKD exhibited characteristics of older age (61.5%), higher proportion of males (51.9%), lower educational attainment (49.7%), and lower household income levels (44.9%). A higher proportion of patients with CKD exhibited uncontrolled comorbidities, such as DM (26.6%) and hypertension (31.4%), than the non-CKD group. Additionally, a significant majority of patients with CKD engaged in uncontrolled drinking (92.9%). [5]
Diagnosis	CURRENT CHRONIC KIDNEY DISEASE (CKD) NOMENCLATURE USED BY KDIGO : CKD is defined as abnormalities of kidney structure or function, present for a minimum of 3 months, with implications for health. CKD is classified based on Cause, Glomerular filtration rate (GFR) category (G1–G5), and Albuminuria category (A1–A3), abbreviated as CGA. [6]
Treatment	During the follow-up period, 689 cases (30.8%) underwent dialysis or kidney transplantation, with an incidence rate of 53.1 cases per 1,000 person-years. A total of 632 cases (28.2%) experienced a decline in kidney function to less than half of the baseline level, with an incidence rate of 47.4 cases per 1,000 person-years. The overall cohort showed a mean decline in estimated glomerular filtration rate (eGFR) of 2.62 ± 0.07 mL/min/1.73 m^2 per year. When analyzed by underlying cause of CKD, the annual rate of eGFR decline was 3.20 ± 0.15 mL/min/1.73 m^2 in the diabetic nephropathy group, 2.33 ± 0.10 mL/min/1.73 m^2 in the glomerulonephritis group, and 3.77 ± 0.15 mL/min/1.73 m^2 in the polycystic kidney disease group. [3]
Prognosis	As of March 31, 2022, the overall study population showed a decline in estimated glomerular filtration rate (eGFR) at a rate of 2.62 ± 0.07 mL/min/1.73 m^2/year. During the follow-up period, there were 221 cardiovascular (CV) events (15.2 cases per 1,000 person-years), and 689 cases of dialysis initiation or kidney transplantation (53.1 cases per 1,000 person-years). The incidence of all-cause mortality and CV events was highest in the diabetic nephropathy group and tended to increase with advancing stages of chronic kidney disease (CKD). Compared to the general population, CKD patients showed a 1.42-fold higher incidence of CV events (95% CI, 1.00–2.02). These findings indicate that while the incidence of kidney-related events was markedly higher than in Western CKD cohorts, the rates of mortality and CV events were lower. These results underscore the importance of considering such epidemiologic trends in establishing future CKD management policies and treatment strategies in Korea. [3]
Genetic information	One study identified three novel SNPs [rs3128852 ($P = 8.21 \times 10-25$), rs117744700 ($P = 8.28 \times 10-10$), and rs28366355 ($P = 2.04 \times 10-8$)] associated with diabetic kidney disease. Moreover, the fine-mapping study validated the causal relationship between rs3128852 and diabetic kidney disease. rs3128852 is an eQTL for TRIM27 in whole blood tissues and

	HLA-A in adipose-subcutaneous tissues. rs28366355 is an eQTL for HLA-group genes present in most tissues. [7]
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Diabetic Nephropathy

Incidence	The incidence rate of diabetes-related End stage kidney disease (ESKD) has remained constant (201.5–235.1 per 100,000 person-years) since 2008, whereas the prevalence rate has been steadily increasing. [1]
Prevalence	The prevalence of Diabetic Kidney Disease (DKD) was 25.4% (albuminuria, 22.0%; low eGFR, 6.73%) in patients with diabetes mellitus aged ≥30 years. [1]
Mortality	The risk of cardiovascular disease mortality was 2.05-fold higher in stage 3 patients with DKD, 4.64-fold higher in stage 4 or higher patients, and 7.27-fold higher in patients with ESKD than in those with normal kidney function. The corresponding risks of all-cause death were 1.50-, 3.90-, and 7.40-fold higher, respectively. [1]
Gender	Of 180 diabetes patients with albuminuria, 61.2% was male and 38.8% was female. [2]
Age	In the study population, the prevalence of diabetic kidney disease (DKD) was 9.6% in individuals aged 30–39 years, 18.3% in those aged 40–49 years, 21.7% in the 50–59 age group, 22.8% in the 60–69 age group, and 37.3% in individuals aged 70 years and older. [1]
Regional distribution	Although regional data on diabetic nephropathy are not publicly available, the nationwide prevalence of diabetes by region is as follows: Seoul 6.6%, Busan 9.3%, Daegu 6.6%, Incheon 7.0%, Gwangju 9.0%, Daejeon 6.2%, Ulsan 8.5%, Sejong 4.5%, Gyeonggi 6.7%, Gangwon 9.6%, Chungbuk 14.0%, Chungnam 4.8%, Jeonbuk 8.9%, Jeonnam 15.1%, Gyeongbuk 6.8%, Gyeongnam 8.9%, Jeju 7.6%. [3]
Clinical phenotypes/ Classification	Albuminuria and low estimated glomerular filtration rate (eGFR, CKD stage 3 or higher) were reported in 22.0% (estimated number=1,133,716) and 6.7% (estimated number=362,249) of patients with DM, respectively. [1]
Clinical manifestation	Diabetic nephropathy is typically characterized by albuminuria and reduced kidney function. Albuminuria is classified into microalbuminuria and macroalbuminuria based on the amount of albumin excretion. Microalbuminuria refers to a urinary albumin excretion of 20–200 μg/min (30–300 mg/day) or a spot urine albumin-to-creatinine ratio (ACR) of 30–300 μg/mg, while macroalbuminuria exceeds these levels. Decline in kidney function is assessed by the estimated glomerular filtration rate (eGFR), which is calculated from serum creatinine levels. Kidney function is staged into five categories based on the eGFR. [4]
Risk factor	The risk factors for microalbuminuria among patients with type 2 diabetes were analyzed using logistic regression. As a result, the odds ratios were 1.036 (95%

	confidence interval (CI) = 1.019–1.053, p < 0.001) for systolic blood pressure, 0.966 (95% CI = 0.941–0.989, p = 0.007) for high-density lipoprotein cholesterol level, 1.008 (95% CI = 1.002–1.014, p = 0.015) for fasting blood sugar level, and 0.855 (95% CI = 0.729–0.998, p = 0.043) for hemoglobin level. [5]
Diagnosis	The diagnosis of DKD in clinical practice generally consider albuminuria or low estimated glomerular filtration rate, regardless of the typical histopathological changes observed in diabetic nephropathy [1]
Treatment	In 2019. Approximately 70% of DKD patients were treated with renin-angiotensin system blockers. [1] SGLT2 inhibitors have emerged as a key treatment for preventing the progression of chronic kidney disease in patients with albuminuria, regardless of the presence of diabetes. Their excellent renal and cardiovascular protective effects have been demonstrated in multiple large-scale studies, leading to a marked increase in prescription rates in recent years. [6] Prescription rate of SGLT2 inhibitors with reduced eGFR increased steadily, reaching 5.94% in 2019. [1] AST-120 (KREMEZIN®) consists of oral, spherical carbon particles that adsorb uremic toxins and their precursors within the gastrointestinal tract, allowing them to be excreted in the feces. AST-120 was approved in Japan in 1991 followed by Korea (2004), Taiwan (2007) and the Philippines (2010) for treating uremic symptoms and prolonging the time to initiation of dialysis in patients with progressive CKD. [7] * The drug is characterized by its approval limited to Japan, South Korea, Taiwan, and the Philippines, while remaining unapproved in the United States and Europe.
Prognosis	Patients with DKD had a higher rate of comorbidities, including hypertension, dyslipidemia, and central obesity; however, their control rates were lower than those without DKD. [1]
Genetic information	The AG + AA genotype showed a significantly higher risk of DN compared with the GG genotype in patients with a type 2 DM duration less than 10 years (12.4% vs. 4.2%; P < 0.001). [8] The study identified three novel SNPs [rs3128852 (P = 8.21×10-25), rs117744700 (P = 8.28×10-10), and rs28366355 (P = 2.04×10-8)] associated with DKD. Moreover, the fine-mapping study validated the causal relationship between rs3128852 and DKD. rs3128852 is an eQTL for TRIM27 in whole blood tissues and HLA-A in adipose-subcutaneous tissues. rs28366355 is an eQTL for HLA-group genes present in most tissues. [9]
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Erectile Dysfunction

Incidence	NR
Prevalence	The prevalence of erectile dysfunction (ED) reported in epidemiological data vary depending on patient age group and definition used. In the United States, it has been reported that ED affects 52% of men aged 40 to 70 years and more than 70% in men older than 70 years. [1]
Mortality	NR
Gender	Not applicable
Age	The mean age was 60.17±6.29. [2] In China, The occurrence rates of ED in age groups younger than 30, 30 to 39, 40 to 49, 50 to 59, 60 to 69, and at least 70 years were 20.86%, 25.30%, 40.48%, 60.12%, 79.10%, and 93.72%. [3]
Regional distribution	A U.S.-based study highlights how healthcare access and demographics influence ED search trends. States with older, less educated populations showed higher interest, while wealthier areas with more urologists had no significant correlation. These findings can guide targeted interventions to improve sexual care in underserved regions. [4]
Clinical phenotypes/ Classification	Out of 49 patients, mild disease (n=6), mild to moderate disease (n=12), moderate disease (n=10), and severe disease (n=21). [2]
Clinical manifestation	The most representative type of sexual dysfunction is erectile dysfunction, which refers to difficulty achieving an erection or the inability to maintain an erection sufficient for ejaculation. Additionally, late-onset hypogonadism, commonly observed with aging, is characterized by decreased serum testosterone levels, leading to reduced sexual desire and impaired erectile function. Ejaculatory disorders may include a decreased volume of semen during ejaculation, diminished sensation of ejaculation, or premature ejaculation, in which ejaculation occurs excessively early. [5]
Risk factor	After three months of continuous positive airway pressure (CPAP) therapy, the patients demonstrated a significant improvement in ED as measured on the the International Index of Erectile Function (IIEF). However, the study found no significant correlation between the duration of CPAP use and the improvement in IIEF score. [6] Causes of sexual dysfunction include chronic diseases, such as diabetes, hypertension, dyslipidemia, and obesity. In addition, some medications, surgical procedures, and traumas can cause sexual dysfunction. However, aging is the most important cause of male sexual dysfunction. [5]

Diagnosis	The diagnosis of erectile dysfunction is fundamentally based on medical history, physical examination, blood tests, and specialized diagnostic procedures. A detailed assessment of the patient's medical and psychosocial sexual history, along with a physical examination, is the first step in the diagnostic process. Among several questionnaires, the most widely used are the International Index of Erectile Function, consisting of 15 items, and the IIEF-5, a shortened version comprising five questions specifically related to erectile function. While the full IIEF-15 is mainly used for research purposes due to its length, the simpler IIEF-5 is more suitable for use in routine clinical practice. [6]
Treatment	There are various non-invasive and invasive treatments currently available to improve ED. The American Urological Association guidelines acknowledge that any treatment option may be used as a first-line therapy; however, phosphodiesterase type 5 inhibitors (PDE5-Is) are the most commonly suggested and used first-line treatment option. Invasive treatment encompasses intracavernosal injection (ICI) with vaso-active substances, intraurethral suppository of prostaglandin E1 (PGE1, alprostadil), vacuum-assisted erectile device (VED), and penile prostheses. [1]
Prognosis	Overall, subjects' erectile function slightly improved in the first year and then gradually worsened over time. Using growth mixture modeling, we identified four distinct latent groups, which we labeled as follows: "consistently maintained normal erectile function" (9.7%), "rapidly worsened and then rapidly improved" (9.2%), "gradually improved in the early stage and then gradually worsened" (36.8%), and "consistently maintained poor erectile function" (44.3%). Progression of erectile function was significantly associated with age, economic status, and self-rated health status. [7]
Genetic information	Alteration of TRPC4 channel is one pathophysiology of ED. [8]
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IgA Nephropathy

Incidence	Comparison of the incidence rates between 1987-1991 and 2002-2006 revealed an increase in immunoglobulin A nephropathy (IgAN) from 25.6 to 34.5%. [1]
Prevalence	In South Korea, mean prevalence of IgAN is estimated at 38% (range: 26%-62%) among patients with renal biopsies and 51.6% (range: 51.3%-51.9%) among primary GN patients. [2]
Mortality	Of the 1154 patients (768 males, 386 females) with a median follow-up of 5 years, 5.6% (n = 65) progressed to stage 3-5 chronic kidney disease (CKD). The 10- and 20-year CKD-free survival rates were 91.2% and 75.6%, respectively. [3]
Gender	Among the participants, 925 (44.8%), 1,608 (57.8%), and 565 (49.3%) were male in the respective groups. [4]
Age	The mean age of the patients was 41.3 years (±14.2). [4]
Regional distribution	NR
Clinical phenotypes/ Classification	At renal biopsy, mean estimated glomerular filtration rate (eGFR) was 95.73 mL/min/1.73 m2; 7% of these patients (n = 81) had an eGFR of <60 mL/min/1.73 m2. Heavy proteinuria was present in 37.2% of the patients (n = 430). Renal pathology included mesangial proliferation in 50%, endocapillary hypercellularity in 8%, and crescents in 27% of the patients for whom pathology reports were available. [3]
Clinical manifestation	The hallmark finding of IgAN is gross hematuria in association with an upper respiratory infection, as was first described by Berger in 1968. However, more than half of the patients diagnosed with IgAN present with no subjective symptoms; the disease is frequently detected during the evaluation of asymptomatic urinary abnormalities, decreased renal function, or hypertension. [3] A total of 120 patients (10.4%) reported a family history of glomerulonephritis or end-stage renal failure (ESRD). Initial presenting symptoms included gross hematuria (583 patients, or 50.5%), nephrotic syndrome (89 patients, or 7.8%), and asymptomatic urinary abnormalities (482 patients, or 41.8%). Among those presented with urinary abnormalities, 126 patients (10.9%) presented with isolated hematuria, 57 patients

	(4.9%) presented with isolated proteinuria, and 299 patients (25.9%) presented with combined hematuria and proteinuria. [3]
Risk factor	A total of 120 patients (10.4%) reported a family history of glomerulonephritis or ESRD. [3]
Diagnosis	Among patients with asymptomatic urinary abnormalities (n = 482), 421 patients (87.3%) were diagnosed with urinary abnormalities via the nation-wide school urine screening. [3]
Treatment	The current therapeutic strategies for IgAN mainly focus on reducing proteinuria. All patients are conservatively treated with lifestyle modifications, such as a low-salt and low-protein diet, smoking cessation, and blood pressure control. Renin-angiotensinogen system blockades (RASB) are recommended if urinary protein excretion exceeds 0.5 g per day. [4] Among adult IgAN patients, angiotensin-converting enzyme inhibitors/ angiotensin II receptor blockers (ACEI/ARBs) were the most common treatment ranging from 27.7%-90% in Mainland China and South Korea, followed by immunosuppressants (1.6%-85.5%) and steroids (10%-36.1%). [2] Of the 1154 patients enrolled in the study, 207 patients (17.9%) received no pharmacologic treatments, 368 patients (31.9%) were treated with renin–angiotensin system blockers only, and 579 (50.2%) were treated with additional immunosuppressive drugs. Over the course of the study, 839 (72.7%) patients achieved remission of proteinuria; among these, proteinuria recurred in 239 patients (28.5%). [3]
Prognosis	Median duration from initial visit to final follow-up was 60 months (the interquartile range 28–100.8 months), and the mean age at the final evaluation was 16.7 ± 5.6 years. At the final follow-up visit, 747 of patients (64.7%) had no residual abnormality, 216 patients (18.7%) had minor abnormalities, 126 patients (10.9%) were diagnosed with persistent nephropathy, 36 patients (3.1%) had renal insufficiency, and 29 patients (2.5%) were diagnosed with ESRD; 191 patients (16.6%, male-to-female ratio of 1.1) had signs suggesting an unfavorable outcome and 65 patients (5.6%, male-to-female ratio of 1.6) were diagnosed with CKD (stage 3–5). [3]
Genetic information	Two SNPs (rs10172700 in LOC105373592 and rs2296136 in ANKRD16) were selected for further association analysis in the next stage. In the replication cohort, rs2296136 in ANKRD16 was significantly associated with IgAN (odds ratio [OR] = 1.40, 95% confidence interval [CI] 0.99-1.98, p = 0.05 in log-additive model, OR = 1.55, 95% CI = 1.06--2.27, p = 0.02 in dominant model, and OR = 0.70, 95% CI = 0.17--2.84, p = 0.62 in recessive model). rs2296136 in ANKRD16 also showed a significant association with IgAN in the entire study population combining GWAS and replication study (p = 0.0045 in log-additive model, p = 0.0027 in dominant model, and p = 0.76 in recessive model). [5]

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Urinary Incontinence

Incidence	NR
Prevalence	Of the participants, 21.8% (4781/21,973) reported experiencing urgency urinary incontinence (UUI) over the year. [1] stress urinary incontinence (SUI) is a common condition in women ≥40 years of age, and in this analysis set of 4208 women, the overall prevalence was 23.3%. A similar overall prevalence of SUI of 25% was observed in a small study of women studying nursing.13 In women aged 50–59 years of age in the current analysis, the prevalence was highest at 30%, and SUI remained at high prevalence at 26–27% in women over 60 years old. [2]
Mortality	Against the reference control group, the adjusted HR stood at 1.141 (95% CI = 1.014–1.285) for those experiencing UUI less than once a month, 1.211 (95% CI = 1.070–1.372) for more than once a month, 1.304 (95% CI = 1.107–1.535) for less than once a week, and 1.560 (95% CI = 1.295–1.879) for more than once a week. [1]
Gender	Participants with UUI were found to be predominantly female (66%). [1]
Age	Participants with UUI were found to be generally older (53.5% were 60 years or older). [1]
Regional distribution	The overall prevalence of lower urinary tract symptoms (LUTS) according to ICS criteria was 61.2%. Prevalence in South Korea (68.2%) was higher than in China (59.0%) or Taiwan (58.5%) (p = 0.001). [2]
Clinical phenotypes/ Classification	Urinary incontinence is classified according to the circumstances under which it occurs. The majority of cases are classified as stress urinary incontinence (SUI), urgency urinary incontinence (UUI), or mixed urinary incontinence (MUI). [4] Based on the responses, we categorized UUI severity into five levels: none (control), less than once per month (< 1/month), more than once per month (≥ 1/month), less than once per week (< 1/week), and more than once per week (≥ 1/week). 1736 reported UUI less than once per month, 1247 more than once per month, 555 less than once per week, and 348 more than once per week. [1]
Clinical manifestation	In a third study of 275 women with SUI, nearly every third woman (28.7%) felt great mental discomfort related to the disease symptoms, 31.7% a considerable discomfort and 33.1% a moderate discomfort. [2]
Risk factor	Participants with UUI were found to be had a higher BMI (48% had a BMI of 30 kg/m2 or higher), lower PIR (22.4% had a PIR of less than 1.0), and a more prevalent history of stroke (6.8%); they were less likely to consume alcohol (67.8%) but more likely to smoke (21%) compared to those without UUI. [1]

Diagnosis	The most important component in the diagnosis of urinary incontinence is taking a thorough medical history. An initial assessment of various lower urinary tract symptoms that may accompany incontinence should also be performed. In addition to a detailed interview regarding urinary incontinence and LUTS, the medical history should specifically include: – the presence of neurological conditions (such as stroke, Parkinson's disease, multiple sclerosis, or spinal cord injury), – a history of genitourinary disorders, – any previous surgeries involving the urinary tract, pelvis, or abdominal cavity, – prior radiation therapy, – bowel-related symptoms such as constipation, – glaucoma, and – a list of current medications. [4]
Treatment	For stress urinary incontinence, surgical intervention is generally more effective than conservative treatments such as Kegel exercises and biofeedback. Urgency urinary incontinence is closely associated with overactive bladder (OAB), and its treatment follows the principles of OAB management. This typically involves medication based on behavioral therapy. In cases of refractory OAB that do not respond to pharmacologic treatment, surgical options may be considered. Among antimuscarinic agents and β3-adrenergic receptor agonists used to treat OAB, there is no clear evidence indicating the superiority of one over the other. Therefore, the choice of medication should be individualized, taking into account the potential side effects of each drug and the specific needs of the patient. [4] *Treatment options for stress urinary incontinence also include pharmacologic therapy. However, duloxetine—the representative medication for SUI—has not yet been approved for this indication in Korea. Therefore, the treatment of SUI in Korea is largely divided into two main categories: conservative therapy and surgical treatment. [4]
Prognosis	The purpose of the study was to examine the long-term effects of a urinary incontinence (UI) self-management program for older women on the severity, knowledge, and attitudes regarding UI. A significant improvement in UI severity was found in the intervention group, who showed a gradually decreasing ICIQ-SF score from at pretest to 5 weeks and 12 months, while it increased over the 12-month period in the control group (main effect of group, $F = 17.31$, $P < .001$; main effect of time, $F = 8.45$, $P = .001$; interaction effect, $F = 22.54$, $P < .001$). [5]
Genetic information	Although studies investigating urinary incontinence and genetic information in Korea and other Asian countries are still limited, the following findings were reported in a case-control study conducted in a Romanian population: The regression analysis revealed CC genotype (OR = 3.06, 95% CI: 1.11–8.43; p = 0.030) and allele C (OR = 2.53, 95% CI: 1.16–

	5.53; p = 0.020) were risk factors for development of Urge UI. The study concluded that HTR2A T102C gene polymorphism affected the development of Urge UI. [6]
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Hematology

Acute Lymphoblastic Leukemia

Incidence	The incidence of acute lymphoblastic leukemia (ALL) is very low with a crude annual incidence of about 1.1/100,000 in the entire population (0.2% of all cancers) and 0.8/100,000 in the adult Korean population. [1]
Prevalence	The prevalence of C910 (lymphoblastic leukemia) was 5.95 in 2005 and increased annually, reaching 8.94 in 2015. [2]
Mortality	Overall, 103 and 106 patients were classified as having standard-risk and high-risk, respectively. The 5-year overall survival and event-free survival were 92.5% and 84.3%, respectively. [3]
Gender	Male subjects were more common (2885, 58.4%) in all age groups. [4]
Age	In 2020, the incidence of acute lymphoblastic leukemia in Korea showed an age-specific pattern. Among individuals under 20 years of age, there were 232 reported cases, corresponding to an incidence rate of 2.65 per 100,000 population. In contrast, among adults aged 20 years and older, 342 cases were reported, with an incidence rate of 0.83 per 100,000 population. [1] Among 4861 participants diagnosed with acute lymphocytic leukaemia/lymphoblastic lymphoma, 3344 (68.8%) were aged <20 years. The mean age of all participants was 14.9 years; the pediatric group, 8.3 years, and the young adult group, 29.3 years. [4]
Regional distribution	NR
Clinical phenotypes/ Classification	ALL is now divided into several subtypes, including Ph-positive ALL, Ph-like ALL, Ph-negative B-ALL, T-ALL with standard-risk or adverse-risk cytogenetics, and ETP-ALL. A study suggests that low hypodiploidy, a monosomal karyotype, MLL rearrangement with t(4;11), complex karyotype with three or more aberrations, and chromosome 7 abnormalities (−7, del 7) are adverse-risk karyotypes. [1] The Catholic Hematology Hospital in Korea reported that Ph-like ALL was observed in 16.6% of 344 patients with B-ALL, who had a higher 5-year OS (60.6 vs. 27.1%; p = 0.008) than the poor-risk Ph-negative ALL subgroup. [1]
Clinical manifestation	The overall incidence of seizure developing after the diagnosis of ALL was 10.1% and in 11 patients (5.6%), seizure recurred one or more times. An average of 6.5+/-3.6 months (range 0-42 months) elapsed between the beginning of treatment and the new onset of seizures. In 13 patients (65%), the first seizure occurred during the induction or re-induction chemotherapy phase. Seizure type was partial seizure in 11 patients (55%), and generalized seizure in 9 patients (45%). In 15 patients (88.2%), brain imaging study showed abnormal findings and in 18 patients (90%), EEG revealed abnormal findings. 11

	patients were diagnosed with epilepsy and were treated with long-term anticonvulsants. In these patients, 4 patients (36.4%) had no seizure recurrence, but 2 patients (18.2%) showed no response to anticonvulsants. [5]
Risk factor	Only two risk factors (low doses of ionizing radiation in early childhood and general pesticide exposure during maternal preconception/pregnancy) were convincingly associated with childhood ALL. Other risk factors including extremely low frequency electromagnetic field, living in proximity to nuclear facilities, petroleum, benzene, solvent, and domestic paint exposure during early childhood, all showed some level of evidence of association. Maternal consumption of coffee (high consumption/>2 cups/day) and cola (high consumption) during pregnancy, paternal smoking during the pregnancy of the index child, maternal intake of fertility treatment, high birth weight ($\geq$4000 g) and caesarean delivery were also found to have some level of evidence of association. [6]
Diagnosis	At the time of diagnosis, 178 patients (77.4%) were classified in the healthy weight range, but this group decreased to 151 patients (65.7%) at the 5-year survival mark. This indicated an increased prevalence of unhealthy weight conditions, including underweight and overweight/obese survivors. In this study, 56 survivors (24.3%) were overweight/obese, while 23 survivors (10.0%) were underweight. According to a cohort study of childhood cancer survivors in the United States, 6.2% were underweight, 53.2% were a healthy weight, 27.7% were overweight, and 12.8% were obese. Our study demonstrated a higher prevalence of underweight individuals and a lower prevalence of overweight and obese individuals than the US study. [7]
Treatment	Several modifications of the hyper-CVAD (hyperfractionated cyclophophamide, vincristine, adriamycin, and dexamethasone) based regimen, the mainstream of frontline therapy for adult patients with ALL, and pediatric-inspired regimens have been attempted by many cancer centers in many countries. Hyper-CVAD was introduced in 1992 by MDACC which showed a 91% CR rate, 6% NRM rate, and a 39% 5-year OS, significant improvements compared to that of the previous VAD regimen. Several drugs were added to augmented hyper-CVAD to achieve better clinical outcomes for particular ALL subgroups with specific features. Nelarabine was added for T-ALL [92,93], rituximab or ofatumumab was added for Burkitt-type with high expression of CD20 [94–96], and TKIs were added to Ph-positive ALL as discussed above, all of which significantly improved the survival rate for over 40 years. [1] Radiotherapy was administered to 995 (20.5%) patients and was the most common among adults (34.3%). HSCT was administered to 54.9% of patients aged >20 years compared with 16.8% in the paediatric group. Prednisone was the most frequently prescribed steroid in the paediatric group (49.8%) during the first 60 days after diagnosis, whereas dexamethasone was predominant in the adult group (37.4%). [4]

Prognosis	Treatment outcomes have improved tremendously with a 5-year disease free survival rate of 85%. However, the survival outcome is still poor in adult ALL. [8]
Genetic information	The Catholic Hematology Hospital in Korea analyzed deletions in the IKZF1 gene using multiplex ligation-dependent probe amplification, which revealed the IKZF1 deletion in 78.8% of 118 patients with Ph-positive ALL. These data indicate a higher relapse rate in Ph-positive ALL with the biallelic IKZF1 deletion. [9]
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Acute Myeloid Leukemia

Incidence	In Korea, from 2011 to 2020, there were 9,495 patients with de novo acute myeloid leukemia (AML). For the incidence estimation, patients with de novo AML from 2011 to 2019 were 8,906. In Korea, from 2011 to 2020, a total of 9,495 patients were identified with de novo AML. For the purposes of estimating incidence, the number of patients with de novo AML from 2011 to 2019 was 8,906. [1]
Prevalence	From 2011 to 2019, the age-standardized prevalence rates of de novo AML increased from 8.93 to 9.67, and the crude prevalence rates increased from 8.93 to 10.50 per 100,000 individuals. [1]
Mortality	The mean follow-up period of patients with de novo AML was 33.62 months (standard deviation:34.13 months) and the median observed OS was 38.6 months (95% confidence interval (CI) 33.77–44.5 months). [1]
Gender	Among the 9,495 patients diagnosed with de novo AML in Korea, 5,132 (54.05%) were male and 4,363 (45.95%) were female. [1]
Age	By age at diagnosis, 833 patients (8.77%) were under 20 years old, 569 (5.99%) were aged 20–29, 849 (8.94%) were aged 30–39, 1,242 (13.08%) were aged 40–49, 1,736 (18.28%) were aged 50–59, 1,806 (19.02%) were aged 60–69, 1,774 (18.68%) were aged 70–79, and 686 (7.22%) were aged 80 years or older. [1] Age-specific prevalence rates were significantly higher in older people compared to younger patients with AML. Notably, the highest increase rates were observed in patients aged 80 years or older at 44.75%. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	AML with recurrent genetic abnormalities accounted for 57.4% (345/601) of the patients under the 2016 WHO Classification. AML with mutated NPM1 was the most common form (16.5%), with the majority associated with monocytic differentiation (63.6%). AML with double CEBPA mutations accounted for 8.3% of these cases, and the majority were previously diagnosed as AML with/without maturation (78.0%). AML with mutated NPM1 and AML with myelodysplasia-related changes comprised the oldest patients, whereas AML with RUNX1-RUNX1T1 included the youngest patients. The leukocyte count was highest in AML with mutated NPM1, and the percentage of peripheral blood blasts was the highest in AML with double CEBPA mutations. [2]
Clinical manifestation	Patients with hypocellular AML were older than those with non-hypocellular AML (median age: 59 vs 49 years; $P < .001$) and presented with leukopenia more frequently (mean white blood cell count: 5810/μL vs 40549/μL; $P < .001$). There was no difference

	between patients with and without hypocellular AML in terms of the presence of antecedent hematologic disorders (5.9% vs 5.3%; P = .809). [3]
Risk factor	In the analysis of the risk of AML according to occupational Classification, a significant association was found in paint manufacturing or painting work (OR = 2.22, 95% CI: 1.03–4.81) and aircrew (OR = 6.00, 95% CI: 1.00–35.91) in males, and in pesticide industry (OR = 6.89, 95% CI: 1.69–28.07) and cokes and steel industry (OR = 2.00, 95% CI: 1.18–22.06) in ≥60 years old. [4]
Diagnosis	The diagnosis of Acute Myeloid Leukemia conceptually involves two steps. First, phenotypic analysis—including assessment of cell morphology and immunophenotype of blasts—is conducted to confirm an increase of myeloblasts to 20% or more in the bone marrow or peripheral blood. The second step involves determining the AML subtype, which is essential for risk stratification, prognosis prediction, and treatment planning. Subtype Classification according to the WHO Classification system is based on cytogenetic abnormalities, gene mutations, dysplasia in non-blast cells, and a history of prior cytotoxic therapy. [5]
Treatment	Treatment status and HSCT significantly influenced the observed OS rates, as indicated by a log-rank test p-value of <0.0001. For the untreated group and HSCT recipients compared to the reference group, the OS HRs were 2.04 (95% CI, 1.97–2.10) and 0.45 (95% CI, 0.38–0.51), respectively. [1] Although there have been no significant changes for a long time in the landscape of AML, especially in the field of treatment, the treatment paradigm has started to evolve with the introduction of new drugs. This evolution is led by FLT3 inhibitors, Bcl-2 inhibitors, isocitrate dehydrogenase inhibitors, target agents against CD33 antigens, and liposomal formulations of chemotherapeutics. [6]
Prognosis	High-intensity regimens and low-intensity regimens were significantly longer than that with supportive care (P<0.0001 and P=0.006, respectively). Multivariate analysis identified age, Eastern Cooperative Oncology Group-performance status (ECOG-PS), hemoglobin (Hb) level, and serum creatinine level as statistically significant prognostic factors for survival. In the HIR group, prognostic factors for survival were ECOG-PS, Hb level, and C-reactive protein level. [7]
Genetic information	NGS revealed at least one mutation in all patients, with a range of one to seven mutations (median of three mutations). Mutations were commonly associated with TET2, CEBPA, RUNX1, FLT3, IDH2, NPM1, and SRSF2 genes. The TET2 mutation correlated with older (77 vs. 72) patients, and the FLT3 mutation was associated with a higher WBC count (33.4 x 109/L vs. 6.4 x 109/L). The RUNX1 mutation correlated with a lower (44.0 x 109/L vs. 65.5 x 109/L) platelet count, and the NPM1 mutation showed a higher number of blasts in peripheral blood (56.5% vs. 13.0%). Among 16 patients who

	received induction chemotherapy, mutations in SRSF2, ASXL1, PHF6, SF3B1, and PTPN11 were detected only in patients who failed to achieve complete remission (CR). Meanwhile, mutations in NRAS, TP53, IKZF1, DNMT3A, SH2B3, U2AF1, and WT1 were detected in patients who achieved CR. [8]
References	[1] Impact of aging on acute myeloid leukemia epidemiology and survival outcomes: A real-world, population-based longitudinal cohort study. PLoS One. 2024 May 21;19(5):e0300637. [2] ReClassification of Acute Myeloid Leukemia According to the 2016 WHO Classification. Ann Lab Med 2019;39:311-316. [3] Clinical features and outcomes of hypocellular acute myeloid leukemia in adults: A Korean AML registry data. Medicine (Baltimore). 2021 Jan 8;100(1):e24185. [4] Case-Control Study of Occupational Acute Myeloid Leukemia in the Republic of Korea. Saf Health Work. 2023 Dec;14(4):451-456. [5] Diagnostic Approach for Acute Myeloid Leukemia Based on the World Health Organization Classification of Hematologic Neoplasms. Korean J Med, 97(5), 308-318.(2022) [6] Changing the strategic paradigm for the treatment of adult acute myeloid leukemia. Journal of the Korean Medical Association. 2023; 66(4) 234-244. [7] Clinical characteristics and treatment outcome of acute myeloid leukemia in elderly patients in Korea: a retrospective analysis. Blood Res. 2014 [8] Genomic Mutation Profiles of Patients with Acute Myeloid Leukemia in Korea: a Single-Center Experience. Clin Lab. 2023 Nov 1;69(11).

Anemia

Incidence	In 332 independent, community-living, elderly aged 60 years and older, 24 (3 males and 21 females) were newly diagnosed with anemia, resulting in a three year incidence rate of 7.2% (n=24/332). [1] The annual incidence of Korean children with aplastic anemia was 5.16 per million per year. [2]
Prevalence	In 2013, the age-standardized prevalence rate of iron deficiency anemia in Korea was 718.9 per 100,000 population. [3]
Mortality	The risk of mortality due to infection in the anemic group was 1.77-fold higher (hazard ratio [HR]: 1.77, 95% confidence interval [CI]: 1.52–2.60; P < 0.001) than that in the non-anemic group. [4]
Gender	Males had a prevalence rate of 293.9 per 100,000, while females had a significantly higher rate of 1,145.8 per 100,000. [3]
Age	In 2013, the age-standardized prevalence of iron deficiency anemia in Korea varied across age groups. The rates per 100,000 population were as follows: Under 10 years: 1,142.6, 10–19 years: 460.2, 20–29 years: 474.5, 30–39 years: 686.1, 40–49 years: 1,094.1, 50–59 years: 526.7, 60–69 years: 511.6, 70–79 years: 811.7, 80 years and over: 1,191.0. [3] The mean age of the participants was 54.5 years old (range: 40–98). [5]
Regional distribution	The overall prevalence was highest in Jeonju and lowest in Kwangju. The prevalence of anemia among females was highest in Jeonju, while the prevalence among males was lowest in Jeju. [6]
Clinical phenotypes/ Classification	Almost 50% of all cases of anemia are attributable to iron deficiency, which is the most prevalent nutritional deficiency, affecting an estimated 2 billion people worldwide. [3] 49,042 (9.6%) individuals were classified in the anemic group, which comprised of 36,383 (7.1%), 11,787 (2.3%), and 872 (0.2%) participants in the mild, moderate, and severe sub-groups, respectively. [4]
Clinical manifestation	Acute upper respiratory tract infections were the most prevalent comorbidity in both females (95%) and males (96.4%). For male, gastrointestinal diseases (94.2%) were ranked second and other upper respiratory problems (93.0%) were ranked third. In the case of females, infectious diseases (92.5%) were ranked second, and other upper respiratory diseases (91.4%) were ranked third. Dermatitis and eczema (84% and 86.2%), and disorders of the conjunctiva (71.3% and 67.3%), were the next most common comorbidities in females and males, respectively. [3]

Risk factor	The causes of anemia include infections (e.g., tuberculosis, malaria, HIV), micronutrient deficiencies (e.g., of iron, folate, and vitamins A/B12/C), and genetic conditions (e.g., sickle-cell disease and thalassemia). [3] Anemia was more prevalent among females than among males, but this difference was not significant in people aged > 85 years. Being underweight, receiving a social allowance, living alone, and having comorbidities such as hypertension, rheumatoid arthritis, diabetes mellitus, cancer, and chronic renal failure were more common among older adults with anemia than among the population without anemia. [5]
Diagnosis	Anemia was defined as a hemoglobin level of < 13.0 g/dL for men and < 12.0 g/dL for women, based on the World Health Organization criteria for anemia. [5] In patients with anemia, those with microcytic anemia and no increase in reticulocyte count are highly likely to have iron deficiency anemia; therefore, iron deficiency should always be suspected in such cases. Additionally, iron deficiency should be considered—and iron studies are recommended—even if the anemia is not microcytic in individuals such as adolescents during growth spurts, pregnant women, patients with restless leg syndrome, chronic kidney disease, hemolytic anemia, or those with a history of bleeding. Iron studies should include serum ferritin, serum iron, total iron binding capacity (TIBC), and transferrin. [7]
Treatment	In patients without obvious bleeding, testing for Helicobacter pylori infection—which can cause iron malabsorption—and performing eradication therapy can aid in treatment and prevention of recurrence. Iron supplementation should be provided alongside correction of the underlying cause. While oral iron therapy requires a long treatment duration and is often associated with gastrointestinal side effects, intravenous iron administration does not cause gastrointestinal issues and can correct iron deficiency in a shorter period. Therefore, it should be actively used in patients who meet the appropriate indications. Although adverse reactions to intravenous iron are usually transient, it is important to adhere to the recommended dosage, infusion rate, and whether a test dose is needed. [7]
Prognosis	The risk of detection of IDA-related disorders were significantly higher in the IDA group than in the control group (leiomyoma of uterus: 20.8% vs. 6.9%, adenomyosis: 5.6% vs. 1.6%, and gastrointestinal malignancies: 2.6% vs. 0.7%). The corresponding hazard ratios were 3.89 (95% confidence interval [CI], 3.85-3.93) for leiomyoma of uterus, 4.99 (95% CI, 4.90-5.09) for adenomyosis, and 3.43 (95% CI, 3.32-3.55) for gastrointestinal malignancies. [8]
Genetic information	A study of 27 patients with hereditary spherocytosis (HS) identified various types of HS, using sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE): spectrin deficiency in 7.4% of cases (2/27), ankyrin deficiency in 29.6% (8/27), combined spectrin

	and ankyrin deficiency in 3.7% (1/27), band 3 deficiency in 11.1% (3/27), and protein 4.2 deficiency in 14.8% (4/27). These findings indicated that ankyrin deficiency alone and its combination with spectrum deficiency accounted for 33.3% of cases (9/27), as the most common biochemical defects. [9] A study reported 42 suspected patients with HS that were screened via OFT and confirmed using the molecular tic test of Sanger sequencing. Of these, 25 patients carried one heterozygous mutation of ANK1 (n = 13) or SPTB (n = 12).52 Deleterious mutations, including frameshift, nonsense, and splice site mutations were found in 91% (21/23) of cases, with non-hotspot mutations dispersed across multiple exons. [10]
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Chronic Lymphocytic Leukemia

Incidence	The crude incidence rate per 100,000 individuals was 0.11. In Korea, 56 patients are newly diagnosed with chronic lymphocytic leukemia (CLL) annually. [1]
Prevalence	The crude prevalence rate of CLL is 0.61 per 100,000. In total, 306 patients had prevalent CLL from the National Cancer Incidence Database (KNCI DB) in Korea. [1]
Mortality	NR
Gender	Among patients, 68.1% were male. [2]
Age	The median patient age was 66 years at diagnosis. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	According to the Chronic Lymphocytic Leukemia International Prognostic Index (CLL-IPI) published in 2016, patients are stratified into four risk categories—low, intermediate, high, and very high risk—based on five independent prognostic factors: presence of del(17p) or TP53 mutation, immunoglobulin heavy chain variable (IGHV) gene mutation status, elevated beta-2 microglobulin levels, Rai staging system, and age. Based on this system, the 5-year overall survival rate was 93.2% for patients in the low-risk group and 23.3% for those in the very high-risk group. [3] Ninety-six (68.1%) patients were male, and 111 (78.7%) had an Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1. Seventy patients (49.6%) were at Rai stage 3 or 4, and 63 patients (44.7%) were at Binet stage C. [2]
Clinical manifestation	Most patients with chronic lymphocytic leukemia present with incidentally detected lymphocytosis on peripheral blood counts. On physical examination, lymphadenopathy is commonly observed, and hepatomegaly is also noted in 20–50% of patients. Approximately 10% of patients exhibit classic B symptoms within six months, such as unintentional weight loss exceeding 10%, unexplained fever, night sweats without signs of infection, or fatigue. Although extralymphoid organ involvement is uncommon in CLL, leukemic infiltration can occasionally affect the skin or central nervous system, leading to related symptoms. [4]
Risk factor	While the data were collected from Western populations, a high incidence has been achieved in males and elder people. Countries and territories with high social-demographic index (SDI) tended to have higher global burden than low-SDI region. Of risk factors, high body mass index and smoking were the major contributors for CLL-related mortality and disability adjusted life-years (DALYs). [5]

Diagnosis	Chronic lymphocytic leukemia is diagnosed when the peripheral blood B lymphocyte count is $\geq 5 \times 10^9$/L and persists for more than three months, with immunophenotyping by flow cytometry confirming monoclonality of the B cells [9]. CLL cells co-express T-cell antigen CD5 and B-cell antigens CD19, CD20, and CD23; among these, CD20 is expressed more weakly than in normal B cells, and the cells exhibit restricted expression of either kappa or lambda immunoglobulin light chains. On peripheral blood smear, leukemic cells typically appear as small, mature B lymphocytes. A well-known morphological hallmark of CLL is the presence of Gumprecht nuclear shadows (also known as smudge cells), which result from the fragility of leukemic cells during smear preparation. [3] The median interval from diagnosis to initial treatment was 0.9 months (range: 0–77.6 months), and the most common treatment indication was progressive marrow failure (50.4%). [2]
Treatment	Regarding first-line therapy, 46.8% received fludarabine, cyclophosphamide, plus rituximab (FCR), followed by chlorambucil (19.9%), and obinutuzumab plus chlorambucil (GC) (12.1%). [2] Following reimbursement, GC became the most common therapy among patients over 65 years and second in the overall population after 2017. [2]
Prognosis	The median progression-free survival (PFS) was 49.3 months (95% confidence interval [CI], 32.7–61.4), and median overall survival was not reached (95% CI, 98.4 mo–not reached). Multivariable analysis revealed younger age ($\leq$ 65 yr) (hazard ratio [HR], 0.46; $p < 0.001$) and first-line therapy with fludarabine, cyclophosphamide, plus rituximab (HR, 0.64; $p = 0.019$) were independently associated with improved PFS. [2]
Genetic information	According to several domestic studies, Korean patients with chronic lymphocytic leukemia often exhibit atypical immunophenotypic features, including higher expression rates of CD22 and FMC7. In addition, the frequency of gene mutations associated with CLL prognosis—such as TP53, ATM, and SF3B1—has been reported to differ in distribution compared to Western populations. [4] Of 57 evaluable patients, 7.0% (4/57) had TP53 aberrations (i.e., deletion of the TP53 locus on chromosome 17p13.1 [del(17p)] or TP53 gene mutations). [2]
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Chronic Myeloid Leukemia

Incidence	In Korea, 458 chronic myeloid leukemia (CML) cases were reported in 2012, with a crude incidence of 0.91/106; its incidence is currently increasing. [1]
Prevalence	Globally, the number of chronic myeloid leukemia cases increased from 31.8 thousand in 1990 to 34.2 thousand in 2017. [2] The prevalence of C921 (chronic myeloid leukemia, BCR/ABL-positive) was 4.64 in 2005, gradually increasing each year to exceed 8.0 in 2011 and reaching 10.57 in 2015. [3]
Mortality	The 5-year relative survival rates increased from 81.8% to 87.1% in myeloproliferative neoplasms, with significant improvement in CML (from 74.5% to 85.5%). [4]
Gender	The highest incidence of myeloid malignancies was observed in age 70s and male predominance was noted (1.3:1). [4] In 458 cases of CML, 288 cases were men, and 170 cases were women. [4]
Age	CML is rarely diagnosed among children and young adults. [2] The incidence tended to increase with age. The highest incidence was observed in those of ≥80 years of age (men=13.31, women=6.65/100,000), followed by those of 65-79 years of age (men=9.40, women=6.58/100,000). [5]
Regional distribution	NR
Clinical phenotypes/ Classification	CML PHILADELPHIA POSITIVE: In CML, the genetic translocation between ABL1 on the long arm of chromosome 9 and the BCR gene on the long arm of chromosome 22 is commonly observed, as shown by molecular studies. As a result, a BCR-ABL1 fusion gene is formed. Less than 1 in 10 patients with CML are Philadelphia negative. The mean age group of Philadelphia negative patients is greater than 65 years, and patients present with common CML abnormalities such as monocytosis and thrombocytopenia. They have a shorter life span than Philadelphia positive patients because of a less effective response to chemotherapy. [6]
Clinical manifestation	The clinical findings in CML are insidious. The disorder is usually detected in the chronic phase when increased WBC counts are found in the blood or when splenomegaly is discovered on a general physical examination. [6]

Risk factor	The prognostic factors for chronic myeloid leukemia include age, spleen size, platelet count, and the proportion of myeloblasts, eosinophils, and basophils in peripheral blood. The three most commonly used prognostic scoring systems are the Sokal score, the Hasford score, and the European Treatment and Outcome Study (EUTOS) score. At diagnosis, approximately 5% of patients exhibit additional cytogenetic abnormalities (ACAs) in Philadelphia chromosome-positive cells. These ACAs are generally considered poor prognostic indicators for tyrosine kinase inhibitor (TKI) therapy. In particular, major-route ACAs—such as a second Philadelphia chromosome, trisomy 8, isochromosome 17q, or trisomy 19—are associated with especially poor prognosis. [7]
Diagnosis	After taking the patient's medical history and performing a physical examination complete blood count with differential, liver and kidney function tests, and electrolyte panels are conducted. The standard diagnostic method involves obtaining more than 20 metaphase cells from a bone marrow aspirate and identifying the Philadelphia chromosome using Giemsa banding technique. Bone marrow examination allows not only for morphological evaluation of the cells but also for detecting any additional chromosomal abnormalities besides the Ph chromosome. In cases where bone marrow aspiration is not feasible, diagnosis can alternatively be made by confirming the t(9;22) translocation in metaphase cells using fluorescent in situ hybridization, or by detecting the BCR-ABL1 translocation through polymerase chain reaction (PCR) performed on bone marrow or peripheral blood samples. [7]
Treatment	In line with international guidelines, BCR-ABL tyrosine kinase inhibitors (TKIs) are recommended as the first-line treatment in Korean patients with CML. Furthermore, imatinib, dasatinib, and nilotinib are reimbursable in Korea as first-line treatments. Since the first introduction of imatinib in Korea in 2001, there has been a striking improvement in the survival of Korean patients with CML. [1] The majority of the Korean respondents were administering first-line treatment (61.9%), while 25.5% and 12.6% were administering second-line and third-line treatments, respectively; the results were generally similar with those for the respondents. The most commonly administered first-, second-, and third-line treatments were imatinib/generic imatinib (39.5%), dasatinib (33.8%), and nilotinib (35.7%), respectively, in Korea and imatinib/generic imatinib (79.4%), nilotinib (38.4%), and dasatinib (33.0%), respectively, in the ROW. More Korean CML patients received second-generation BCR-ABL TKIs, dasatinib, and nilotinib as first-line treatments than those in the ROW (23.5% vs. 6.4% and 26.4% vs. 11.2%, respectively). [1]
Prognosis	The median medication possession ratio (MPR) was 0.95 (range, 0 to 4.67). Male sex ($p = 0.003$), age < 70 years ($p < 0.001$), high income (≥ 30%, $p < 0.001$), and maintaining frontline TKI (< 0.001) were associated with better adherence. Adherence to dasatinib was the lowest (vs. imatinib or nilotinib, $p < 0.001$). Compared with high MPR patients,

	those with moderate MPR (hazard ratio [HR], 4.90; 95% confidence interval [CI], 3.87 to 6.19; p < 0.001) and low MPR (HR, 11.6; 95% CI, 9.35 to 14.42; p < 0.001) had poorer OS.[8]
Genetic information	The null and present types of the GSTM1, GSTT1 gene were analyzed individually. The significant association was found between CML and GST polymorphism (GSTM1; OR=1.306, 95% CI=1.091-1.563, p=0.004, GSTT1; OR=1.987, 95% CI=1.438-2.746, p=0.000). In addition, there was association between CML and the null type of the combination GSTM1-GSTT1 polymorphisms (OR=4.191, 95% CI=2.833-6.201, p=0.000). Thus, genetic polymorphisms of the GSTM1, GSTT1 and combination GSTM1-GSTT1 polymorphism in Asian populations may be risk factors for CML. [9]
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Follicular Lymphoma

Incidence	In Korea, the incidence rate of B-cell lymphoma also increased from 3.71 in 2001 to 6.60 in 2012. [1]
Prevalence	In total, 8,406 patients (0.17% of total inpatients) with non-Hodgkin lymphoma (NHL) were treated at Asan Medical Center between 2008 and 2017, and 498 patients (0.01% of total inpatients and 5.92% of NHL) had follicular lymphoma (FL). [2]
Mortality	The estimated 5- and 10-year progression-free survival and overall survival rates were 68.3% and 84.9% and 63.0% and 71.3%, respectively. [3]
Gender	Male : female ratio was 1.13:1. [2]
Age	The patients with FL (n=239) included in this study had a median age of 52.1 years (range, 17 to 82 years). The proportion of patients aged >60 years significantly increased from 13.2% in 2008–2012 to 34.5% in 2013–2017 (p=.001). [2]
Regional distribution	FL is a tumor that has a large geographic variation. The relative proportion reported in North American and Western Europe has been of 20% to 33%; however, the relative frequency of FL has been reported to be approximately 10% in Asian countries. [3]
Clinical phenotypes/ Classification	In 2013–2017, the proportion of patients with high-risk Follicular Lymphoma International Prognostic Index (21.5% to 28.7%) and grade 3B FL (5.9% to 14.0%) increased but not at a statistically significant level (p=.270 and p=.077, respectively). [2]
Clinical manifestation	Follicular lymphoma typically progresses slowly over months or years, often showing a relapsing and remitting course. Like other non-Hodgkin lymphomas, it is characterized by localized symptoms such as lymphadenopathy and cytopenia. When accompanied by systemic symptoms known as B symptoms—unexplained fever over 38°C, weight loss of more than 10%, and night sweats—the prognosis is known to be poor. However, B symptoms occur in only about 20% of cases, and the clinical manifestations of follicular lymphoma can vary widely depending on the sites of involvement, ranging from asymptomatic to symptomatic cases. The detailed clinical course remains poorly characterized. [4]
Risk factor	Several studies examining risk factors for FL provided evidence that patients engage in behaviors including smoking, a sedentary lifestyle, poor diet, environmental exposure, recreational sun exposure, and obesity. Obesity has a significant and positively strong association with cancer incidence, manifested in patients with other malignancies, and has become a potential risk factor for FL, which may explain the upward trend on FL in Taiwan and South Korea. [1]

Diagnosis	The incidence of grade 1 and 2 FL was 64.9% (n = 205) and of stage III and IV was 51.2% (n = 171). The grade tended to be higher and the stage to be lower compared with Western data. [3]
Treatment	The initial treatment of advanced-stage FL recommends rituximab-containing immunochemotherapy followed by 2 years of maintenance with rituximab, or bendamustine plus rituximab is a preferred choice because of superior progression-free survival with less toxicity than other rituximab-containing immunochemotherapy. For patients with relapsed or refractory FL, there are many options ranging from anti-CD20 monoclonal antibody alone to a combination with lenalidomide and chemotherapy or autologous stem cell transplantation. In addition, the novel approaches for relapsed or refractory FL have been applied with phosphoinositide 3-kinase inhibitor, Bruton's tyrosine kinase inhibitor, enhancer of zeste homolog 2 inhibitor, anti-CD19 chimeric antigen receptor T-cell therapy and bispecific antibodies. [5]
Prognosis	In the chemotherapy group, the complete response rate was 76.0%, and the partial response rate was 17.1%. The median follow-up duration was 38.1 months. [3] A representative prognostic tool for follicular lymphoma is the Follicular Lymphoma International Prognostic Index (FLIPI). Other prognostic indices include the revised FLIPI2 and the PRIMA FLIPI. [5]
Genetic information	Follicular lymphoma (FL) is characterized by t(14;18)(q32;q21) involving the IGH and BCL2 genes. However, 10-15% of FLs lack the BCL2 rearrangement. These BCL2-rearrangement-negative FLs are clinically, pathologically, and genetically heterogeneous. Targeted next-generation sequencing (NGS) revealed mutations in the TNFRSF14, CREBBP, STAT6, BCL6, CD79B, CD79A, and KLHL6 genes, without evidence of BCL2 or BCL6 rearrangement. [6] The immunoprofile was CD20+/CD10+/BCL2+ in 4 cases and CD20+/CD10+/BCL2- in 1 case. The immunostaining pattern for CD21 was similar to that of classic FL.Next-generation sequencing analysis showed mutations in genes involved in epigenetic modifications (KMT2D, ARID1A, EP300, and CREBBP), NK-kB pathway (CARD11), and JAK-STAT pathway as found in classic FL. [7]
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Hemophilia

Incidence	From 2010 to 2015, The estimated age-standardized incidence rate (ASR) of hemophilia A (HA) and hemophilia B was 1.78–3.15/100,000 and 0.31–0.51/100,000, respectively. [1]
Prevalence	The prevalence of HA varied from 2.41 to 2.94 per 100,000 people. [2]
Mortality	The proportion of patients with haemophilia A (PwHA) who experienced life-threatening haemorrhage varied from 0.9% in 2020 to 2.3% in 2014. [2]
Gender	Of the total patients, 1633 (98.43%) were men. [2]
Age	Highest proportion (47.8%) of patients with congenital bleeding disorders was diagnosed at age under 19 years old. For all disorders except factor XI deficiency, more than half of patients were diagnosed at < 19 years of age. [1] The proportion of patients aged 41 or older significantly increased (> 60 years, 2% in 2008 to 7% in 2021; 41–60 years, 15% to 28% over the same period), whereas patients in the ≤ 10 age group decreased from 17% to 11%. [2]
Regional distribution	The geographic distribution of the patients with congenital bleeding disorders in Korea most in Gyeonggi (22.1%) and Seoul (19.2%). However, the estimated ASR of HA was the highest in Daejeon (5.81/100,000). [1]
Clinical phenotypes/ Classification	Hemophilia A is an X-linked recessive coagulation disorder caused by a mutation in the factor VIII (FVIII) gene with an incidence of one in 5,000 male live births.1, 2 HA is classified as severe (FVIII activity < 1%), moderate (FVIII activity 2–5%), or mild (FVIII activity 6–30%), based on the degree of FVIII deficiency.1, 2 Although patients with mild HA generally bleed only after trauma or surgery, those with severe HA experience frequent spontaneous hemorrhagic episodes without any trauma. [3] The joint procedure rates per 1000 patients were 61.2 (95% CI 48.0–76.9) in 2008 and 17.1 (11.2–25.1) in 2021. The rate was highest in patients with a severe phenotype. [2]
Clinical manifestation	Among 2,557 patients, 1,084 had ≥ 1 complication; 829 had joint problems, 328 had viral infections, 146 had neurologic sequelae, and 87 underwent 113 surgeries or procedures due to complications. Patients born after 1989 had a significantly lower risk of viral infections than those born before 1989; 27.1% vs. 1.4% (P < 0.001, odds ratio [OR], 0.037). Patients born after 2002 had a significantly lower risk of joint problems than those born before 2002; 36.8% vs. 24.7% (P < 0.001, OR, 0.538). Patients born after 2002 had a higher incidence of neurologic sequelae than those born before 2002; 3.7% vs. 11.1% (P < 0.001, OR, 3.210). [3]
Risk factor	Hemophilia is usually inherited through an X chromosome with an F8 or F9 gene mutation. However, both the F8 and F9 genes are prone to new mutations, and about

	30% of all cases result from spontaneous genetic variants. Prospective studies report that over 50% of people newly diagnosed with severe hemophilia have no prior family history of hemophilia. [4]
Diagnosis	Diagnosis of hemophilia is based on the following three principles:– understanding the clinical features of hemophilia and the appropriateness of the clinical diagnosis;– using screening tests such as prothrombin time (PT) and activated partial thromboplastin time (APTT) or platelet function tests to identify the potential cause of bleeding (keeping in mind that normal screening test results do not exclude the possibility of a clinically relevant bleeding disorder being present); and– confirming the diagnosis by factor assays and other appropriate specific investigations. [4]
Treatment	Among the 11,728 patients with claims data and a diagnosis of HA, 1659 patients without a diagnosis of other clotting factor deficiencies were prescribed FVIII concentrates at least twice. In this subgroup, the number of patients with severe, moderate, and mild phenotypes was 1178 (71.0%), 332 (20.0%) and 75 (4.5%), respectively. Seventy-four patients (4.5%) were treated with bypassing agents or emicizumab. [2]
Prognosis	The median age of haemophilia patients was 18.9 years in 1999 and 26.5 years in 2022. In recent years, there has been a notable improvement in life expectancy for people with haemophilia, primarily owing to advancements in treatment and comprehensive care. Although this study did not analyse survival, a gradual shift in the age distribution—specifically, an increase in the median age over time—may indirectly reflect improved survival in the HA population. [2] The prevalence of liver disease, hypertension, cerebrovascular disease and diabetes in patients with haemophilia A (PwHA) was higher than that in the general Korean population), even though the median age of PwHA was lower. This finding is consistent with the fact that PwHA are prone to traditional cardiovascular disease, hypertension and diabetes. [2]
Genetic information	A study identified causative mutations in 98% of severe HA patients (98/100). Inv22 and Inv1 mutations were detected in 30 patients and one patient, respectively. A total of 59 unique mutations were identified in 69 non-inversion patients, including 24 novel mutations. The overall prevalence of inhibitor was 26%. Inhibitor risk was highest in patients with large deletion mutations identified using multiplex ligation-dependent probe amplification (100%). Among those with point mutations, the prevalence of inhibitor was highest when the mutation occurred in the A3 and C2 domains (60% and 50%, respectively). [5]
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Leukopenia

Incidence	The annual incidence rate of Severe chronic neutropenia (SCN) ranged from 0.12 to 0.17 per 100,000 person-year (PY) during the study period. [1]
Prevalence	The overall prevalence of neutropenia was 7.48% among 83,740 subjects. [2] The average number of hospital visits by SCN patients was 29.4 (range: 5–306.0, 95% CI: 26.0–32.9). [1]
Mortality	A study identified 5,909 intensive care unit patients with suspected infection; 250 (4.2%) had leukopenia. Leukopenia was associated with increased in-hospital mortality compared with leukocytosis (OR, 1.5; 95% CI 1.1–1.9). [3]
Gender	The total incidence rate was 0.17 in females and 0.12 in males (Relative risk (RR): 1.43, 95%, CI: 1.16-1.76). SCN occurred in 151 males (41.1%) and 216 females (58.9%). [1]
Age	The highest incidence was observed in pediatric patients aged 0 to 9 years (N = 156), followed by women in their fifties (N = 43). The average incidence rate per 100,000 PY for 20–29-year-old patients was 0.04 for males and 0.18 for females (RR: 3.85, 95% CI: 1.27–11.69), respectively, and 0.05 and 0.18 for 30–39-year-old patients (RR: 3.75, 95% CI: 1.39–10.10). [1]
Regional distribution	NR
Clinical phenotypes/ Classification	The severity of neutropenia is divided into mild, moderate, and severe depending on absolute neutrophil count (ANC) levels. Mild neutropenia (ANC 1000–1500/µL) poses minimal infection risk, often resolving without intervention. Moderate neutropenia (ANC between 500 and 1000/µL) increases susceptibility to infections, particularly affecting the skin and mucous membranes. Severe neutropenia is defined as an ANC <500/µL, which significantly raises the likelihood of opportunistic infections, including bacterial and fungal bloodstream infections, pneumonia, and severe mucosal ulcerations. [4]
Clinical manifestation	Acute upper respiratory tract infection was most frequent, followed by lower respiratory tract infection, otitis, intestinal infectious disease, influenza, and conjunctivitis. Infections of the skin and subcutaneous tissue, viral infections of the skin or mucous membrane, pulpitis, acute gastritis or enteritis, mycoses, and stomatitis were frequently encountered. [1]
Risk factor	In clinical settings, chemotherapy-induced neutropenia is among the most common causes, occurring in approximately 16–50% of patients with cancer receiving cytotoxic chemotherapy, particularly those treated for hematologic malignancies. [4]

	Commonly implicated drugs include antibiotics (e.g., penicillins and sulfonamides), antipsychotics (e.g., clozapine), antithyroid drugs (e.g., methimazole and propylthiouracil), and chemotherapeutic agents (e.g., cyclophosphamide and methotrexate). [4]
Diagnosis	The diagnosis of neutropenia requires a thorough clinical evaluation. Clinical history should assess the onset, duration, and presence of symptoms, such as recurrent infections, fever, or mucosal ulcerations. A complete blood count with differential is the primary diagnostic tool used to assess ANC and identify any accompanying cytopenia or hematologic abnormalities. Peripheral blood smears are useful for evaluating neutrophil morphology and detecting immature forms or blasts, which may indicate bone marrow infiltration or myelodysplasia. [4]
Treatment	The underlying mechanism of neutropenia determines its clinical severity and management approaches. Decreased neutrophil production (e.g., congenital and chemotherapy-induced neutropenia) often requires growth factor support (G-CSF) or bone marrow transplantation. In contrast, immune-mediated neutropenia may respond to immunosuppressive therapy or withdrawal of the offending agent. Neutropenia due to sequestration (e.g., hypersplenism) may improve with treatment of the underlying disorder (e.g., splenectomy). [4]
Prognosis	While some cases, such as transient post-infectious or drug-induced neutropenia, have an excellent prognosis with no long-term consequences, others, such as SCN and myelodysplastic syndrome, carry a high risk of complications, including life-threatening infections and malignant transformations. Severe chronic neutropenia carries a 10–30% lifetime risk of progression to myelodysplastic syndrome or acute myeloid leukemia, particularly in patients requiring high-dose G-CSF for ANC maintenance. [4] The average time from the first claim to the last claim was 34.1 months (range: 10.1–82.2 months, 95% CI: 32.4–35.7). [1] A total of 12 patients (3.2%) progressed to acute leukemia and/or MDS and one patient died during the follow-up period of the years 2011–2017. [1]
Genetic information	The R139C variant impairs the stability of the protein and increases incorporation of 6-TGTP and 6-TdGTP into RNA and DNA, respectively, resulting in leukopenia. The frequency of C/C, C/T, and T/T are approximately 80%, 20%, and 1%, respectively in East Asians. Early leukopenia occurred in less than 3% of patients with C/C and in around 20% of those with C/T, whereas it occurred in almost all patients with T/T. [5] Genetic testing is essential in suspected cases of congenital neutropenia. Mutations in ELANE, HAX1, GFI1, and SBDS can confirm the diagnosis of SCN, cyclic neutropenia, or SDS. [4]

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Multiple Myeloma

Incidence	The age-standardized incidence rate (ASIR) was 2.42/100,000 in 2010 and increased to 2.71/100,000 in 2018, with an annual percent change (APC) of 1.86% (95% CI = 0.74-2.99%, P = 0.005). [1]
Prevalence	Owing to an increase in the number of incident cases, the prevalence of multiple myeloma (MM) cases was 3,487 in 2010, doubling to 6,947 in 2018. [1]
Mortality	The median survival time of patients with MM diagnosed between 2010 and 2018 was 3.36 years. Notably, the one-year survival rate of patients was increased from 65.3% in 2010 to 76.2% in 2017. [1]
Gender	Of the cases, 53.7% were men, and 46.3% were women. [1] Both crude incidence and ASIR were higher in men than in women. [1]
Age	The mean patients' age at diagnosis was 67.1 years. [2]
Regional distribution	In 2014, the Gyeonggi area had the highest number of cancer patients newly registered in the national cancer registration system (n=1,067), followed by Seoul (n=962), Gyeongnam (n=267), Gyeongbuk (n=261) and Jeonnam(n=244). [3]
Clinical phenotypes/ Classification	Aberrant marker expression was observed in NeoPC(neoplastic plasma cell)s, with negative CD19 expression observed in 100% of cases, CD56+ in 73.7%, CD117+ in 15.2%, CD27- in 10.5%, CD20+ in 9.2%, and CD28+ in 1.3%. In PCM patients, more than 20% of NeoPCs/BMPCs were significantly associated with factors suggestive of poor clinical outcomes. Patients who were CD27- or CD56+/CD27-, demonstrated shorter overall survival than patients of other CD56/CD27 combinations. [4]

Clinical manifestation	Forty one (68%) of the 61 patients showed osteolytic bone lesions, and 4 (6%) showed osteoporosis only on skeletal survey. In 16 patients (26%) the bone X-ray revealed no abnormalities. [5]
Risk factor	A medical history of anemia was present in 58.3% of patients with MM, and renal failure or kidney disease was present in 37.2% of patients with MM. [1]
Diagnosis	There are several suggested myeloma-defining biomarkers in the 2014 IMWG modification. First, bone marrow plasma cells (BMPCs) $\geq$ 60% was used as a marker of MM requiring therapy. This modification is based on the result of a Mayo Clinic study showing that 21 of 655 analyzed patients with smoldering MM with BMPCs $\geq$ 60% had a 95% risk of progression within 2 years of diagnosis. The second biomarker indicative of symptomatic MM is an involved: uninvolved serum-free light-chain ratio $\geq$ 100. A retrospective study analyzing 586 patients with smoldering MM reported a ratio of at least 100 in 90 patients (15%), and their risk of progression to MM or AL amyloidosis within 2 years was 79%. Finally, patients previously defined with smoldering MM with > 1 focal lesion on magnetic resonance imaging (MRI) studies will be considered MM. Focal lesions were detected in 42 patients (28%), and 23 patients (15%) had > 1 focal lesion. [6]
Treatment	In 2018, the use of immunomodulatory drug (IMiD) and proteasome inhibitor (PI) combination therapy as the initial treatment regimen surpassed that of the previously dominant PI and alkylating agent combination therapies. [2] Since the bortezomib + dexamethasone and bortezomib + thalidomide + dexamethasone regimens received reimbursement in October 2015, the percentage of IMiD-based first-line treatment decreased from 23.6% to 0.8%, while the percentages of PI-based and PI + IMiD-based regimens increased from 51.7% to 53.9% and 12.6% to 36.0%, respectively. [2]
Prognosis	The attrition rates after first-line therapy were 45% and 56% for the stem cell transplantation (SCT and non-SCT groups, respectively. Patients on bortezomib, melphalan, and prednisolone were younger with less renal insufficiency compared to those on lenalidomide and dexamethasone. The SCT group had a median overall survival (OS) of 7.04 years, significantly higher than the non-SCT group's 2.52 years. [2]
Genetic information	The median overall survival (OS) was significantly shorter in patients with hyperdiploidy-2 (20.9 months), pseudodiploidy (19.9 months), and hypodiploidy (18.3 months) compared with patients with normal karyotype (66 months) and hyperdiploidy-1 (55.4 months) ($P < 0.001$). Among patients with chromosomal abnormalities, those with 1q amplification had a shorter median OS (17 vs. 25.1 months, $P = 0.018$). Patients with a chromosome 13 deletion in the pseudodiploidy group also had a shorter OS. [7] In the multivariate analysis, the presence of −13 or del(13q) was the only significant genetic factor affecting OS ($P=0.012$) with a hazard ratio (HR) of 2.131 (95% confidence interval [CI], 1.185–3.832). [8]

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Myelofibrosis

Incidence	The incidence of primary myelofibrosis (PMF) ranged from 0.3 to 0.5 per 100,000 per year. [1]
Prevalence	In 2013, the annual prevalence was 0.868/100,000. [1]
Mortality	Patients with polycythemia vera (PV) or essential thrombocythemia (ET) show near-normal life expectancies, but the median survival of patients with PMF ranges from 4 to 5.5 years. [2]
Gender	In 2013, the annual prevalence was 0.973/100,000 in men and 0.763/100,000 in women, respectively. [1]
Age	The mean age of PMF was the oldest at 63.7 years (63.4 years for males, 64.1 years for females). [1]
Regional distribution	The crude incidence of PMF had been the highest in Jeollanam. Meanwhile, the crude incidence of PMF had been the lowest in Daegu. [1]
Clinical phenotypes/ Classification	The 2016 WHO Classification defined prefibrotic/early stage PMF (pre-PMF). The prognosis of patients with pre-PMF is worse than that of patients with ET in terms of OS, leukemia transformation risk, and fibrotic progression risk. Therefore, differentiation between the two diseases is important. A bone marrow aspirate and biopsy with trichrome and reticulin staining are critical for differentiating ET from prefibrotic PMF. The main diagnostic difference between prefibrotic and overt PMF is the grade of reticulin fibrosis in the bone marrow. Compared with overt PMF, pre-PMF causes a higher hemoglobin level and platelet count, a lower circulating blast percentage, and a lower incidence of splenomegaly. [2]
Clinical manifestation	The majority of patients experience at least one of the symptoms caused by cytopenia, splenomegaly, and increased proinflammatory cytokine levels. The Myeloproliferative Neoplasm Symptom Assessment Form total symptom score is a simple assessment tool for checking a patient's constitutional symptoms, splenomegaly related symptoms, and quality of life at diagnosis and during the course of treatment. [2]
Risk factor	Fine and Gray regression analyses were performed to determine the risk factors for secondary myelofibrosis (SMF) in patients with ET and PV. In patients with ET, high monocyte counts (>1.0×109/L) [hazard ratio (HR), 3.57; 95% confidence interval (CI), 1.17–10.91; P=0.026] and CALR mutations (HR, 4.42; 95% CI, 1.20–16.37; P=0.026) at the time of diagnosis were independent risk factors. In patients with PV, abnormal

	karyotypes (HR, 18.20; 95% CI, 2.0–165.95; P=0.010) at the time of diagnosis was a sole independent risk factor. [3]
Diagnosis	Among myeloproliferative neoplasms, PMF showed the lowest mean hemoglobin level (male, 11.9 ± 2.8 g/dL; female, 11.3 ± 2.4 g/dL). [1]
Treatment	No drug modifying the disease activity of PMF is available. Thus, current treatment is aimed at improving anemia, reducing splenomegaly, and relieving disease-related symptoms. Despite the advent of JAK inhibitors, allogeneic hematopoietic cell transplantation remains the only curative treatment for PMF. [2]
Prognosis	In patients with PMF, the 8-year cumulative incidence of secondary acute myeloid leukemia was 21.4%. [2]
Genetic information	The majority of patients with PMF harbor one of three driver mutations: JAK2 (58% to 66%), CALR (23% to 35%), or MPL (7% to 8%). Patients with PMF harboring CALR type1/type1-like mutations show improved median OS (8.2 to 10.3 years) compared with those harboring CALR type 2/type 2-like (3.1 years), JAK2 (4.3 years), or MPL (4.1 years) mutations. Approximately 10% of patients with PMF are triple-negative, which is associated with worse OS and leukemia-free survival. [2]
References	[1] Real world epidemiology of myeloproliferative neoplasms: a population based study in Korea 2004–2013. Ann Hematol 96, 373–381 (2017). [2] The 2020 revision of the guidelines for the management of myeloproliferative neoplasms. Korean J Intern Med. 2021;36(1):45-62. [3] Myelofibrotic and leukemic transformation in 2016 WHO-defined Philadelphia-negative myeloproliferative neoplasm. Blood Res. 2022;57(1):59-68.

Non-Hodgkin Lymphoma

Incidence	In 2022, the crude incidence rate of Non-Hodgkin Lymphoma (NHL) in Korea was 11.8 per 100,000 population, with a total of 6,069 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of Non-Hodgkin Lymphoma in Korea was 38.0 per 100,000 population, with a total of 19,492 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for Non-Hodgkin Lymphoma in Korea was 65.7%. [1]
Gender	Among the 5-year prevalent cases of non-Hodgkin lymphoma in 2022, 11,121 (57.0%) were male and 8,371 (43.0%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of non-Hodgkin lymphoma by age group was as follows: 0–4 years: 63; 5–9 years: 195; 10–14 years: 201; 15–19 years: 208; 20–24 years: 260; 25–29 years: 364; 30–34 years: 441; 35–39 years: 620; 40–44 years: 1,061; 45–49 years: 1,232; 50–54 years: 1,687; 55–59 years: 2,019; 60–64 years: 2,635; 65–69 years: 2,555; 70–74 years: 2,159; 75–79 years: 1,764; 80–84 years: 1,334; 85 years and older: 694. [1]
Regional distribution	Seoul: 856 cases (19.5%), Busan: 280 cases (6.4%), Daegu: 230 cases (5.2%), Incheon: 227 cases (5.2%), Gwangju: 99 cases (2.3%), Daejeon: 136 cases (3.1%), Ulsan: 84 cases (1.3%), Sejong: 11 cases (0.3%), Gyeonggi: 978 cases (22.2%), Gangwon: 174 cases (4.0%), Chungbuk: 143 cases (3.3%), Chungnam: 190 cases (4.3%), Jeonbuk: 193 cases (4.4%), Jeonnam: 186 cases (4.2%), Gyeongbuk: 259 cases (5.9%), Gyeongnam: 299 cases (6.8%), Jeju: 50 cases (1.1%). [2]
Clinical phenotypes/ Classification	Among 7522 patients with available biopsy sites, 4782 (63.6%) occurred in extranodal sites and 2740 (36.4%) in the lymph nodes. Commonly involved anatomical regions in the extranodal site were the gastrointestinal tract (35.7%), bone and soft tissue (10%), Waldeyer’s ring (7.1%), and the central nervous system (7.0%). MALT was the most common lymphoma of the gastrointestinal tract and eye, whereas ENKTL was the most common lymphoma of the nasal region. [3]
Clinical manifestation	NR
Risk factor	Compared with the general population, female patients with primary Sjögren's syndrome had a 6.95-fold higher risk of developing NHL, while the male patients did not. [4] The fully adjusted Hazard Ratio (HR) for NHL associated with the development of breast cancer was 1.64 (95% CI = 1.34-2.00). [5]

	In global-scale studies, It is increasingly clear that established risk factors such as age, immune modulation from autoimmune disease, and infections account for a small percentage of the overall disease burden. An increasing focus on NHL subtypes, especially in pooled studies, may expand our insight. Likewise, more investigation into emerging exposures with integrated genetic factors and comprehensive medical records is needed. [6]
Diagnosis	The relative frequency of non-Hodgkin lymphoma was 94.8%, and that of Hodgkin lymphoma (HL) was 5.2%. B cell lymphomas accounted for 83.1% of all NHLs; T/natural killer (NK) cell lymphomas, 16.4%; and immunodeficiency-associated lymphoproliferative disorders, 0.5%. The most common NHL subtypes were diffuse large B cell (41.5%), extranodal marginal zone (MALT, 19.8%), follicular (7.5%), NK/ T cell (4.2%), and peripheral T cell lymphomas, not otherwise specific (PTCL, NOS, 3.4%). [3]
Treatment	A total of 194 patients with diffuse large B-cell lymphoma (DLBCL) were identified (median age, 83.3 years). R-CHOP was given in 124 cases, R-CVP in 13 cases, other chemotherapy in 17 cases, radiation alone in nine cases, and surgery alone in two cases. Twenty-nine patients did not undergo any treatment. The median number of chemotherapy cycles was three. Only 37 patients completed the planned treatment cycles. The overall response rate from 105 evaluable patients was 90.5% (complete response, 41.9%). [7] A total of 864 patients with R/R DLBCL who received second-line treatment were identified, and a regimen of ifosfamide, carboplatin, and etoposide (ICE) was administered the most. Among them, 353 were refractory or relapsed cases that were treated with third-line treatments. The median times for second-line to third-line, third-line to fourth-line, fourth-line to fifth-line, and fifth-line to sixth-line treatment failures gradually decreased (3.93, 2.86, 1.81, and 1.38 months, respectively). [8]
Prognosis	Because EBV-positive DLBCL has a poor prognosis, more active EBV screening will be required in Korea, particularly in the elderly. [3] Of the 19,500 patients diagnosed with BNHL in 2006-2015, 1,183 patients (6.1%) developed a total of 1,203 second primary malignancies (SPM)s. The incidence of the first SPM was highest in patients with CLL/SLL (2.74 per 100 person-years), followed by MCL (2.43 per 100 person-years), MZL (2.41 per 100 person-years), DLBCL (2.23 per 100 person-years), FL (1.97 per 100 person-years), and WM (1.41 per 100 person-years). [9]
Genetic information	Among the 34 samples examined, diffuse large B-cell lymphoma (DLBCL) was the most common, followed by NK/T-cell lymphoma, peripheral T-cell lymphoma, anaplastic large cell lymphoma, T-lymphoblastic leukemia/lymphoma, MALT lymphoma, and mantle cell lymphoma. The genes TP53, MYD88, CD79B, FOXO1, KMT2D, MYD88, TNFRSF14, and TET2 had the highest number of mutations. [10]

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Infection

Helicobacter Pylori Infection

Incidence	NR
Prevalence	The seroprevalence of Helicobacter Pylori (H. pylori) infection was 41.5% in total of 23,770 subjects (aged 17-97 years) from a health examination center participated in this cross-sectional study from January 2016 to June 2017. [1] The seroprevalence of H. pylori infection was 54.4% in 10,796 subjects in 2011 significantly lower than the seroprevalence of 59.6% in 2005 and 66.9% in 1998. This decreased seropositivity was widespread across all ages and in most areas of the country. This decreasing trend could be explained by cohort analysis. All younger birth cohorts had a lower H. pylori seroprevalence than those of older birth cohorts at the same age. Decreased seroprevalence within the same birth cohorts also accounted for this phenomenon. [2]
Mortality	NR
Gender	The seroprevalence of H. pylori infection was significantly higher in males than in females (43.2% vs. 39.5%). [1]
Age	Seropositivity tended to increase with age, although it decreased slightly in the older age group. Age distribution of seroprevalence rate was as follow: 16-19 years: 9.5%, 20-29 years 14.7%, 30-39 years: 30.4%, 40-49 years: 40.6%, 50-59 years :45.8%, 60-69 years: 46.0%, ≥70 years: 43.9%. Age distribution of eradication therapy rate was as follow: 16-19 years: 0%, 20-29 years: 1.9%, 30-39 years: 8.8%, 40-49 years: 18.3%, 50-59 years: 28.6%, 60-69 years: 32.5%, ≥70 years: 30.4%. [1]
Regional distribution	Seoul had the lowest seroprevalence of H. pylori infection (38.8%), followed by Gyeonggi (40.6%). Most geographical areas, with the exception of Jeolla and Jeju, had anti- H. pylori IgG prevalence values less than 50%. Seroprevalence by geographical areas was as follow: Seoul: 5,535 cases (38.8%), Gyeonggi: 1,729 cases (40.6%), Chungcheong: 403 cases (47.4%), Gyeongsang: 1,354 (49.1%), Jeolla: 396 cases (54.5%), Gangwon: 271 cases (46.8%), Jeju: 325 cases (56.3%) in 2016-2017. Prevalence of H. pylori eradication therapy by geographical areas was as follow: Seoul: 3,516 cases (24.6%), Gyeonggi: 969 cases (22.8%), Chungcheong:184 cases (21.7%), Gyeongsang: 588 cases (21.6%), Jeolla: 137 cases (19.5%), Gangwon: 124 cases (22.5%), Jeju: 45 cases (15.5%) in 2016-2017. [1]
Clinical phenotypes/ Classification	NR
Clinical manifestation	There was no difference in H. pylori seropositivity between participants with and without upper gastrointestinal symptoms (41.5% vs 41.6%). [1]

Risk factor	The risk factors associated with H. pylori seropositivity according to multivariable analysis were male sex (odds ratio [OR]: 1.34), medium educational level (odds ratio [OR]: 1.17), medium household income level (OR: 1.10), and age of 60-69 years (OR: 8.78). [1] H. pylori is strongly associated with specific gastrointestinal diseases. Although reports vary, the bacterium is detected in approximately 73–100% of duodenal ulcer cases and 65–100% of gastric ulcer cases, showing a slightly higher detection rate in duodenal ulcers. Moreover, H. pylori is reported to be a major cause in 71–95% of all gastric cancer cases. Still, only a small fraction of infected individuals—less than 1%—actually develop gastric cancer. [3]
Diagnosis	Since the 2010s, polymerase chain reaction (PCR) and sequencing tests for detecting clarithromycin-resistant H. pylori strains have been increasingly implemented in Korea. Several studies have shown that tailored therapy guided by PCR results achieves higher eradication rates than empirical therapy, including in 7-day regimens. Accordingly, the third edition of the Korean guidelines recommends performing clarithromycin resistance testing using PCR or sequencing when prescribing standard 7-day triple therapy. The Korean guidelines support both noninvasive and invasive diagnostic methods. Noninvasive tests include the urea breath test, stool antigen test, and serologic assays such as blood agglutination, complement fixation, indirect immunofluorescence, and ELISA. Invasive tests include the rapid urease test, histology, and clarithromycin resistance testing using PCR or sequencing under appropriate clinical conditions. [4]
Treatment	According to the 2020 Revised Evidence-Based Clinical Practice Guidelines for the Treatment of Helicobacter pylori Infection in Korea, the guideline recommends standard triple therapy (proton pump inhibitor at standard dose, amoxicillin 1 g, and clarithromycin 500 mg, twice daily for 14 days) as a first-line eradication regimen. [5] A nationwide registry study conducted between 2010 and 2015 reported a 71.5% eradication rate for 7- to 14-day standard triple therapy in 6,188 patients. [2] For alternative regimens, a meta-analysis of six studies involving 1,897 Korean patients from the same period (2010–2015) found that sequential therapy achieved pooled eradication rates of 77.5% (ITT) and 85.5% (PP), while concomitant therapy showed higher pooled rates of 82.5% (ITT) and 91.5% (PP). [3] *Some differences in H. pylori treatment regimens exist among the guidelines of China, Japan, and South Korea. Bismuth-based H. pylori regimens are strongly recommended in China. In Japan, potassium-competitive acid blockers (P-CABs) are widely used to eradicate H. pylori. The current South Korean guidelines are similar to those of Western countries. Notably, molecular testing to detect Chloramphenicol resistance is recommended as the initial treatment option. [6]

Prognosis	In Korea, a randomized controlled trial evaluating the effect of Helicobacter pylori eradication therapy on the prevention of gastric cancer in adults aged 40–65 years with a family history of gastric cancer was published in 2020. A total of 1,676 individuals were followed for 9.2 years. During the follow-up period, gastric cancer developed in 10 individuals in the eradication group and 23 individuals in the placebo group. H. pylori eradication significantly reduced the risk of gastric cancer (hazard ratio, 0.45). [8]
Genetic information	A total of 381 Helicobacter pylori genomes from China, Japan, and Korea were analyzed, with 329 strains classified as the hspEAsia population. Within hspEAsia, seven subregional clusters were identified, reflecting differences in ethnicity, geography, and gastric cancer risk. Subpopulation-specific sequence polymorphisms were found in genes such as frpB-4, hefC, hopI, and catalase, which are involved in host interaction and adaptation. These findings suggest that H. pylori in East Asia is geographically differentiated at multiple loci, potentially contributing to regional variation in gastric cancer incidence. [8]
References	[1] Trends in the seroprevalence of Helicobacter pylori infection and its putative eradication rate over 18 years in Korea: A cross-sectional nationwide multicenter study. PLoS ONE (2018) 13(10): e0204762 [2] Online registry for nationwide database of Helicobacter pylori eradication in Korea: Correlation of antibiotic use density with eradication success. Helicobacter. 2019 Oct;24(5):e12646. [3] Peptic Ulcer Disease Associated with Helicobacter pylori Infection]. Korean J Gastroenterol. 2016 Jun 25;67(6):289-99. Korean. [4] Management of Helicobacter pylori Infection: A Comparison between Korea and the United States. Gut Liver. 2022 Jul 15;16(4):503-514. [5] Evidence-Based Guidelines for the Treatment of Helicobacter pylori Infection in Korea: 2020 Revised Edition Korean J Med. 2021;96 (3): 160-189. [6] Cho JH, Jin SY. Current guidelines for Helicobacter pylori treatment in East Asia 2022: Differences among China, Japan, and South Korea. World J Clin Cases 2022; 10(19): 6349-6359 [7] Family history of gastric cancer and Helicobacter pylori treatment. N Engl J Med 2020;382:427–436. [8] Genomic differentiation within East Asian Helicobacter pylori. Microb Genom. 2022 Feb;8(2):000676.

Hepatitis B Virus Infection

Incidence	The annual number of reported acute hepatitis B cases was 389 in 2019, 382 in 2020, 453 in 2021, 332 in 2022, 315 in 2023, and 250 in 2024. [1]
Prevalence	The rates of hepatitis B surface antigen (HBsAg) positivity rate among individuals aged 10 years and older were as follow: 2019 (2.3%), 2020 (2.8%), 2021 (2.7%) 2022(2.3%), 2023 (2.4%). [2]
Mortality	The median follow-up duration was 9.0 years (interquartile range: 5.5–13.7 years), with a maximum of 18 years. During 5,791,427 person-years of follow-up, a total of 554 liver-related deaths were identified—428 from liver cancer and 126 from other liver diseases. The liver-related and liver cancer mortality rates were 9.6 and 7.4 per 100,000 person-years, respectively. [3]
Gender	From 2022 to 2024, a total of 545 acute hepatitis B cases were reported in males and 352 in females. Male patients accounted for 60.76% of the cases, while female patients accounted for 39.24%, indicating a consistent male predominance over the three-year period. [2]
Age	The prevalence of HBsAg by age and sex group from Korean National Health and Nutritional Examination Survey in 2023 was as follow: In men, 10-18 years: 0.0%, 19-29 years: 0.6%, 30-39 years: 1.4%, 40-49 years: 2.1%, 50-59 years: 4.0%, 60-69 years: 5.2%, ≥70 years: 2.5%. In women, 10-18 years: 0.7%, 19-29 years: 0.5%, 30-39 years: 1.0%, 40-49 years: 4.1%, 50-59 years 1.3%, 60-69 years: 4.7%, ≥70 years: 2.1%. [2]
Regional distribution	The regional distribution of acute hepatitis B cases reported in 2024 is as follows: Seoul: 28 cases , Busan: 12 cases , Daegu: 11 cases, Incheon: 17 cases, Gwangju: 5 cases, Daejeon: 3 cases , Ulsan: 5 cases, Sejong: 0 cases, Gyeonggi: 69 cases, Gangwon: 11 cases, Chungbuk: 7 cases , Chungnam: 23. case, Jeonbuk: 16 cases, Jeonnam: 10 cases , Gyeongbuk: 12 cases, Gyeongnam: 16 cases, Jeju: 5 cases. [2]
Clinical phenotypes/ Classification	Five clinical phases: the immune-tolerant phase, immune-active phase, Immune-control phase, immune-escape phase, and HBsAg-clearance phase. Individual patients do not necessarily experience these clinical phases in a continuous manner, and clinical phases are not always correlated with criteria or indications of antiviral therapy. [4] The 2022 clinical guidelines first introduced the concept of a "gray zone," referring to patients whose clinical status does not clearly align with any specific phase of the natural course of chronic hepatitis B. While the disease is generally described in terms of distinct clinical phases, the actual progression in individual patients can vary, and transitions between phases are not always sequential or well defined. [5]

Clinical manifestation	In a study on symptom experience in Korean patients with liver cirrhosis (LC), the results indicated that (1) overall symptom experience—referring to the degree of discomfort perceived by patients—was relatively low (mean 41.67, SD 24.71) on the applied symptom scale; (2) the main symptoms needing management were fatigue, abdominal distension and/or peripheral edema, and muscle cramps; and (3) among the study variables, the severity of LC ($P < 0.001$) and the number of hospitalizations ($P = 0.014$) showed a significant relationship with overall symptom experience. [6]
Risk factor	The development of liver cirrhosis and hepatocellular carcinoma (HCC) is influenced by host factors, viral factors, and socio-environmental factors.Host factors include the presence of cirrhosis, chronic hepatic necroinflammation, older age, male sex, family history of HCC, and co-infection with other hepatitis viruses or HIV. Viral factors include high serum HBV DNA and/or quantitative HBsAg levels, HBV genotype C, and specific viral mutations. [7]
Diagnosis	In the 2022 Korean guidelines for chronic hepatitis B, treatment may be considered in presumed immune-tolerant patients with normal ALT if they are aged 30–40 years or older, have serum HBV DNA $< 10^7$ IU/mL, or ALT near the upper limit of normal, and if significant fibrosis is detected by biopsy or noninvasive methods (Recommendation level: B2). [3] During the median follow-up period of 48.9 months (range, 6.6-96.2), HCC developed in 16 patients (13.3 per 1,000 person-years) in the subclinical cirrhosis (SCC) group and 36 (3.4 per 1,000 person-years) in the non-SCC group. The cumulative incidence rate of HCC in the SCC group was significantly higher than that in the non-SCC group ($P<0.001$, log-rank test). [8]
Treatment	In Korea, tenofovir alafenamide fumarate (tenofovir AF) and Besifovir dipivoxil maleate were approved for the treatment of chronic hepatitis B in adults in 2017, so a total of eight antiviral drugs are available and these are as follow: 1. Immune modulator: Pegylated interferon alfa 2a 2. High genetic barrier: Entecavir, Tenofovir disoproxil fumarate (Tenofovir DF), Tenofovir alafenamide fumarate (Tenofovir AF), Besifovir dipivoxil maleate (Besifovir) 3. Low genetic barrier : Lamivudine, Telbivudine, Clevudine, Adefovir dipivoxil (Adefovir) [9] In a 2018 study, the use of high-potency antiviral agents such as entecavir or tenofovir after surgical resection or radiofrequency ablation was associated with a longer recurrence-free survival (88.2 months) compared to low-potency agents (25.1 months; HR 0.47, 95% CI 0.34–0.65) or no antiviral treatment (29.4 months; HR 0.39, 95% CI 0.30–0.51). [10]

Prognosis	The 5-year cumulative incidence of cirrhosis in the natural course of chronic hepatitis B is reported to be approximately 8–20%, and the annual incidence of hepatocellular carcinoma is estimated at 2–5%. In Korea, the incidence of cirrhosis has been reported as 5.1% per year, corresponding to a 5-year cumulative incidence of 23%, while the annual incidence of HCC is 0.8%, with a 5-year cumulative incidence of 3%. [7]
Genetic information	Hepatitis B virus subgenotype C2, which is commonly found in East Asia, can be divided into three phylogenetic clades: C2(1), C2(2), and C2(3). A recent phylogenetic analysis of HBV sequences from 131 Korean patients using the maximum likelihood method showed that all belonged to C2(3) (117/131 patients, 89.3%), except for 12 patients with C2(1) and 2 with C2(2), further supporting our finding of the dominance of C2(3) in South Korea. Of the 117 Korean patients infected with C2(3), 77 (65.8%) carried the sV184A mutation in the overlapping HBsAg region and 101 (79.5%) the xT36P mutation in HBx. Of a total of 65 patients for whom sequence information for both HBsAg and HBx regions was available, the proportion of those carrying both sV184A and xT36P was highest at 61.5% (40/65), followed by those with xT36P alone, at 26.1% (17/65), sV184A alone, at 9.2%, and s184V/+x36T/S/A, at 3.1%. [11]
References	[1] Korea Disease Control and Prevention Agency. Annual Report on the Notified Infectious Diseases in Korea, 2024. [2] National Health and Nutrition Examination Survey (KNHANES VII-3). KDCA. 2023 [3] Isolated Hepatitis B Core Antibody Positivity and Long-Term Liver-Related Mortality in Korea: A Cohort Study. Am J Gastroenterol. 2023 Jan 1;118(1):95-104. [4] Distribution of hepatitis B virus genotypes in Korea. *Korean J Hepatol*. 2009;15(2):140–147. [5] Updated Treatment Guidelines for Chronic Hepatitis B, *Korean J Med.* 2022;97 (6): 353-360. [6] Symptom experience in Korean patients with liver cirrhosis. J Pain Symptom Manage. 2006 Apr;31(4):326-34. [7] KASL clinical practice guidelines for management of chronic hepatitis B. Clin Mol Hepatol, 2022;28:276-331 [8] Increased risk of hepatocellular carcinoma in chronic hepatitis B patients with transient elastography-defined subclinical cirrhosis. Hepatology. 2015 Jun;61(6):1851-9. [9] KASL. 2018 KASL Clinical Practice Guidelines for Chronic Hepatitis B. [10] Entecavir and tenofovir reduce hepatitis B virus-related hepatocellular carcinoma recurrence more effectively than other antivirals. J Viral Hepat. 2018 Jun;25(6):707-717. [11] Global prevalence and molecular characteristics of three clades within hepatitis B virus subgenotype C2: Predominance of the C2(3) clade in South Korea. Front Microbiol. 2023;14:1137084.

Hepatitis C Virus Infection

Incidence	The number of reported hepatitis C cases increased from 6,396 in 2017 to 10,811 in 2018, 9,810 in 2019, and reached a peak of 11,850 in 2020. The number then declined to 10,116 in 2021, 8,308 in 2022, 7,249 in 2023, and 6,444 in 2024. [1]
Prevalence	In 2019–2023, the anti-HCV (hepatitis C virus antibody) positivity rate among individuals aged 10 years and older was 0.6%. The total number of individuals tested was 30,362[2]
Mortality	The estimated incidence of hepatocellular carcinoma in patients with liver cirrhosis (LC) associated with hepatitis C virus (HCV) infection in Korea was 5.8/100 person-years and the overall mortality rate was 5.1/100 person-years. The 3-year cumulative incidence of HCC was 19.1% and the 3-year cumulative mortality rate was 14.5%. [3] A total of chronic HCV-positive patients from May 2007 to June 2019 were categorized into three groups for analysis: untreated (n=619), those who received interferon-based treatment (n=857), and those treated with direct-acting antivirals (n=578). The incidence rates of death/LT per 100 person-years for the untreated group, interferon-based therapy (IBT) group, and direct-acting antivirals (DAA) group were 3.33, 0.87, and 0.65, respectively. [4]
Gender	According to the Korea National Health and Nutrition Examination Survey (KNHANES) from 2019 to 2023, the anti-HCV positivity rate among individuals aged 10 years and older was 0.6% in both males (n = 13,845) and females (n = 17,017) [5]
Age	The anti-HCV positivity rate by age and sex group from Korean National Health and Nutritional Examination Survey in 2019-2023 was as follow: In men, 10-18 years: 0.3%, 19-29 years: 0.2%, 30-39 years: 0.3%, 40-49 years: 2.1%, 50-59 years: 4.0%, 60-69 years: 5.2%, ≥70 years: 2.5%. In women, 10-18 years: 0.7%, 19-29 years: 0.5%, 30-39 years: 1.0%, 40-49 years: 0.4%, 50-59 years 0.8%, 60-69 years: 1.0%, ≥70 years: 1.5%. [2]
Regional distribution	The regional distribution of hepatitis C cases reported in 2024 is as follows: Seoul: 978 cases (15.57%), Busan: 821 cases (13.07%), Daegu: 244 cases (3.88%), Incheon: 541 cases (8.61%), Gwangju: 186 cases (2.96%), Daejeon: 115 cases (1.83%), Ulsan: 136 cases (2.17%), Sejong: 13 cases (0.21%), Gyeonggi: 1,266 cases (20.16%), Gangwon: 101 cases (1.61%), Chungbuk: 160 cases (2.55%), Chungnam: 237 cases (3.77%), Jeonbuk: 221 cases (3.52%), Jeonnam: 205 cases (3.26%), Gyeongbuk: 315 cases (5.02%), Gyeongnam: 686 cases (10.92%), Jeju: 56 cases (0.89%). [1]
Clinical phenotypes/ Classification	In a Korean multicenter cohort of 2,758 HCV-viremic patients (2007–2017), clinical Classification at diagnosis included chronic hepatitis (69.5%), cirrhosis (18.9%), and hepatocellular carcinoma (11.5%). [6]

Clinical manifestation	In a prospective cohort of 2,758 chronic HCV patients at seven tertiary centers in Korea (2007–2017), approximately 88.8% were asymptomatic at diagnosis. [6]
Risk factor	Epidemiological studies thus far show that unlike in the West where illegal intravenous injections are the main route of hepatitis C infection, the prevalence of hepatitis C in Korea is high among the elderly, especially in coastal areas. Exposure to needles, dental procedures, tattoos, and invasive medical practice have been identified as risk factors for infection. [7] The behavioral risk factors possibly related to HCV infection in the Korean HCV cohort were as follow: Intravenous drug use (5%), needle stick injury (7%), transfusion before 1995 (19%), tattooing (36%), living with HCV carrier (0.8%), hemodialysis (0.8%), No. of sexual partner $\geq$ 3 (28%), dental procedure (93%), endoscopy (85%), acupuncture (83%), piercing (35%). [8]
Diagnosis	Among 8,810 patients with HCV in 2019, 7,056 (80.1%) had comorbid diseases). Liver cirrhosis was present in 31.3% of patients. A total of 20.2% and 22.5% of patients had a current or past diagnosis of hepatocellular carcinoma or other cancers, respectively, at the time of HCV diagnosis. [9]
Treatment	Direct-acting antiviral agents are administered as monotherapy or in combination for 12 or 24 weeks, with or without previously used agents. Pegylated interferon and ribavirin are administered for 24 or 48 weeks depending on HCV genotype. [10] Of 567 patients with antiviral therapy (318 with genotype 1, 240 with genotype 2, and nine with other genotypes), 23 (4.1%) patients received peg-interferon and ribavirin therapy and achieved 90.9% of end of treatment response(ETR) and 85.0% of sustained virologic response (SVR), respectively, whereas the other 544 (95.9%) patients received Direct-acting antiviral agents and achieved 97.6% of ETR and 95.6% of SVR, respectively [11]
Prognosis	Endemic HBV infection, predominant genotype 1 HCV, and the predominant C/C type of IL28B in Korea might result in a higher rate of spontaneous HCV infection clearance. The spontaneous clearance rate of acute hepatitis C in Korea was reported to be 44.7%. [5]
Genetic information	Of the 934 patients with positivity for HCV RNA, 847 (90.7%) underwent HCV genotyping, with results showing mainly genotype 1 (n = 439, 51.8%) and 2 (n = 369, 43.6%). Among them, 567 (66.9%) genotype-confirmed patients received antiviral therapy (72.4% [318/439] in genotype 1, 65.0% [240/369] in genotype 2, and 41.2% [7/17] in genotype 3). [11]
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HIV Infection

Incidence	The number of new HIV infections reported in 2022 was 1,066 (2.08 per 100,000 people), an increase of 9.3% (91 people) from the previous year. [1]
Prevalence	In 2023, 19,745 cumulative reports of nationals infected with HIV were obtained. Of these, 18,495 (93.7%) were men and 1,250 (6.3%) were women. [2]
Mortality	There were 158 HIV-related deaths in both 2024 and 2023, compared to 142 deaths in 2022, reflecting a slight increase in recent years. [3]
Gender	According to newly reported cases from 2020 to 2022, the majority of HIV/AIDS patients were male. In 2020, the male-to-female ratio was approximately 11.5:1 (935:81). In 2021, it was about 11.5:1 (897:78), and in 2022, it was around 12:1 (984:82). [1]
Age	The number of newly diagnosed HIV cases from 2020 to 2022 by age group is as follows: 10–19 years: 47 cases, 20–29 years: 1,031 cases, 30–39 years: 968 cases, 40–49 years: 475 cases, 50–59 years: 330 cases, 60–69 years: 178 cases, ≥70 years: 48 cases. People in their 20s and 30s made up approximately 71% of the total cases over the three-year period. [1]
Regional distribution	Regional-level data on HIV/AIDS have not been publicly disclosed in recent updates. However, according to earlier disclosed statistics (cumulative distribution from 1985 to 2011), the reported distribution by place of diagnosis was as follows: Seoul: 34.8%, 37.5%, Gyeonggi: 24.4%, 20.4%, Incheon: 7.0%, 5.4% Busan: 6.8%, 9.3%. [4]
Clinical phenotypes/ Classification	A number of terms have been used to describe individuals at these extremes of the clinical spectrum, including ‘long-term nonprogressors’ (LTNPs), ‘elite controllers’, ‘slow progressors’, ‘HIV controllers’ (HICs), ‘viremic controllers’, ‘noncontrollers’, and ‘rapid progressors’. These terms represent extremes within the virological and clinico-immunological range of disease, with LTNPs and rapid progressors lying on opposite extremes of the clinico-immunological distribution, and elite controllers and non-controllers lying on opposite ends of the spectrum of viral control. The study of these individuals has provided valuable insights into the biology and pathogenesis of disease control and progression. [5]
Clinical manifestation	The presentation of acute HIV infection is highly variable. Fever and influenza- or mononucleosis-like symptoms are common in acute HIV infection but are nonspecific. Patients may also present with more specific symptoms of acute retroviral syndrome (see Box 1, below) such as rash, mucocutaneous ulcers, oropharyngeal candidiasis, lymphadenopathy and meningismus, which should raise the index of suspicion. The mean time from exposure to onset of symptoms is generally 2 to 4 weeks, with a range

	of 5 to 29 days; however, some cases have presented with symptoms up to 3 months after exposure. This time course is prolonged and atypical in patients who become infected while on PEP or PrEP. [6]
Risk factor	Among 2,061 HIV-infected individuals, percentage of patients by risk factors are as follows: Homosexual/Bisexual contact (58.3%), Heterosexual contact (30.3%), IDU/transfusion/surgery (0.6%), unknown/others (10.6%). [7]
Diagnosis	The most common cases were found in “voluntary tests” (215 cases, 30.1%), followed by “tests to confirm the cause of the disease” (179 cases, 25.1%) and “tests performed during surgery or hospitalization” (159 cases, 22.3%). [3]
Treatment	After the first Single-tablet regimens (STRs) was approved in 2014, prescription transitions from multiple-tablet regimens (MTRs) to STR were observed by more than 38% of patients, whereas NNRTI-based and PI-based MTR rates were reduced by 18.6% and 19.9%, respectively, in 2014. In 2018, most patients who started ART were prescribed STR (91.2%, 1035 of 1135 patients) as their first HIV/AIDS treatment medication. [8]
Prognosis	A survival analysis (Kaplan–Meier method) was performed on 2,071 AIDS cohort study subjects enrolled from December 2006 to October 2023. The cumulative survival rate was analyzed to be approximately 90.4% (median 4.9 years). [4]
Genetic information	The majority of HIV infections were of subtype B. The proportions of subtypes B, CRFs, A6, and C were 50.7%, 44.4%, 4.5%, and 0.4%, respectively. Among the CRFs, CRF01_AE (24.6%) was the most prevalent, followed by CRF56_cpx (5.1%), CRF_BC (5.1%), CRF_01B (3.7%), CRF_0107 (3.5%), CRF63_02A6 (1.6%), CRF02_AG (0.4%), and CRF06_cpx (0.2%). The subtype patterns were different for Koreans and non-Koreans. Among the 423 Koreans, subtype B (53.7%) was the most prevalent, followed by CRF01_AE (23.2%), CRF56_cpx (5.9%), CRF_BC (5.0%), CRF_01B (3.5%), CRF_0107 (3.5%), A6 (3.1%), CRF63_02A6 (1.4%), CRF02_AG (0.5%), and CRF06_cpx (0.2%). In contrast, CRF01_AE (34.4%) was dominant among non-Koreans, followed by B (31.3%), A6 (14.1%), CRF_BC (6.3%), CRF_01B (4.7%), CRF_0107 (3.1%), CRF63_02A6 (3.1%), and C (3.1%). [9]
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Influenza

Incidence	From 2010 to 2020 (11 years), there were 208,942–3,031,575 influenza cases (0.4%–5.9% of the population) per year in Korea, with the number of influenza cases fluctuating significantly by year. Except for 2020, more than 1 million cases have occurred yearly since 2016, and the largest number of influenza cases occurred, with 3,031,575 and 2,357,711 cases in 2018 and 2016, respectively. [1] During the 2020–2021 season in Korea, compared to the pre-NPI(non-pharmaceutical interventions) period, the positive rates of respiratory syncytial virus and IFV significantly decreased to 19% and 6%, representing 23% and 6% of the predicted values, respectively. [2]
Prevalence	NR
Mortality	The total number of age-standardized influenza-related deaths varied by year, from 105 in 2013 to 938 in 2018; deaths within 28 days in those younger than 20 years accounted for less than 7%, whereas deaths in older than 60 years accounted for more than two-thirds of all deaths. Overall influenza-related mortality was lowest in 2013 and 2011, with 0.2 and 0.3 per 100,000 population, respectively, and the highest in 2018 with 1.9 per 100,000 population. [1]
Gender	More likely to be female (53.7%; range, 52.6–54.8%). [1]
Age	The mean patients' age of influenza cases was 24.7 ± 20.7 and 29.3 ± 22.0 years in 2010 and 2020, respectively. Notably, by age group, the number and proportion of influenza cases were more than 50% in the <20 years age group, while the proportion of influenza cases was only 8.0% in the ≥ 60 years age group. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	There are four types of influenza virus, namely, A, B, C, and D. Among them, influenza A and B virus cause seasonal influenza. Public health experts are mostly concerned with Type A influenza virus because new, virulent strains of Type A are usually the cause of pandemics (IDSA, 2012). These days, two influenza A virus subtypes (H1N1 and H3N2) are circulating among people, and other subtypes are causing sporadic human infection (CDC, 2017b). [3] Different regions exhibit varying patterns of the illness. For instance, H1N1 infection tends to be relatively common and severe in Asia, whereas H3N2 infection is more prevalent and severe in Europe. [4]
Clinical manifestation	It is frequently isolated in children less than six years of age, in the winter and spring. [5]

	During the 2016–2017 influenza season, which was dominated by the A/H3N2 subtype, the most common initial clinical manifestation was fever, observed in 1,141 patients (80.1%). Other frequently reported symptoms included myalgia (48.2%), cough (40.7%), sore throat (19.0%), and diarrhea (0.6%). The average body temperature was 38.1°C (range, 37.7–38.6°C), and 60.5% of patients presented with a fever of ≥38°C. In contrast, during the 2018–2019 season when A/H1N1 was dominant, fever remained common (79.1%), but the prevalence of myalgia (71.8%), cough (63.8%), and sore throat (40.4%) was notably higher compared to the H3N2-dominant season. The average body temperature was slightly lower at 37.9°C (range, 37.4–38.4°C), and only 47.2% of patients had a temperature of ≥38°C. [4]
Risk factor	The risk of hospital admission was significantly higher in individuals aged 80 years and older (aOR 6.87), those in their 70s (aOR 3.25), and children under 5 years (aOR 2.84), compared to the reference age group (20–49 years). In addition, influenza cases in females (aOR 1.04), individuals receiving medical aid (aOR 2.06), and those with higher Charlson Comorbidity Index (CCI) scores (aOR 1.36 for CCI 1–2; aOR 2.19 for CCI >3) were more likely to be admitted to hospitals. [1]
Diagnosis	Rapid antigen test decreases sensitivity from 5 days after symptoms are expressed. Test performance varied according to days after fever onset. Test specimens for rapid influenza diagnostic test should be collected as soon as possible after the onset of symptoms (less than 4 days). [6]
Treatment	At present, two classes of antiviral agents, adamantanes and neuraminidase inhibitors, are available for the treatment and chemoprophylaxis of influenza in Korea. Because of the widespread resistance against adamantanes, neuraminidase inhibitors are mainly used. [7] The therapeutic effect of oseltamivir is more effective in type A influenza (n=352, 94.1%) than type B influenza (n=57, 78.1%). [8]
Prognosis	Most influenza cases (81.1–90.3%) were classified as mild (ambulatory status) and treated only in an outpatient setting within 28 days after the diagnosis of influenza. However, 0.2–0.9% were severe (ICU hospitalization and/or invasive mechanical ventilation), and approximately 0.1% died. The lowest proportion of mild cases was observed in the age group 80 years and older, 70 years, and younger than 5 years, with 49.8–75.0%, 67.6–85.0%, and 70.1–84.2% by year, respectively; the highest proportion of moderate cases was also observed in these 3 age groups, ranging from 21.1% to 43.9%, 13.3% to 29.8%, and 15.0% to 29.8%, respectively. [1]
Genetic information	Influenza surveillance in South Korea showed that A(H1N1)pdm09 subtype was more frequent than A(H3N2) in2015-2016 (H1N1 44.1%; H3N2 4.7%; B 51.1%). In contrast, A(H3N2)subtype was more frequent than A(H1N1)pdm09 in 2014-2015 (H1N110.9%;

	H3N2 52.0%; B 37.1%), 2016-2017 (H1N1 0.5%; H3N2 72.9%;B 26.6%), and 2017-2018 (H1N1 7.0%; H3N2 38.3%; B 54.7%). [9] In type A influenza, parts of H5N1 and H3N2 and H274Y variations in H1N1 were reported to be resistant to oseltamivir. [10]
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Nontuberculous Mycobacteria

Incidence	The age-adjusted incidence was 1.0 per 100,000 in 2003 and 17.9 per 100,000 in 2016 using data of the National Health Insurance Service database. Annual age-adjusted incidence of nontuberculous mycobacteria (NTM) infection tended to increase rapidly from 2003 to 2016. [1]
Prevalence	Age-adjusted prevalence of NTM infection rapidly increased from 2003 to 2016. The age-adjusted prevalence was 1.2 per 100,000 in 2003 and 33.3 per 100,000 in 2016. [1]
Mortality	Mortality rates of all patients with NTM infection at 1 year and 5 years after diagnosis were 4.7 and 17.8%, respectively. The standardized mortality ratio of patients with NTM infection to the general population was 2.16 [1] 16325 (8.9%) of the NTM patients died, and the survival probability of this group was significantly lower than that of the TB-only or control groups. Overall, 6-, 10-, and 14-year cumulative survival probabilities in the NTM group were 86.3%, 80.8%, and 77.1%, respectively. [2]
Gender	The age-adjusted prevalence of NTM infection was higher in women. In 2016, it was 20.8 per 100,000 in men and 45.1 per 100,000 in women. And women had about 2.5 times higher age-adjusted incidence than men (24.9 vs. 10.4 per 100,000). But the 5 year mortality rate was about three times higher in men than that in women (28.3% vs 9.9%). [1]
Age	Age distribution among total of 46,194 patients with NTM identified between 2003 and 2016 was as follow: 0-19 years: 4.0%, 20-29 years: 6.3%, 30-39 years: 9.0%, 40-49 years: 12.7%, 50-59 years: 20.5%, 60-69 years: 20.8%, 70-79 years: 19.5%, ≥80 years: 7.1%. In 2016, the prevalence was the highest in patients aged 80 years or older (188.7 per 100,000). And elderly patients also had higher incidence. [1]
Regional distribution	A total of 46,194 patients with NTM were identified between 2003 and 2016. And of all patients, 45.7% were living in metropolitan areas. [1]
Clinical phenotypes/ Classification	NTM-lung disease typically comprises two major clinical phenotypes, namely, the fibrocavitary and nodular bronchiectatic forms. The fibrocavitary form (also known as upper lobe cavitary form) is characterized by cavitary lesions, which occur predominantly in the upper lobes, and usually develops in older males with underlying lung disease such as pulmonary tuberculosis and/or chronic obstructive pulmonary disease. [3]

	Regarding clinical phenotypes of NTM-lung disease, the proportion of cases of the nodular bronchiectatic form increased significantly from 56% in 2001 to 72% in 2015 (P trend < 0.001), while the proportion of cases of the fibrocavitary form decreased from 39% in 2001 to 20% in 2015 (P trend < 0.001). [4]
Clinical manifestation	The symptoms of NTM lung disease – cough, sputum, hemoptysis, fatigue, malaise, and weight loss – are nonspecific and similar to symptoms of pulmonary tuberculosis (TB), and thus may also reflect underlying lung disease such as bronchiectasis and chronic obstructive lung disease. Patients with NTM lung disease are more likely to be older, female, non-smoking, and to have fewer constitutional symptoms, a history of previous TB treatment, absence of pleural effusion, involvement of the middle and lower lung zone, and bilateral disease than do patients with pulmonary TB. [5]
Risk factor	Advanced age, female sex, low body mass index, underlying comorbidities, genetic susceptibility, and immunosuppressive therapy are recognized host-related risk factors for NTM pulmonary disease. Notably, bronchiectasis is considered one of the strongest predictors, with affected individuals exhibiting a 21-fold increased risk compared to those without the condition. [6]
Diagnosis	The diagnosis of nontuberculous mycobacterial pulmonary disease requires an integrated approach that considers clinical presentation, radiographic findings, and microbiological criteria, rather than relying on a single parameter. The diagnostic criteria established in 2007 by the American Thoracic Society (ATS) and the Infectious Diseases Society of America (IDSA) have remained largely unchanged over the past 15 years and continue to be widely applied in clinical practice. [7]
Treatment	In South Korea, macrolide-based multidrug regimens are determined according to the etiological NTM species, and as in other countries, NTM pulmonary disease is most frequently due to the Mycobacterium avium complex, although M. kansasii is uncommon here, in contrast to some regions [2]. Only 12,272 patients (23.4%) were treated with combination medication for one year following NTM infection. Among the patients, 9,887 (18.8%) were treated with macrolide-based combination regimens, 9,277 (17.7%) with macrolide/rifampin/ethambutol, and 820 (1.6%) were treated with regimens that included a macrolide, aminoglycoside, and beta-lactam. A total of 4356 (8.3%) patients were treated with isoniazid/rifampin/ethambutol. [8]
Prognosis	In univariable analysis, the prognostic factors that appeared to be significantly associated with all-cause mortality in the NTM group included old age, male, province (reference: metropolitan area), and various respiratory or non-respiratory comorbidities [2].

	The use of a macrolide (more than 1 year) negatively correlated with mortality of NTM infection (adjusted hazard ratio [aHR] 0.61, 95% confidence interval [CI] .53–.71), regardless of azithromycin (aHR 0.60, 95% CI .43–.85) or clarithromycin use (aHR 0.63, 95% CI .53–.75). [2]
Genetic information	Genotype and haplotype data were compared between 360 patients with NTM lung disease and 446 healthy controls. Among 13 CFTR genetic variants that were found by whole-exon resequencing, Q1352H showed a significantly higher frequency in NTM patients than in controls, giving an odds ratio (OR) of 4.27 (95% confidence interval (CI), 1.43-12.78). A haplotype with Q1352H showed the strongest association with the disease, with an OR of 3.73 (95% CI, 1.50-9.25). Furthermore, all Q1352H alleles were associated with the V allele of the V470M variant. [9]
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Norovirus Infection

Incidence	Based on the *Annual Report on the Notified Infectious Diseases in Korea, 2024*, reported cases of norovirus were as follows: 6,782 in 2019; 3,219 in 2020; 4,082 in 2021; 4,673 in 2022; 5,926 in 2023; and 6,766 in 2024. The 2024–2025 reporting period showed the highest number of cases observed since 2019. [1]
Prevalence	From 2010 to 2019, a total of 488 foodborne illness outbreaks caused by viruses were reported in Korea. Among them, 463 cases (94.9%) were attributed to norovirus, while 25 cases (5.1%) were caused by other viruses. [2]
Mortality	NR
Gender	NR
Age	It is most often seen in younger age people with weak immune systems. [3]
Regional distribution	Based on the analysis of the *Number of foodborne outbreaks and patients caused by norovirus infection in the Republic of Korea from 2010 to 2019*, Gyeonggi Province reported the highest average number of patients per year due to norovirus-related foodborne outbreaks, with an average of 364 cases. It was followed by Seoul (203), Gangwon (150), Jeonbuk (117), and Incheon (77). [2]
Clinical phenotypes/ Classification	NR
Clinical manifestation	Total of 39 cases in Chungbuk high school, main symptoms are as follow: Diarrhea (69.2%), Abdominal pain (51.3%), Nauseated (43.6%), Vomiting (30.8%), Fever (12.8%). The average latent period was 44 hours. [3]
Risk factor	Winter seasonality and frequent outbreaks in group settings are recognized risk factors for infection. [1] Among 226 norovirus-related gastroenteritis outbreaks reported to the U.S. Centers for Disease Control and Prevention (CDC) between 2001 and 2004, the modes of transmission were foodborne (30%), person-to-person contact (35%), and waterborne (5%). The settings in which the outbreaks occurred included restaurants (28%), nursing homes and hospitals (31%), cruise ships and vacation settings (16%), and schools (8%) (JID, 2006). [5]

	The winter (December to February) occurrences of norovirus averages at 17.9 outbreaks and 474.2 persons affected for the study years, which is about half of annual norovirus outbreaks (45.8%) and about one-third of affected persons (32.2%). [6]
Diagnosis	The most commonly reported method for detecting norovirus is PCR-based testing. Currently, one-step RT-PCR and semi-nested PCR methods, which rely on electrophoresis, are widely used. In addition, with recent advances in DNA sequencing technology, many studies have been published analyzing the sequences of detected viruses and comparing them with previously reported viral sequences. [2]
Treatment	To date, no US Food and Drug Administration-approved therapies are available for norovirus AGE (acute gastroenteritis). Most norovirus gastroenteritis episodes last 2–3 days, are self-limiting, and are managed with hydration and supportive care. [7]
Prognosis	Norovirus gastroenteritis attack rates during outbreaks in long-term care facilities can be up to 45% and are associated with hospitalization rates of ~4% and mortality rates of ~2%, making LTCFs an important target for surveillance and control of norovirus. [7]
Genetic information	Noroviruses are classified into ten genogroups (GI–GX), but only three genogroups—GI, GII, and GIV—have been confirmed to infect humans. Genotype GII.4 has been identified as the predominant strain responsible for human infections over the past two decades. [8] Human norovirus was genotyped using 1,486 groundwater samples collected from 843 wells suspected of contamination in South Korea between 2007 and 2016. A total of 186 Human norovirus sequences were identified from 178 positive samples through the RIVM-NoroNet genotyping tool and phylogenetic tree analysis based on NoroNet reference sequences. Genogroup GII was more prevalent than GI. The most frequently detected genotypes were GII.4 (43.0%), GII.22 (15.6%), GI.5 (10.2%), and GI.1 (8.6%). Other genotypes detected at frequencies below 5.0% included GII.17, GI.6, GI.4, GII.6, GI.8, GII.3, GII.13, GI.3, GI.7, GI.2, GI.9, GII.1, GII.8, and GII.10. [4]
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Respiratory Syncytial Virus

Incidence	According to the Annual Report on the Notified Infectious Diseases in Korea, 2024, the number of reported cases of respiratory syncytial virus (RSV) infection was 11,897 in 2019, 4,390 in 2020, 743 in 2021, 8,405 in 2022, 11,381 in 2023, and 8,976 in 2024. The highest positivity rate was observed in winter (15.3%, 95% CI: 14.4–16.1), followed by autumn (14.7%, 95% CI: 13.7–15.6). In contrast, positivity rates were lower in spring (2.9%, 95% CI: 2.4–3.3) and summer (0.8%, 95% CI: 0.5–1.0). [1] During the 2020–2021 season in Korea, compared to the pre-NPI period, the positive rates of RSV and influenza significantly decreased to 19% and 6%, representing 23% and 6% of the predicted values, respectively. [2]
Prevalence	A total of 570 healthy young males from across the country, enlisted for military service at the Republic of Korea Air Force boot camp, were included in the investigation. RSV IgG seroprevalence was assessed using an enzyme immunoassay method prior to the initiation of basic training. The mean age of the participants was 20.25 ± 1.34 years. Among them, 561 (98.4%) tested positive for RSV IgG antibodies, 2 (0.4%) were negative, and 7 (1.2%) had equivocal results within the gray zone. [3]
Mortality	NR
Gender	To evaluate sex-related differences in RSV A infection, 23,284 specimens were analyzed, including 13,961 and 9323 from male and female patients, respectively. The RSV A-positivity rates were 7.5% (95% CI: 7.0–7.9%) in male patients and 8.0% (95% CI: 7.4–8.5%) in female patients, respectively. [1]
Age	Between 2007 and 2024, the RSV A-positivity rate was 18.5% in infants aged 0 years (846/4,556), 8.0% in children aged 1–19 years (896/11,137), 0.7% in adults aged 20–64 years (23/2,899), and 0.9% in older adults aged 65 years and above (46/4,692). [1]
Regional distribution	RSV infection mainly occurred between October and February, and showed the peak in November. The prevalence of RSV infection had a moderate negative correlation with mean temperature (r=-0.60), a weak negative correlation with relative humidity (r=-

	0.26), and precipitation (r=-0.34). Regarding air pollutants, RSV activity moderately correlated with NO2 (r=0.40), SO2 (r=0.41), and CO (r=0.58). In the RSV peak season in Korea (between October and February), RSV epidemics showed a weak positive correlation with relative humidity (r=0.35, P=0.03) and precipitation (r=0.38). [4]
Clinical phenotypes/ Classification	NR
Clinical manifestation	RSV was a common cause of bronchiolitis in young children in Korea; among hospitalized children who tested positive for RSV, 24.0–79.5% had bronchiolitis, with the highest rates seen in those aged <2 years. [5].
Risk factor	The most important risk factor for RSV infection is age, and infants (aged <1 year) and the elderly are at greatest risk of severe illness. In the pediatric population, risk factors for severe RSV infection requiring hospitalization include young age (<6 months), male sex, prematurity, low birthweight, birth during the first half of the RSV season, having older siblings, overcrowding/daycare, and exposure to tobacco smoke. [5]
Diagnosis	Laboratory confirmation of RSV infection may be conducted using real-time reverse transcription polymerase chain reaction or viral culture. For asymptomatic regular contacts, a rapid antigen detection test using a commercially available enzyme immunoassay kit can be used to screen for RSV-specific antigens. [6]
Treatment	Treatment for RSV infection is generally supportive and may involve antipyretics and hydration, Prophylaxis with the monoclonal antibody palivizumab in high-risk infants can reduce RSV-associated hospitalizations. [5]
Prognosis	During 2011-2016 in a regional hospital in South Korea, 1,193 patients aged less than 15 years with laboratory-confirmed RSV infection were identified. Of these, 35 (35 of 1,193, 2.93%; boys, 19; girls, 16; mean age: 20.8±16.6 months) presented with seizure. Febrile seizure was the most common diagnosis (27 of 35, 77.1%); simple febrile seizures in 13 patients (13 of 27, 48.1%) and complex febrile seizures in 14 (14 of 27, 51.9%). Afebrile seizures without meningitis or encephalopathy were observed in 5 patients (5 of 35, 14.3%), seizures with meningitis in 2 (2 of 35, 5.7%), and seizure with encephalopathy in 1 (1 of 35, 2.9%) patient. Lower respiratory symptoms were not observed in 8 patients. In a patient with encephalopathy, brain diffusion-weighted magnetic resonance imaging revealed transient changes in white matter, suggesting cytotoxic edema as the mechanism underlying encephalopathy. Most patients recovered with general management, and progression to epilepsy was noted in only 1 patient. [7]
Genetic information	RSV-A is more common than RSV-B in Korean adults. Among Korean adults hospitalized with RSV infection, RSV-A was more common than RSV-B in all age groups including 19–

	49 years (65.0% versus 35.0%), 50–64 years (69.2% versus 21.2%) and ≥65 years (68.9% versus 22.0%) [5] In order to know RSV's genetic changes 4028 respiratory specimens were examined from local hospital outpatients in Gyeonggi Province, South Korea over six consecutive years (2009-2014) by real-time one-step RT–PCR. 183 patients were positive for RSV infection. Of the 131 RSV-A specimens sequenced, 61 (43.3%) belonged to the ON1 genotype, 66 (46.8%) were NA1 genotype, 3 (2.1%) were GA5 genotype, and 1 (0.7%) belonged to the GA1 genotype. Of the 31 RSV-B specimens sequenced, 29 were BA9 genotype (87.9%) and 2 were BA10 genotype (6.1%). [8]
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Tuberculosis

Incidence	The number of newly notified tuberculosis (TB) cases by year is as follows: 16,264 cases in 2022 and 15,640 cases in 2023. [1]
Prevalence	In 2024, a total of 17,944 tuberculosis cases were reported in Korea, compared to 19,540 cases in 2023 and 20,383 in 2022. This represents a continued decline since 2011, when the number of cases peaked at 50,491 (100.8 per 100,000 population)—the highest annual count since the national tuberculosis surveillance system was established in 2000. Over the past 13 years, the number of cases has decreased by 64.5%, with an average annual reduction of 7.6%. [1]
Mortality	The survival probability of TB patients at 1, 5, and 10 years after diagnosis was 87.8%, 75.3%, and 63.3%, respectively. [2]
Gender	In 2024, males accounted for 60.3% (n = 8,690) of all reported tuberculosis cases, with an incidence rate of 34.04 per 100,000 population, whereas females comprised 39.7% (n = 5,722), with an incidence rate of 22.23 per 100,000 population. [1]
Age	the age-specific distribution of tuberculosis cases reported in 2024 is as follows: 0–9 years: 10 cases (0.07%), 10–19 years: 115 cases (0.80%), 20–29 years: 564 cases (3.91%), 30–39 years: 807 cases (5.60%), 40–49 years: 1,055 cases (7.32%), 50–59 years: 1,977 cases (13.72%), 60–69 years: 2,833 cases (19.65%), ≥70 years: 7,051 cases (48.92%). [1]
Regional distribution	The regional distribution of tuberculosis cases reported in 2024 is as follows: Seoul: 2,383 cases (13.28%), Busan: 904 cases (5.04%), Daegu: 767 cases (4.28%), Incheon: 787 cases (4.39%), Gwangju: 332 cases (1.85%), Daejeon: 299 cases (1.67%), Ulsan: 297 cases (1.66%), Sejong: 39 cases (0.22%), Gyeonggi: 3,205 cases (17.86%), Gangwon: 577 cases (3.22%), Chungbuk: 489 cases (2.73%), Chungnam: 702 cases (3.91%), Jeonbuk: 608 cases (3.39%), Jeonnam: 818 cases (4.56%), Gyeongbuk: 1,143 cases (6.37%), Gyeongnam: 867 cases (4.83%), Jeju: 195 cases (1.09%). [1]
Clinical phenotypes/ Classification	According to data from the National Health Insurance Service, a total of 14,232 cases of respiratory tuberculosis were reported in 2016. In the same year, 299 cases involved the nervous system, 387 cases affected the bones and joints, 155 cases involved the heart and pericardium, and 285 cases were classified as miliary tuberculosis. Additionally, there were 946 cases categorized as other types. [3]
Clinical manifestation	A total of 4,636 patients with pulmonary tuberculosis were enrolled in the study. Among them, 1,720 patients (37.1%) were asymptomatic, while 2,916 patients (62.9%) presented with one or more symptoms. The most commonly reported TB-related

	symptom was cough and/or sputum, observed in 1,892 patients (40.8%), followed by dyspnea in 688 (14.8%), chest pain in 273 (5.9%), hemoptysis in 241 (5.2%), fever in 527 (11.4%), general weakness in 224 (4.8%), and weight loss in 355 (7.7%). In total, 1,071 patients (23.1%) experienced two or more symptoms. [4]
Risk factor	Independent risk factors for a severe PTB pattern were age (adjusted odds ratio 1.014) and male sex (adjusted odds ratio 1.422), whereas no significant risk factor was found for mild PTB. [5] The major findings show that participants who are male (adjusted HR (aHR) = 1.81, at a 95% CI, range: 1.11-2.94), older in age (aHR = 1.07, at a 95% CI, range: 1.00-1.14), have a lower income (aHR = 1.96, at a 95% CI, range: 1.10-3.48) and who are underweight (aHR = 1.92, at a 95% CI, range 1.15-3.20) were at higher risks for TB recurrence. [6]
Diagnosis	Among the 14,031 Korean patients with active pulmonary TB whose data were analyzed from 2018 to 2020, 37% (n=5191), 38% (n=5328), and 25% (n=3512) were classified as having a mild, moderate, and severe disease status, respectively, according to the Pulmonary Tuberculosis Spectrum Score. [5]
Treatment	According to the data from 2013 to 2014, the treatment completion rate for latent tuberculosis infection varied by treatment regimen. The overall completion rate was 83.0% (8,985 out of 10,822). Among the specific regimens, the 3-month isoniazid and rifampicin combination showed the highest completion rate of 88.4% (2,791/3,157), followed closely by the 4-month rifampicin monotherapy with 88.2% (820/930). The 9-month isoniazid monotherapy had the lowest completion rate at 79.8% (5,374/6,735). [7]
Prognosis	Treatment success rates among smear-positive TB patients increased from 68.0% in 2011 to 88.3% in 2016. The rates were 68.0% in 2011, 79.8% in 2012, 85.1% in 2013, 84.4% in 2014, 83.8% in 2015, and 83.3% in 2016. The treatment success rate among multidrug-resistant TB cases increased from 54.1% in 2014 to 60.0% in 2015 and 64.3 in 2016. [7]
Genetic information	Antibiotic resistance was evaluated in relation to each mutated gene. Four cases harbored a Ser315Thr mutation in katG, and 3 (75.0%) of these were resistant to Isoniazid. Six (8.7%) of the 69 cases lacking mutations in katG and inhA were resistant to Isoniazid. His526Leu, His526Tyr, and His526Thr mutations in the rpoB gene were associated with resistance to rifampin in 1 case each. Additionally, 3 (75.0%) of the 4 cases with the Ser531Leu mutation were rifampin-resistant. However, rifampin resistance was not observed in the 66 cases lacking mutations in the rpoB gene. [8]
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Musculoskeletal

Ankylosing Spondylitis

Incidence	Incidence increased from 5.7 per 100,000 person-years (95% CI 5.5~5.9) in 2010 to 7.9 (95% CI 7.6~8.1) in 2015. [1]
Prevalence	In a study performed using the Korean Health Insurance Review Agency database (2010 to 2015), the prevalence of ankylosing spondylitis (AS) was 52.3 (95% CI 51.7~52.9) in 2015. [1]
Mortality	According to Korean national health insurance data from 2003 to 2013 of 1,111 AS patients and 5,555 controls, no statistical difference was observed between the mortality rates of AS patients and the controls. [1]
Gender	The prevalence of AS in male was 83.11 per 100,000 persons, which was 3.6 times higher than the female prevalence (23.16 per 100,000 persons). [1]
Age	The proportion of patients aged 50 years and older increased significantly, accounting for 19.5% of the AS population in 2010 and rising to 32.5% in 2023. [2]
Regional distribution	The residential area at AS diagnosis was categorized into urban and rural, comprising 47.4% and 52.6% of AS patients, respectively. [3]
Clinical phenotypes/ Classification	Significantly lower erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) were observed in familial AS patients compared to their sporadic AS counterparts (ESR, 22.6±22.2 vs 35.4±34.4, P=0.029; CRP, 1.24±1.7 vs 2.43±3.3, P=0.003). A significantly lower body mass index was noticed in the familial group (21.9±2.7 vs 23.7±3.3, P=0.002). HLA-B27 positivity was significantly higher in familial AS (97.4% vs 83.1%, P=0.044). Assessment of the pattern of arthritis revealed that oligoarthritis was significantly less common in the familial group, which also had less asymmetry. [4]
Clinical manifestation	28% of AS patients developed one or more extra-articular manifestations. The most common extra-articular manifestation was uveitis, which occurred in about 20% of AS patients, and this incidence was more than 9 times than that in the control group. AS patients also showed a higher disability rate than the controls (odds ratio [OR] 5.3, 95% CI 3~6.6), which was higher for severe physical disability. [1] In the Hanyang University AS Study of 732 males and 98 females, 1) Korean AS more frequently involved peripheral joints and hip joints, 2) females had a higher incidence of uveitis, and 3) juvenile-onset AS had the higher percentage. [1]
Risk factor	Multivariate analysis showed that male sex, presence of extra-articular manifestations, age at diagnosis, and longer duration of follow-up were independent risk factor for all

	cause disability. [1] The recurrence risks in the familial AS patients for first, second and third degree family members were 14.5%, 5.2%, and 4.4% respectively. [4]
Diagnosis	There is still no blood test that can definitively diagnose ankylosing spondylitis. Elevated ESR and CRP levels are observed in approximately 40% of patients. As for imaging, plain radiographs are used to assess the presence or severity of sacroiliac joint and spinal involvement. Magnetic resonance imaging is useful for detecting non-radiographic sacroiliitis due to its ability to visualize bone marrow edema. In this regard, MRI has recently been incorporated as a diagnostic tool in the Classification criteria for axial spondyloarthritis (2010 ASAS Classification). [5]
Treatment	The goal of AS treatment is to maintain a stable remission without pain or inflammation, and is achieved by providing appropriate drugs and education on exercise and smoking cessation. Since the introduction of tumor necrosis factor (TNF)α inhibitor for the treatment of AS in the early 2000s, treatments have developed dramatically. In 2017, an interleukin-17 inhibitor was approved by the Korea Food and Drug Administration for secondary use when TNFα inhibitor proves ineffective. [1] The use of conventional synthetic disease-modifying antirheumatic drugs decreased from 60.4% in 2010 to 38.9% in 2023, while prescriptions for TNF-alpha inhibitors increased from 29.7% in 2010 to 41.6% in 2023. Both IL-17 inhibitors and JAK inhibitors showed an upward trend in usage, with a significant increase in IL-17 inhibitors beginning in 2017 and JAK inhibitors in 2020. [2]
Prognosis	Spinal radiologic progression occurred more slowly in juvenile onset AS compared to AS in adults. [1] 211 (1.62%) AS patients and 639 (0.98%) controls died during the study period, and AS patients experienced heart failure and had mortality adjusted hazard ratios of 2.38 (95% CI 1.8~2.8) and 1.7 (95% CI 1.4~1.9), respectively, as compared with controls. [1] the hazard ratio of tuberculosis was significantly higher in the infliximab group than in the etanercept group (adjusted hazard ratio [HR] 8.40 [95% CI 1.1~66.9]) In a subgroup analysis by sex, the HR of herpes zoster was higher in the females treated with golimumab than in the etanercept group (adjusted HR 12.40 [95% CI 1.4~109.6]). [1]
Genetic information	A comparative analysis of B27 (+) blood samples from 143 Korean patients with AS and 32 controls showed AS samples were B*2704 (+) in 7.7%, B*2705 (+) in 90.9 %, and B*2710 (+) in 1.4%. Results in controls were B*2704 (+) in 34.4%, B*2705 (+) in 59.4%, B*2710 (+) in 3.1%), and B*2715 (+) in 3.1%, and the B*2705 subtypes percentage was significantly higher in AS patients than controls. [1]
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Axial Spondyloarthropathy

Incidence	The incidence of radiographic axial spondyloarthritis (r-axSpA) was 7.9 in 2015. [1]
Prevalence	According to a study using the Korean Health Insurance Review Agency database, the estimated prevalence of r-axSpA was 52.3 in 2015. [1]
Mortality	In a global study, Patients with non-radiographic axSpA (nr-axSpA) had significantly lower SMR: 0.44 (95% CI 0.23 to 0.77), compared with the general population. [2]
Gender	Of 278 patients, 152 (54.7%) were male. [3]
Age	Mean age at symptom onset was 28.2 ± 14.2 years. Mean age at diagnosis of nr-axSpA was older in female patients than in male patients (31.8 ± 15.8 years vs 24.9 ± 12.0 years, $P < 0.001$). [3]
Regional distribution	NR
Clinical phenotypes/ Classification	The cluster analysis classified patients into two groups: axial group predominantly showing isolated axial manifestations (n = 828) and extra-axial group more frequently showing extra-axial symptoms (n = 214). Almost all extra-axial symptoms (peripheral arthritis, enthesitis, uveitis, and psoriasis) were more frequently observed in the extra-axial group than in the axial group. Moreover, patients in the extra-axial group had shorter disease duration, later disease onset, and higher disease activity than those in the axial group. The disease activity was comparable between the two groups after 1 year of treatment with TNFi. And The extra-axial group had a lower drug survival with TNFi than the axial group ($p = 0.001$). [4]
Clinical manifestation	Enthesitis and uveitis were more frequently found in female patients than in male patients. [3] Arthritis of the hip has been reported in 25%-35% of axial spondyloarthritis patients. Severe isolated arthritis of the hip or bony chest pain may be the presenting complaint particularly in patients with juvenile-onset disease. Arthritis of peripheral joints may be diagnosed at any point in the disease course. Chest pain, a common occurrence at any stage, can be confused with cardiovascular disease. The most specific findings include loss of spinal mobility, with limitation of anterior and lateral flexion and extension of the lumbar spine and chest expansion. [1]
Risk factor	Dyslipidemia was the most common comorbidity (8.4%), followed by hypertension (6.1%). [3]
Diagnosis	In 2009, Assessment of SpondyloArthritis international Society (ASAS) criteria covering patients with and without radiographic changes in the sacroiliac joint was developed for

	diagnosis of axSpA. These criteria should be applied in cases involving chronic back pain (>3 months) starting at an age younger than 45 years. Sacroiliitis on imaging remains important, not only when visible on radiographs but also when subchondral bone marrow edema can be observed as evidence of active bony inflammation on MRI. [1]
Treatment	Medical treatment for r-axSpA involves the use of a stepwise strategy, starting with administration of nonsteroidal anti-inflammatory drugs and physiotherapy, and progressing to sulfasalazine or methotrexate and biologics including TNF-α inhibitors or IL-17 inhibitors as needed. Use of Janus kinase inhibitors has been recently reported. [1]
Prognosis	Thirty-one (11.1%) participants with nr-axSpA progressed to ankylosing spondylitis. The median follow-up duration was 48 months. Age at symptom onset (hazard ratio [HR] 0.93, 95% confidence interval (CI) 0.88-0.97, P = 0.006), body mass index (BMI) (HR 1.24, 95% CI 1.06-1.44, P = 0.005) and sacroiliitis grade (HR 1.86, 95% CI 1.19-2.92, P = 0.006) were associated with progression to ankylosing spondylitis. [3]
Genetic information	SNP in RUNX3 (rs11249215) was significantly associated with the risk of AS (odds ratio, 1.31; 95% confidence interval, 1.02 to 1.68, p = 0.03). [5] Development of IL-17 blockers has been facilitated by the discovery of the association between IL23R variants and spondyloarthritis. [6]
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Chronic Back Pain

Incidence	Previous studies have documented that 50% to 80% of people will experience lower back pain (LBP) at least once in their lives, with a point prevalence of 15% to 30% and annual incidence of 15% to 45%. [1]
Prevalence	The prevalence of chronic low back pain was 15.8% in South Korean subjects. [2]
Mortality	NR
Gender	The prevalence was 11.8% in men and 24.5% in women. [2]
Age	Although LBP can develop in all age groups, it is most common in the working population, i.e., adults aged 35 to 55 years. [1] Prevalence by age group was as follows: 2.25% in teens, 6.85% in 20 s, 7.88% in 30 s, 9.22% in 40 s, 15.34% in 50 s, 25.51% in 60 s, 33.91% in 70 s, 36.93% in 80 s, and 29.41% in 90 s. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	The etiologies of LBP can be classified as mechanical, neuropathic, systemic (inflammatory), and secondary to other causes. [1] A total of 481 patients with chronic low back pain were diagnosed with lumbar disc herniation (n=136, 28%), spinal stenosis (n=191, 39%), spondylolisthesis (n=24, 5%), musculoskeletal back pain (n=61, 12%). [3]
Clinical manifestation	Chronic low back pain may lead to impairments in daily activities due to reduced lumbar muscle strength, endurance, mobility, flexibility, and coordination. It can also result in psychological complications such as depression, potentially causing significant mental health issues. [4]
Risk factor	After regression analysis, study found advanced age, female gender, mid-intensity physical activity, depressive symptoms, stroke, ischemic heart disease, knee arthritis, asthma, chronic obstructive pulmonary disease, and cancer history were positively associated with chronic low back pain. [2]
Diagnosis	Patients with LBP often report radiating or referred pain in the lower extremities or neurological symptoms, such as motor weakness or changes in bladder or bowel habits. Obtaining a complete medical history should thus be the first step in evaluating a patient with LBP, including pain description, associated symptoms, previous medical history, and other details. [1]

Treatment	According to the meta-analysis of 23 experimental studies, the effect sizes for different types of treatment were as follows: electrical stimulation (1.065), lumbar stabilization exercise (1.074), kinesio taping combined with lumbar strengthening exercise (1.141), thermotherapy (1.337), stretching (1.432), and sling exercise (2.223). All interventions demonstrated large effect sizes (ES $\geq$ 0.80). [5]
Prognosis	A core component in the management of LBP is education and counseling by the treating physician. Several high-quality trials and guideline reviews have demonstrated the effectiveness of educating and reassuring patients. Patients should be informed of the natural history, expected course, and often favorable outcome of LBP. It should be emphasized that the patient does not have severe disease, that symptoms will improve within several months, and that it is important to stay active, as a low level of physical activity is associated with the development of chronic LBP. [1]
Genetic information	The SNPs with the strongest effect on disc space narrowing, osteophytes, and K-L grade were serine incorporator 1 (rs155467, odds ratio [OR]=17.58, p=1.6×10−4), stromal interaction molecule 2 (STIM1, rs210781, OR=5.53, p=5×10−4), and transient receptor potential cation channel, subfamily C (rs11224760, OR=3.99, p=4.8×10−4), respectively. [6]
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Osteoarthritis

Incidence	NR
Prevalence	Based on 2010–2013 data from the Korean National Health and Nutrition Survey, 7962 adults over the age of 50 who participated. The prevalence of knee osteoarthritis (OA) in this study population was 33.3%. [1]
Mortality	No association was found between the all-cause/cancer mortality and other groups. [2]
Gender	Women had a higher OR than men, with 1.862 (95% CI 1.487–2.331). [1]
Age	In comparison to those in their 50s, OR 2.658 (95% CI 2.290–3.086) was higher in their 60s, and OR 6.384 (95% CI 5.404–7.542) in their 70s. [1]
Regional distribution	The mean age of the participants was higher in rural areas than in urban cities. It was 59 in men in Ulsan city and 64 in men in South Jeolla province. The prevalence of obesity was higher in regions with a higher mean age, except in Daejeon, in which the prevalence of obesity reached 25% in women. The prevalence of radiographic knee OA was higher in regions with a higher mean age and prevalence of obesity, and it was 57.9% and 55.9% in women in South Chungcheong and in Jeju provinces, respectively. In the case of symptomatic radiographic knee OA, the trend of higher prevalence in regions with a higher mean age and prevalence of obesity was more prominent. It reached 36.6% in women in Jeju province, which had the highest mean age and prevalence of obesity. [3]
Clinical phenotypes/ Classification	In terms of gender prevalence rates, based on K–L grade, 0 was 46.8%, 1 grade was 29.8%, 2 grade was 13.4%, 3 grade was 8.0%, and 4 grade was 2.0%. Women's rates were 39.1%, 19.4%, 14.0%, 18.6%, and 8.8%, respectively. [1]
Clinical manifestation	In a cohort study of 3,876 individuals aged 40 years or older in Anseong, the prevalence of clinical knee osteoarthritis was 5.4%, while the frequency of radiographic knee osteoarthritis was 14.9%. In addition, the prevalence of clinical and radiographic hand osteoarthritis was 8.0% and 13.4%, respectively. [4] According to the 5th Korea National Health and Nutrition Examination Survey, the prevalence of clinical hip osteoarthritis in individuals aged 50 years or older was 0.2%, which was significantly lower than that of knee osteoarthritis. The prevalence of radiographic hip osteoarthritis was 1.1%. [5]
Risk factor	The incidence of knee OA was higher with an OR of 1.760 (95% CI 1.375–2.253) at a low level of education than at a high level. Normal BMI compared to low was OR 0.337 (95% CI 0.214–0.531), overweight was OR 1.591 (95% CI 1.333–1.899), and obesity was OR 3.717 (95% CI 2.614–5.285). [1]

Diagnosis	Chronic knee pain or discomfort that persists for several weeks to months, accompanied by worsening pain, stiffness, and limited joint function, strongly suggests the possibility of osteoarthritis. On physical examination, symptoms such as pain during movement, joint line tenderness, crepitus, or swelling may be observed. In the early stages, radiographic findings may not show characteristic changes such as joint space narrowing or osteophyte formation. [6]
Treatment	A common theme across various guidelines is that exercise and weight loss are the primary recommended treatments. As for pharmacotherapy, the top recommendations include topical nonsteroidal anti-inflammatory drugs (NSAIDs) and oral NSAIDs. [7] Since their initial approval in Korea in 2017 for reducing pain through physical restoration of the knee joint, polynucleotides have been consistently used in clinical practice as a medical device. An analysis of the Visual Analog Scale in the entire group analysis revealed a more than 50% reduction of pain vs. pre-administration that was maintained for six months from the end of the Conjuran® treatment. In Clinical Global Impression, 77.8% of patients reported that their symptoms improved after six months from the completion of treatment. In addition, in Patient Global Impression, 75.6% of patients self-evaluated that the symptoms improved after six months from the completion of treatment. [8]
Prognosis	A higher cardiovascular disease mortality was observed in the symptomatic radiographic knee OA (ROA) group, but not in others; the risk estimates were asymptomatic ROA (hazard ratio [HR] 1.12; 95% confidence interval [CI] 0.77–1.65), knee pain (HR 0.61; 95% CI 0.27–1.38), and symptomatic ROA (HR 1.39; 95% CI 0.89–2.17). [2]
Genetic information	The protein product of a candidate risk gene for obesity, TNKS, targets Wnt inhibition, and this gene was significantly associated with hand and knee OA. Copy number deletion on TNKS was associated with a 1.37-fold decreased risk for OA. In addition, CA10, which shows a strong association with osteoporosis, was also significant in our study. Copy number deletion on this gene was associated with a 1.69-fold decreased risk for OA. [9] Of the novel loci reported by the studies, variants mapping to the LMX1B, COL11A1, and IL11 genes were commonly identified. Joint-specific differences in genetic risk was noted and loci near genes involved in skeletal development and/or associated with rare monogenic bone disease was identified, including the TGFβ pathway genes TGFB1, LTBP1, LTBP3, SMAD3, and ROCR long non-coding RNA (lncRNA) that acts upstream of SOX9 during chondrogenic differentiation. [10]

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Psoriatic Arthritis (Arthropathic Psoriasis)

Incidence	The incidence rate per 1,000 patient-years was 5.01 (95% CI 4.68–5.36) in 2020. [1]
Prevalence	An increasing trend in psoriatic arthritis (PsA) prevalence per 1,000 patients was observed; prevalence was 6.17 (95% confidence interval [CI] 5.73–6.65) in 2008 and 19.03 (95% CI 18.39–19.70) in 2020. [1]
Mortality	Disease-specific meta-analysis showed that the pooled sex-standardized mortality ratios (SMRs) was 1.299 (95% confidence interval [CI] 1.092~1.605, p=0.015) for PsA. Meta-analysis showed that the standardized mortality ratios of PsA were significantly higher (1.299 to 1.784 times) than those in the general population. [2]
Gender	The male ratio was 55.1%. [3]
Age	The mean age at the time of PsA diagnosis was 46.7 years. [3]
Regional distribution	The incidence of PsA varied according to region and race, at 6-42% and 1-9% of patients with psoriasis in Caucasians and Asians, respectively. [4]
Clinical phenotypes/ Classification	We compared the clinical characteristics of PsA patients with or without axial involvement: patients with PsA without spondylitis (n = 82, group 1), with psoriatic spondylitis (n = 27, group 2), and as a comparator group, patients with AS with psoriasis (n = 78, group 3). The patients in group 1 (age: 48.8 ± 12 years) were significantly older (P < 0.001) than those in groups 2 (age: 45.3 ± 10.3 years) and 3 (age: 40.8 ± 11.1 years). HLA-B27 was positive in 14%, 21.1%, and 76% of patients in groups 1, 2, and 3, respectively. Peripheral joint involvement was significantly (P < 0.001) more common in group 1 (n = 73, 89%) than in groups 2 (n = 17, 63%) and 3 (n = 26, 33.8%). Significantly fewer syndesmophytes (P < 0.001) were observed in group 1 (n = 2, 4.1%) than in groups 2 (n = 6, 25%) and 3 (n = 29, 38.8%). [5]
Clinical manifestation	Nail changes, enthesitis, dactylitis, and uveitis were observed in 43.5%, 39.1%, 31.9%, and 4.3% of patients with PsA, respectively. According to the Moll–Wright Classification, spondylitis was the most common form, affecting 46.4% of patients, followed by oligoarthritis (44.9%) and polyarthritis (42.0%). There were 2 (2.9%) patients with DIP-only involvement, and no patient had arthritis mutilans. [3]
Risk factor	After adjustments were made, type of patients with psoriasis, use of concomitant therapy (including topical therapy, oral systemic therapy, and phototherapy), mCCI score, autoimmune disease (including uveitis, ankylosing spondylitis, and rheumatoid arthritis), and fatty liver disease were significantly associated with PsA development. [1]

Diagnosis	At the time of diagnosis, the mean age of the patients was 46.7 years (±14.1). The median erythrocyte sedimentation rate was 12.0 mm/h, with a range of 4.0 to 22.5 mm/h. The median C-reactive protein level was 2.0 mg/L, ranging from 0.7 to 6.9 mg/L. [3]
Treatment	The most prescribed disease-modifying antirheumatic drugs in patients with PsA prior to initiation of biologics were methotrexate (90.8%), sulfasalazine (70.6%), leflunomide (18.4%), and cyclosporine (18.4%). The most prescribed biologic agent at enrollment was adalimumab or its biosimilars (n = 44, 40.4%), followed by etanercept or its biosimilars (n = 21, 19.3%), golimumab (n = 15, 13.8%), and secukinumab (n = 14, 12.8%). [5]
Prognosis	The adjusted HR (aHR) of overall cancer in PsA patients was 1.20 (95% CI 1.02 to 1.41). However, this significance disappeared when non-melanoma skin cancer (NMSC) was excluded (aHR 1.16, 95% CI 0.98 to 1.37). Among specific cancers, the risk of NMSC (aHR 3.64 (95% CI 1.61 to 8.23)), lymphoma (aHR 2.63 (95% CI 1.30 to 5.30)) and thyroid cancer (aHR 1.83 (95% CI 1.18 to 2.85)) was higher in patients with PsA than in controls. [6]
Genetic information	HLA-B*27 positivity was confirmed in 22.0% (13/59) of PsA patients. [3]
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Rheumatoid Arthritis

Incidence	The annual total incidence rate was 40.0 in 2016. [1]
Prevalence	Among South Korean adults aged 20 or older, the overall rheumatoid arthritis (RA) prevalence was 1.1%, with a significant difference observed between the following sexes: 0.6% in males and 1.7% in females. [2]
Mortality	According to these data sources, the estimated mortality rate of Korean patients with RA from 1.29% to 1.65%. [3]
Gender	The age-standardized annual incidence rate in males was 16.2–20.4 per 100,000 person-years; in females, 53.6–65.9 per 100,000 person-years. [1]
Age	The sex-standardized incidence rate for those under 40 years old was 6.8–11.9 per 100,000 person-years, and the sex-standardized incidence rate for those in their 40s was 30.5–49.0 per 100,000 person-years. The sex-standardized incidence rate for people in their 50s was 75.3–85.3 per 100,000 person-years. The sex-standardized incidence rate for people in their 60s was 76.8–143.1 per 100,000 person-years, and, for people over 70 years old, it was 54.1–110.9 per 100,000 person-years. [1]
Regional distribution	The number of patients with seropositive rheumatoid arthritis identified through medical institutions in 2023, by region, was as follows: Seoul: 46,263, Busan: 12,874, Incheon: 6,271, Daegu: 10,441. Gwangju: 5,963, Daejeon: 6,752, Ulsan: 2,631, Gyeonggi: 28,177, Gangwon: 3,579, Chungbuk: 3,070, Chungnam: 3,365, Jeonbuk: 5,319, Jeonnam: 3,569, Gyeongbuk: 3,856, Gyeongnam: 6,828, Jeju: 1,492, Sejong: 561. [4]
Clinical phenotypes/ Classification	Recent studies have suggested that seronegative patients to have greater disease activity than seropositive patients when evaluated by ultrasonography scores for joints (median 55 vs. 25, $p< 0.001$) and tendons (median 3 vs. 0, $p<0.001$), by the number of swollen joints (median 17 vs. 8, $p<0.001$), by the Disease Activity Score (mean 3.9 vs. 3.4, $p=0.03$) and by the Physician's Global Assessment (mean 49.1 vs. 38.9, $p=0.006$). [5] When patients were stratified according to their disease activity score in 28 joints, the percentages of patients in remission (<2.6) or with low RA activity (2.6≤ and <3.2), moderate activity (3.2≤ and ≤5.1), or high activity (5.1<) were 20.97% (898/4239), 15.19% (644/4239), 46.87% (1987/4239), and 16.96% (719/4239), respectively. [6]
Clinical manifestation	The mean Health Assessment Questionnaire (HAG) score was 0.69 ± 0.66 (from 0 to 3.00) and the mean EQ-5D score was 0.67 ± 0.27 (from −0.594 to 1.00). The HAQ and EQ-5D got worse with increasing disease activity. [6]

Risk factor	Men with only an elementary school education had approximately 3.44 times higher risk of developing RA than that of college graduates. Additionally, men with a subjective health status classified as “Bad” had a 3.79 times higher risk of developing RA than those rated as “Good”. [2] RA was associated with an increased prevalence of myocardial infarction or angina (OR 1.86, 95% CI 1.17-2.96, p = 0.009), pulmonary tuberculosis (OR 1.95, 95% CI 1.24-3.09, p = 0.004), asthma (OR 1.97, 95% CI 1.05-3.71, p = 0.036), thyroid disease (OR 1.71, 95% CI 1.05-2.77), depression (OR 2.38, 95% CI 1.47-3.85, p < 0.001) and hepatitis B (OR 2.34, 95% CI 1.15-4.80, p = 0.020) compared with the non-RA population. [7]
Diagnosis	Their rheumatoid factor (RF) positivity and anti-citrullinated peptide antibody (ACPA) positivity rates were 86.8% (4,098/4,719) and 83.9% (3,018/3,599), respectively. Meanwhile, recent data from the Korean College of Rheumatology Biologics registry, a nationwide biologics registry, shows that RF positivity and ACPA positivity rates in RA patients on targeted therapy were 87.0% and 86.3%, respectively. [5]
Treatment	Once rheumatoid arthritis is diagnosed, disease-modifying antirheumatic drugs (DMARDs) should be initiated as early as possible. Unless there are specific contraindications, methotrexate (MTX) is the recommended first-line agent, and monotherapy with MTX is generally advised. If treatment goals are not achieved with oral MTX monotherapy, the next step involves either combination therapy with conventional synthetic DMARDs (csDMARDs) or the addition of biologic or targeted synthetic DMARDs. However, according to the 2021 American College of Rheumatology (ACR) treatment guidelines, adding a biologic or targeted synthetic DMARD is preferred over triple csDMARD therapy with hydroxychloroquine (HCQ), sulfasalazine (SSZ), and MTX. [8] * In contrast, under the current Korean reimbursement system, patients are required to undergo combination therapy with csDMARDs first. Only if there is an inadequate response after at least six months of such treatment can biologic or targeted synthetic DMARDs be considered. [8]
Prognosis	Mortality due to infectious diseases (incidence rate ratio [IRR] 4.41, 95% CI 1.60–12.17) and pneumonia (IRR 3.92, 95% CI 1.46–10.53) was significantly higher in the RA than control group. The disability rate was higher in the RA than control group over the first 10 years of the disease (IRR 2.27, 95% CI 1.77–2.92), which was attributed to a higher incidence of physical disability (IRR 3.81, 95% CI 2.81–5.15). [9]
Genetic information	A study identified six new RA-risk loci (SLAMF6, CXCL13, SWAP70, NFKBIA, ZFP36L1 and LINC00158) with pmeta<5×10-8 and consistent disease effect sizes in the two cohorts. [10]

	In analyses using amino acid positions of HLA-DRB1, a significant association was found between valine at amino acid position 11 of SE and good response to abatacept (OR = 6.46, P = 5.4 × 10-3). The VRA haplotype also showed a good response to abatacept (OR = 4.56, P = 0.013), but not to TNFi. [11]
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Neurology

Alzheimer’s Disease

Incidence	The Korean population aged 40 or older has increased gradually, from 19,732,425 in 2006 to 26,219,849 in 2015. The age-standardized incidence of alzheimer’s disease (AD) during this timeframe has increased from 1.83 per 1,000 persons in 2006 to 5.21 per 1,000 in 2015. [1]
Prevalence	The age-standardized prevalence of Alzheimer’s disease increased from 3.17 to 15.75 per 1,000 persons between 2006 and 2015, respectively. [1]
Mortality	In 2023, the mortality rate for Alzheimer’s disease was 21.7, for unspecified dementia 5.4, for vascular dementia 0.7, and for other degenerative diseases of the nervous system 0.3. Among dementia-related deaths in 2023, Alzheimer’s disease accounted for 77.1%, a notable rise from 49.7% in 2013. [2]
Gender	With respect to AD dementia incidence by sex, more females (3,023; 68.5%) than males (1,390; 31.5%) developed AD in 2017. The incidence rate of AD dementia was 3.29 per 1,000 person-years in males and 7.12 per 1,000 person-years in females. [3]
Age	In 2015, the age-specific, sex-standardized incidence of Alzheimer's disease was 0.46 per 1,000 persons in the 65–69-year age group, 2.54 per 1,000 persons in the 75–79-year age group, and 6.88 per 1,000 persons in the 85–89-year age group. [1]
Regional distribution	According to the 2023 National Survey on the Epidemiology and Current Status of Dementia, the prevalence of dementia was significantly higher in rural areas compared to urban areas. Specifically, the prevalence was 9.4% in towns and townships (eup and myeon) versus 5.5% in urban neighborhoods (dong). Similarly, when classified by administrative region, provinces (do) reported a prevalence of 8.5%, compared to 3.8% in metropolitan cities (gwangyeoksi). [4]
Clinical phenotypes/ Classification	Among dementia subtypes, the incidence rate of early onset AD was 0.14 per 1,000 person-years, while the incidence rate of late-onset AD was 4.01 per 1,000 person-years. [3]
Clinical manifestation	NR
Risk factor	The prevalence rate of AD in the subgroup with diabetes mellitus was higher than in those without diabetes mellitus during the study period, showing a stable gap difference. [1] Baseline MCI increased the 5-year incidence of all-cause dementia by more than 4-fold, while old age and low baseline global cognitive function were noted as strong predictors of both all-cause and AD dementia. [5]

	The contribution of the three highest modifiable risk factors (physical inactivity, diabetes, and hypertension) to all-cause dementia was 15.2%, and the contribution of the three highest modifiable risk factors (physical inactivity, diabetes, and depression) to AD dementia was 15.8%. [3]
Diagnosis	According to the Clinical Practice Guidelines for Dementia by the Korean Dementia Association, it is recommended that individuals presenting with neurocognitive complaints, mild cognitive impairment, or dementia undergo diagnostic evaluation based on eight key clinical questions. This approach guides the use of clinical assessments, biomarkers, and neuroimaging to support the screening and diagnosis of dementia. [6]
Treatment	The most representative class of cognitive-enhancing medications is cholinesterase inhibitors. Donepezil (Aricept®) is approved for use in all stages of Alzheimer's disease, while Rivastigmine (Exelon®) and Galantamine (Razadyne®) are used in patients with mild to moderate Alzheimer's disease. Memantine (Namenda®) is approved for use in patients with moderate to severe Alzheimer's disease. [6]
Prognosis	Patients with dementia face an elevated risk of death not only from direct neurodegeneration but also from indirect factors such as pneumonia, malnutrition, and falls. A previous study analyzing Korean data found that the risk of death for elderly individuals diagnosed with dementia was approximately 8.4 times higher than for those with normal cognition. [2]
Genetic information	ROCK2 and MICALL1 variants are associated with AD risk and show differential brain expression in East Asians. [7]
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Amyotrophic Lateral Sclerosis

Incidence	The total number of new patients with amyotrophic lateral sclerosis (ALS) analysed across the 5 years was 3049, with an annual crude incidence per 100 000 inhabitants of 1.20 and an age-adjusted incidence of 0.88. [1]
Prevalence	The crude prevalence rate in 2015 was 3.43 per 100,000 population, whereas the age-adjusted prevalence rate was slightly lower at 2.38. [1]
Mortality	By April 2017, 1635 (53.6%) of the total patients (n=3049) and 470 (65.8%) of subgroup patients (n=714) had died. The mortality was higher among the older age of onset group compared with the younger age of onset group. [1]
Gender	A male-to-female sex ratio of 1.60 was observed, reflecting the higher incidence of ALS in males. [1]
Age	The mean age at the time of diagnosis was 61.4 years, and the male:female ratio was 1.60. The proportion of first-diagnosed patients with ALS were highest at the age of 60–69 years and started to decline at age 70 years. [1]
Regional distribution	Seoul (metropolitan): 978 cases (21.5%), Large city: 1,079 cases (23.7%), Small city: 2,040 cases (44.8%), Rural: 454 cases (10.0%). [2]
Clinical phenotypes/ Classification	Clinical phenotypes of ALS vary depending on the site of symptom onset and the pattern of motor neuron involvement. The most common form is limb-onset ALS, typically beginning in the arms and presenting with a relatively slower progression. In contrast, bulbar-onset ALS, more prevalent among middle-aged and older women, involves early bulbar dysfunction and is associated with a poorer prognosis. [3]
Clinical manifestation	Clinical manifestations include subtle, localized symptoms such as clumsiness in hand movements or slight foot dragging. Bulbar-onset ALS presents with dysarthria, followed by dysphagia and sialorrhea, eventually leading to malnutrition. Cognitive impairment also varies among patients. [3]
Risk factor	Advanced age and smoking are known risk factors for sporadic amyotrophic lateral sclerosis. Smoking has been shown to be associated with the development of ALS based on large-scale cohort studies, which indicate that current smoking status, history of smoking, total duration of smoking, and cumulative smoking amount are all related to increased ALS risk. Other potential risk factors for ALS include intense physical activity, as seen in professional athletes, and exposure to pesticides. [3]
Diagnosis	The diagnosis of amyotrophic lateral sclerosis (ALS) is primarily based on a detailed clinical history and neurological examination demonstrating progressive upper and

	lower motor neuron signs. Electrophysiological studies, including nerve conduction studies and electromyography (EMG), also play a crucial role in the diagnostic process. To improve diagnostic accuracy and ensure consistency in clinical research, several diagnostic criteria have been proposed by ALS researchers. Among these, the El Escorial criteria, revised in 2000, remain the most widely used standard for ALS diagnosis. [3]
Treatment	Although there is currently no cure or treatment capable of halting the progression of amyotrophic lateral sclerosis, various therapeutic approaches have been proposed through extensive research that may modestly prolong survival and improve quality of life. These include the use of neuroprotective agents, non-invasive ventilatory support, percutaneous endoscopic gastrostomy, and multidisciplinary care. Riluzole is the only medication approved by the U.S. Food and Drug Administration for the treatment of ALS. [3] Riluzole was prescribed to 53.6% of all patients. The rate of patients undergoing a tracheostomy during the follow-up period was 20.3% and did not differ by age, sex, income level or region except for a decreased rate of riluzole prescription in individuals who experienced ALS onset at a young age (<40 years). [1]
Prognosis	The mean diagnostic delay among 299 ALS patients treated at Hanyang University Hospital was 11.66 ± 8.91 months. Using this delay, the corrected survival time was estimated to be 50 months overall and 49.7 months from symptom onset. The average duration from diagnosis to tracheostomy was 9.5 months. [1]
Genetic information	The most common mutation in the European ALS population, the C9orf72 mutation, was absent in the Korean population. Common genes including C9orf72, TARDBP and OPTN have not been found in familial and sporadic Korean patients with ALS. [1] However, a study conducted in 2023 identified four patients with a pathogenic missense variant in TARDBP (c.1009A>G; p.M337V) in Korea population. [4] In a Korean population, mutations were investigated in four index patients with familial ALS and 148 patients with sporadic ALS. Four previously known mutations were identified in the SOD1, ALS2, MAPT, and SQSTM1 genes, respectively. [5]
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Cerebral Palsy

Incidence	The 4-years incidence of cerebral palsy (CP) decreased significantly from 4.77(2007) to 2.52(2015) per 1000 babies during the study period. [1]
Prevalence	The prevalence of CP in South Korea was 2.6 per 1000 children. [2]
Mortality	The mortality rate in 2015 was 0.2/100,000 populations. [3]
Gender	The 5-year CP incidence was 1.3 times higher in male than in female children ($p<0.05$). [4]
Age	Based on the characteristics of the subjects (n=773), the mean age at the time of data entry was 5.40 years with a standard deviation of 3.57 years, ranging from 1 to 23 years. [5]
Regional distribution	The distribution of subjects by administrative division is as follows: Seoul: 110 (14.2%), Busan: 33 (4.3%), Daegu: 31 (4.0%), Incheon: 12 (1.6%), Gwangju: 49 (6.3%), Daejeon: 28 (3.6%), Ulsan: 10 (1.3%), Sejong: 1 (0.1%), Gyeonggi: 271 (35.1%), Gangwon: 16 (2.1%), North Chungcheong: 7 (0.9%), South Chungcheong: 37 (4.8%), North Jeolla: 62 (8.0%), South Jeolla: 16 (2.1%), North Gyeongsang: 18 (2.3%), South Gyeongsang: 23 (3.0%), Jeju: 32 (4.1%), Unknown: 17 (2.2%), Total: 773 (100%). [5]
Clinical phenotypes/ Classification	The distribution of CP Classification was 87.32%, 5.17%, and 1.81% for spastic, dyskinetic, and ataxic type, respectively, which is similar to previous reports published. [5]
Clinical manifestation	Physical symptoms vary widely, ranging from severe spasticity and inability to move to the ability to walk or move with relative independence. [6] The most severe functional disabilities in terms of Gross Motor Function Classification System (GMFCS) were observed in dyskinetic CP, as compared to other types of CP. Around 50% of the subjects had GMFCS score 1 and II (51.5%) and Manual Ability Classification System (MACS) I and II (44.9%). Language delay, ophthalmologic impairment and intellectual disability were the three most common accompanying impairments of subjects with CP. [5]
Risk factor	The risk of developing CP was 29.5 times higher in preterm infants born before 28 weeks of gestational age, 24.5 times higher in infants born between 28 and 34 weeks, and 4.5 times higher in infants born between 34 and 36 weeks, compared to full-term appropriate for age (2.5 ~ 4 kg of body weight) infants. [1] The frequency of advanced maternal age, hypertension, and diabetes before and during pregnancy, diabetes mellitus before pregnancy, cesarean delivery, gestational

	hypertension, gestational diabetes mellitus requiring insulin treatment, chorioamnionitis, premature rupture of membrane, oligo- and polyhydramnios, preterm birth, low birth weight, male sex, and large for gestational age was higher in the group diagnosed with CP than in the controls. [1] Postnatal CP was reported to be 15.27%, where hypoxic ischemic encephalopathy was the most common event. [5]
Diagnosis	Brain magnetic resonance imaging (MRI) with normal findings, malformations and non-malformations were found in 10.62%, 9.56%, and 77.35% of subjects, respectively. Among brain MRI findings with non-malformation, periventricular leukomalacia was found in 70.71% (309 out of 437 subjects). [5]
Treatment	The study revealed that annual physical therapy, occupational therapy, hydrotherapy, and botulinum toxin injection cost per person increased over time. On the other hand, the number of orthopedic surgery and selective dorsal rhizotomy was reduced. The total cost of treatment per person showed a tendency of increase for all age groups. Botulinum toxin injection treatment was most frequently performed for the 0–6 years age group. Observing orthopedic surgery patterns according to age groups revealed that more orthopedic surgeries were performed for the 7–18 years age group of CP patients. It was observed that dorsal rhizotomy was performed very rarely in all age groups. It was most commonly performed for the 7–18 years age group. [7]
Prognosis	Subjects with normal MRI findings had better functional ability than subjects with other MRI findings. Additional technologies, such as diffusion tensor imaging, may show further pathology responsible for CP. [5]
Genetic information	This study identified three copy number variations, including 15q11.2 microdeletion (n = 1), 17p11.2 duplication (n = 1), and 12p13.33p11.23 duplication/18p11.32 microdeletion (n = 1), and six likely pathogenic variants or pathogenic variants detected in the SLC2A1, PLAA, CDC42BPB, CACNA1D, ALG12, and SACS genes (n = 6).[8]
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Diabetic Peripheral Neuropathy

Incidence	In a Korean cohort of newly diagnosed type 2 diabetes patients, the incidence of diabetic neuropathy as the first chronic complication was 15.1% over the study period (2002–2015). [1]
Prevalence	The prevalence of diabetic neuropathy (DN) was 24.9% among adult (≥30-year-old) patients with diabetes in 2006, peaked at 26.6% in 2007, and then consistently and gradually declined to 20.8% in 2015. [2] The prevalence rate of diabetic neuropathy has been reported to range from 8% to 63% in type 1 diabetes and from 13% to 51% in type 2 diabetes. A recent multicenter study reported a prevalence rate of diabetic neuropathy in Korea of approximately 43%. [3]
Mortality	NR
Gender	Women consistently had a 3% to 4% higher prevalence than men throughout the study period; in 2015, the prevalence was 19.5% in men and 22.4% in women. [2]
Age	Prevalence tended to increase with age, though it was greater in those aged 70 to 79 years than in those aged ≥80 years. The prevalences of DN in those aged 70 to 79 years and 30 to 39 years were 25.7% and 11.9%, respectively. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	The most commonly used Classification of diabetic neuropathies is as follows; Classification of diabetic neuropathies Symmetric diabetic neuropathy: Distal symmetric sensory neuropathy, Diabetic small fiber neuropathy, Diabetic autonomic neuropathy, Treatment-induced neuropathy of diabetes Asymmetric or focal diabetic neuropathy: Cranial neuropathy, Truncal radiculopathy, Radiculoplexus neuropathy. [3]
Clinical manifestation	Distal sensorimotor polyneuropathy (DSPN) is the most common phenotype among the various types of diabetic neuropathy. DSPN usually begins 5 to 10 years after diagnosis

	of diabetes, beginning at the distal part of the legs symmetrically and gradually progressing to the more proximal parts showing a “glove-and-stocking” pattern. Loss of small sensory fibers (Aδ and C-fibers) induces burning or lancinating pain with various symptoms or signs of autonomic dysfunction. This small fiber involvement causes painful diabetic neuropathy, which is seen in 25% of patients with DSPN. [3]
Risk factor	The Korean Diabetes Association clinical practice guidelines recommend strict glycemic control in both type 1 and type 2 diabetes to delay the onset and progression of peripheral neuropathy and cardiovascular autonomic neuropathy. Weight management is considered an attractive strategy for managing diabetic peripheral neuropathy from the perspective of metabolic syndrome. Exercise has been reported to delay the onset and progression of diabetic peripheral neuropathy, independently of glycemic or weight control. While GLP-1 (glucagon-like peptide-1) receptor agonists and SGLT2 (sodium glucose cotransporter 2) inhibitors have shown potential benefits for neuropathy in diabetic animal models, further research is needed. [4]
Diagnosis	The most widely accepted diagnostic criteria for typical DSPN were proposed at the International Symposium on Diabetic Neuropathy (Toronto, 2009). They proposed the minimal diagnostic criteria for typical DSPN as follows: Possible DSPN: Neuropathic symptoms (e.g., decreased sensation, positive sensory symptoms) or signs (e.g., symmetric distal sensory loss or reduced/absent ankle reflexes) in the toes, feet, or legs. Probable DSPN: A combination of symptoms and signs of neuropathy. Confirmed DSPN: Abnormal nerve conduction studies (NCS) with symptoms and signs; if NCS is normal, validated measures of small fiber function may be used. Subclinical DSPN: No symptoms or signs, but confirmed by NCS or other validated tests [3]
Treatment	Over the 10-year study period, the pharmacological prescription rate ranged between 66.5% and 69.0%. Monotherapy accounted for 91.6% of all prescriptions in 2015. Of the several classes of drugs prescribed, thioctic acid was administered most. Notably, the prescription of anti-convulsive agents consistently increased during the study period, whereas the prescriptions of thioctic acid and tricyclic antidepressants gradually decreased. [2] * Capsaicin is a transient receptor potential vanilloid 1 (TRPV1) receptor agonist, and the 8% capsaicin patch (QUTENZA®) has been reported to be effective for painful peripheral neuropathy in randomized controlled trials and meta-analyses. Emerging treatment approaches include transcutaneous electrical nerve stimulation (TENS) and nanotechnology-based therapies. [4] However, such therapies are rarely used or not widely reflected in Korean clinical guidelines.

Prognosis	Usual gait speed had a significant negative correlation with the severity of peripheral neuropathy (rho=−0.249, p=0.013). activity of daily living difficulty was comparatively more frequent in the patients with more severe peripheral neuropathy (p=0.031). [5]
Genetic information	While these findings are not derived from Korean populations, international Meta-analysis showed that VEGF 936 C/T polymorphism was associated with a decreased risk of diabetic peripheral neuropathy (odd ratio 0.63; 95% confidence interval: 0.49–0.81; p = 0.0004). [6]
References	[1] Factors Related to the Occurrence and Number of Chronic Diabetic Complications in Patients with Type 2 Diabetes Mellitus: Utilizing The National Health Insurance Service-National Health Screening Cohort in Korea, 2002~2015, J Korean Gerontol Nurs. 2022;24 (1): 22-32. [2] Status of Diabetic Neuropathy in Korea: A National Health Insurance Service-National Sample Cohort Analysis (2006 to 2015). Diabetes Metab J. 2021;45(1):115-119. [3] Clinical spectrum and diagnosis of diabetic neuropathies. Korean J Intern Med. 2020 Sep;35(5):1059-1069. [4] Pathogenesis and Treatment of Diabetic Peripheral Neuropathy, J Korean Diabetes. 2022;23(4):222-229. [5] Comparison of Gait Speed and Peripheral Nerve Function Between Chronic Kidney Disease Patients With and Without Diabetes. Ann Rehabil Med. 2017;41(1):72-79. [6] VEGF Gene Polymorphisms in Diabetic Peripheral Neuropathy: A Systematic Review and Meta-analysis. Gene Expr. 2024;23(1):69-81.

Narcolepsy

Incidence	The incidence of definite narcolepsy was 1.3/100,000 in 2019. [1]
Prevalence	The prevalence of definite narcolepsy was 8.4/100,000 in 2019. [1]
Mortality	NR
Gender	The prevalence was higher in males, with a relative risk of 1.72. [1]
Age	According to age, the highest prevalence (32/100,000) was observed in both males and females aged 15–19 years, followed by those aged 20–24 and 25–29 years. [1]
Regional distribution	The incidence rate and standardized incidence ratios adjusted for age were highest in Seoul (SIR=1.65), followed by Gyeonggi (1.16) and Chungbuk (1.12), and were the lowest in Jeonnam (0.33) and Gwangju (0.40). [1]
Clinical phenotypes/ Classification	There are two major narcolepsy types, narcolepsy type 1 (NT1) and narcolepsy type 2 (NT2); the former being characterized by the presence of cataplexy episodes and low or absent cerebrospinal fluid (CSF) orexin concentrations. Owing to variability and extent of symptoms at presentation, narcolepsy is difficult to recognize and can take years to be accurately diagnosed. The overall prevalence (95 % CI) of NT2 was greater than NT1 (23.3 [11.3–35.3]/100,000 vs. 19.1 [8.2–30.0]/100,000), driven by North America (26.6 [4.1–49.1]/100,000 vs. 15.8 [0.0–33.2]/100,000) and Northern Europe (26.9 [0.0–52.7]/100,000 vs. 21.9 [0.0–52.7]/ 100,000); similar proportions of NT1 and NT2 cases were identified in South Korea and in Western and Southern Europe. [2]
Clinical manifestation	Narcolepsy is characterized by excessive daytime sleepiness and cataplexy, as well sleep-related symptoms including hypnagogic hallucinations, sleep paralysis, and disturbed nighttime sleep. [1] Forty-one patients (52.6%) were diagnosed with narcolepsy with cataplexy. All exhibited excessive daytime sleepiness as the first symptom. In the multiple sleep latency test (MSLT), short sleep latency and more than 3 episodes of mean sleep onset of rapid eye movement were observed. The coexisting sleep disorders varied according to age of onset. The patients with cataplexy had higher scores on the Epworth Sleepiness Scale and shorter mean sleep latencies in the MSLT than those without cataplexy ($P<0.05$). [3]
Risk factor	Narcolepsy is influenced by both environmental and genetic factors. Accordingly, it is not uncommon for patients with narcolepsy to have family members who also experience excessive daytime sleepiness. Environmental triggers may include psychological stress, influenza infection, disruptions in circadian rhythms (such as reversed day-night schedules), and head trauma. [4]

Diagnosis	The diagnosis of narcolepsy type 1 requires a history of excessive daytime sleepiness and one of the following : 1) a low cerebrospinal fluid hypocretin-1 level or 2) cataplexy and a positive multiple sleep latency test result. The diagnosis of narcolepsy type 2 requires a history of excessive daytime sleepiness and a positive mean sleep-latency test result. [4] Although the onset of narcolepsy typically occurs during adolescence or early adulthood, those affected may not have a confirmed diagnosis until they reach their mid-twenties owing to diagnostic delays; as a result, the prevalence reported by Shin et al. (2008) may underestimate the overall prevalence in the adult population of South Korea. [2]
Treatment	The primary treatment for narcolepsy is pharmacological, and it is typically divided into management of excessive daytime sleepiness and cataplexy. For excessive daytime sleepiness, central nervous system stimulants are commonly used. Representative medications include short-acting formulations of methylphenidate, as well as modafinil and armodafinil. For cataplexy, sleep paralysis, and hypnagogic hallucinations, antidepressants that suppress REM sleep are used. Venlafaxine, which increases both serotonin and norepinephrine levels, is widely used due to its proven efficacy. Other medications that are currently used effectively in Korea include clomipramine and fluoxetine. [4] * In addition, pitolisant, a medication that enhances histaminergic activity to promote wakefulness, has been developed and is currently in use in regions such as Europe. More recently, medications that activate hypocretin signaling have been developed and are undergoing clinical trials. [4]
Prognosis	There are relatively few studies on the clinical course and prognosis of narcolepsy. However, based on several existing studies, narcolepsy with cataplexy is generally considered a chronic condition with little likelihood of remission. Although excessive daytime sleepiness and cataplexy can be effectively managed with central nervous system stimulants and antidepressants, symptom improvement without medication is uncommon. In contrast, for narcolepsy without cataplexy, although findings vary across studies, some reports suggest that approximately one-third of patients experience symptom improvement—enough to tolerate daytime sleepiness without medication—within five years after diagnosis. [4]
Genetic information	Genetic factors associated with narcolepsy include the HLA-DR2 and HLA-DQB106:02 alleles. The HLA-DQB1 gene has been implicated not only in narcolepsy but also in the development of other autoimmune diseases such as type 1 diabetes. Among these, the HLA-DQB106:02 allele is particularly associated with cataplexy. In patients carrying this allele, it is believed that autoimmune responses may lead to the destruction of hypocretin-producing neurons in the brain, resulting in decreased hypocretin levels, which is considered one of the underlying mechanisms of narcolepsy. [4]

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Parkinson's Disease

Incidence	The annual incidence of Parkinson's Disease (PD) was between 22.4–27.8 cases per 100,000 individuals. [1]
Prevalence	The age- and gender-standardized prevalence of PD increased from 115.9 cases per 100,000 individuals in 2010 to 139.8 cases per 100,000 individuals in 2015. [1] According to disease statistics from the National Health Insurance Service (NHIS), the number of Parkinson's disease patients in Korea increased approximately 2.5 times over a decade, from 39,265 in 2004 to 96,499 in 2016. [2]
Mortality	Over the 10 year follow-up period, the PD cohort's mortality rate was 2.5 times higher than the comparison cohort. [3]
Gender	The female-to-male ratio in the incidence of PD was 1.4:1 while the female-to-male ratio in the prevalence of PD was 1.6:1. [1]
Age	From 2014, the incidence and prevalence of PD peaked in individuals aged between 80 and 89 years in both men and women. [1] In the study, PD rarely developed before 50 years old, and the incidence increased sharply in patients in their 60s. The number of PD cases was highest in both male and female patients in their 70s during the entire study period. [1]
Regional distribution	Gyeongbuk and Jeonbuk experienced the largest increase in the incidence of PD from 2010 to 2015. The incidence ratios (2010 to 2015) of these two regions were 1.6 and 1.5, respectively. The highest incidence of PD was recorded in Jeju (31.7 cases per 100,00 individuals) in 2010 and Jeonbuk (38.1 cases per 100,00 individuals) in 2015. [1]
Clinical phenotypes/ Classification	A representative method for sub-classifying Parkinson's disease based on motor symptoms is the division into tremor-dominant (TD) and postural instability and gait difficulty (PIGD) types. Scores for tremor and postural instability symptoms can be calculated using items from the Unified Parkinson's Disease Rating Scale (UPDRS). According to this Classification, the TD group is generally reported to have a slower disease progression and a more favorable clinical course compared to the PIGD group. In contrast, the PIGD group tends to show a more rapid decline in cognitive function. [4] Among 65 patients with Parkinson's disease whose predominant symptom was tremor, only 26 (40%) were found to have Parkinson's disease dementia. In contrast, among 52 patients whose predominant symptom was postural instability and gait disturbance, 37 (71.2%) were confirmed to have dementia. Regarding general cognitive function, the Clinical Dementia Rating (CDR) and the Sum of Boxes (SOB) score of the CDR were significantly higher in the group with postural and gait disturbances. [5]

Clinical manifestation	In 2017, the Korean Movement Disorder Society conducted a survey of 857 individuals, including 702 Parkinson's disease patients, 151 caregivers, and 4 non-respondents. The results showed that patients experienced the greatest difficulty in the physical domain, with 29% responding "very difficult" and 39% "difficult." This was followed by the psychological domain (23% "very difficult," 37% "difficult") and the socio-economic domain (20% "very difficult," 32% "difficult"). Within the physical domain, the most commonly reported difficulty was "limited physical activity" (77%), followed by "deterioration of physical abilities" (38%). In the psychological domain, "frustration and stress due to physical limitations" (56%) was identified as the most challenging aspect, indicating a high level of psychological burden resulting from restricted mobility. In the socio-economic domain, "social isolation" (38%) and "concern about others' perceptions" (34%) were the most frequently cited difficulties, reflecting the challenges patients face due to low public awareness and social stigma surrounding the disease. [2]
Risk factor	Parkinson's disease shows a higher prevalence in older adults, particularly among women, and its prevalence is approximately four times higher in individuals with cerebrovascular disease or dementia compared to the general elderly population. [6].
Diagnosis	Due to the degenerative nature of Parkinson's disease, it is often difficult to clearly determine its incidence and prevalence, as the onset of the disease is frequently ambiguous. In many cases, patients are unaware of the specific time of onset, and when symptoms such as mild motor slowing occur, they may not recognize them as signs of the disease. [2] A nationwide survey conducted with 857 Parkinson's disease patients and their caregivers at major university hospitals in Korea revealed that it took an average of 9.4 months from the onset of symptoms to the first hospital visit. One in four patients (26%) sought medical attention only after more than one year had passed since symptom onset. [4]
Treatment	Research and development of antiparkinsonian medications for the treatment of Parkinson's disease are still actively ongoing. Among the drugs that have sufficient scientific evidence and clinical experience, the following are commonly used: levodopa, dopamine agonists, monoamine oxidase B (MAO-B) inhibitors, catechol-O-methyltransferase (COMT) inhibitors, anticholinergic agents, and amantadine. Once a decision has been made to initiate pharmacologic treatment, the severity of clinical symptoms is typically the primary factor to consider. For patients with mild Parkinson's symptoms, monotherapy with MAO-B inhibitors, amantadine, or anticholinergic agents may be an appropriate starting option. In contrast, for patients with moderate to severe symptoms, treatment may begin with levodopa or dopamine agonists from the outset. In patients whose symptoms are not adequately controlled with pharmacologic treatment or who experience severe long-term side effects, surgical interventions such

	as deep brain stimulation may be considered. Recently, focused ultrasound surgery is being explored as a novel therapeutic option. [7]
Prognosis	Comorbidities, such as ischaemic stroke [odds ratios (OR) = 2.314), haemorrhagic stroke (OR = 2.281) and chronic obstructive pulmonary disease (OR = 1.307) were associated with increased mortality, whereas dyslipidemia (OR = 0.285) was negatively correlated with mortality. [3]
Genetic information	Nine single nucleotide polymorphisms including four in the SNCA locus and three from the PARK16 locus were associated with PD in Koreans. The rs34778348 in the LRRK2 locus showed a strong association, though failed to pass cluster quality control. [8] The study recruited 70 patients with EOPD from 4 hospitals in Korea, and 12 PARK genes were screened via multi-gene panel sequencing. they found 20 rare variants (2 in SNCA, 2 in PRKN, 6 in LRRK2, 3 in PINK1, 1 in DJ1, 4 in FBX07, 1 in HTRA2, and 1 in EIG4G1) in 20 subjects regardless of heterogeneity. Two pathogenic variants (SNCA in 2 subjects and DJ1 in one) were from 3 subjects, and 7 likely pathogenic variants (SNCA, LRRK2, FBXO7, and 2 in PINK1 and PRKN) from 7. [9]
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Oncology

Bladder Cancer

Incidence	The number of newly diagnosed bladder cancer increased by 116.5% from 2,195 in 1999 to 4,753 in 2020. The crude incidence rate per million population increased by 98.9% from 46.54 in 1999 to 92.56 in 2020. [1]
Prevalence	In 2022, the 5-year prevalence of bladder cancer in Korea was 37.8 per 100,000 population, with a total of 19,376 prevalent cases reported. [2]
Mortality	There were 1,159 males deaths from bladder cancer, which was outside the top 10 for cancer deaths. There were 375 deaths from bladder cancer in females, outside the top 10 for females cancer deaths. [1] Between 2018 and 2022, the 5-year relative survival rate for bladder cancer in Korea was 77.8%. [2]
Gender	Among the 5-year prevalent cases of bladder cancer in 2022, 15,875 (81.9%) were male and 3,501 (18.1%) were female. [2]
Age	As of 2022, the number of 5-year prevalent cases of bladder cancer by age group was as follows: 0–4 years: 0; 5–9 years: 2; 10–14 years: 0; 15–19 years: 0; 20–24 years: 8; 25–29 years: 18; 30–34 years: 40; 35–39 years: 69; 40–44 years: 160; 45–49 years: 370; 50–54 years: 716; 55–59 years: 1,237; 60–64 years: 2,317; 65–69 years: 2,986; 70–74 years: 3,217; 75–79 years: 3,218; 80–84 years: 2,936; 85 years and older: 2,082. [2]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 18,753 cases (37.8%), Busan: 3,405 cases (6.9%), Incheon: 2,128 cases (4.3%), Daegu: 3,027 cases (6.1%), Gwangju: 1,206 cases (2.4%), Daejeon: 1,267 cases (2.6%), Ulsan: 631 cases (1.3%), Gyeonggi: 9,050 cases (18.2%), Gangwon: 1,148 cases (2.3%), Chungbuk: 959 cases (1.9%), Chungnam: 1,083 cases (2.2%), Jeonbuk: 1,419 cases (2.9%), Jeonnam: 1,748 cases (3.5%), Gyeongbuk: 997 cases (2.0%), Gyeongnam: 2,453 cases (4.9%), Jeju: 331 cases (0.7%), Sejong: 84 cases (0.2%). [3]
Clinical phenotypes/ Classification	The mean age of the patients was 65.1 ± 11.2 years. FOXA1 or CK14 expression greater than 1% was respectively positively and negatively correlated with overall survival (OS; $p = 0.011$ and $p = 0.042$, respectively), cancer-specific survival (CSS; $p = 0.050$ for both), and recurrence-free survival (RFS; $p = 0.018$ and $p = 0.040$, respectively). For CK5/6+ and GATA3- or FOXA1- expression, 10% CK5/6+ cells were negatively correlated with OS ($p = 0.032$ and $p = 0.039$, respectively) and with RFS in combination with FOXA1- only ($p = 0.050$). [4]
Clinical manifestation	The most common initial presenting symptom was gross hematuria (70%), and 67 patients (12%) were diagnosed while asymptomatic. [5]

Risk factor	Based on data from the International Agency for Research on Cancer (IARC) and the World Health Organization (WHO), the incidence of bladder cancer seems to reflect the smoking rate. [1]
Diagnosis	The primary tumor sites were the upper tract (e.g., renal pelvis or ureter) in 17% of the patients and the bladder in 81% of the patients. Initial disease staging was observed for 332 patients of superficial urothelial carcinoma, 193 patients of localized urothelial carcinoma; and 32 patients of initially metastatic urothelial carcinoma. [5] Among the 1099 participants, 614 (55.9%) were male; participants had a mean age of 65 (10) years. Of the 1099 participants, 219 and 176 participants had bladder cancer and high-grade or invasive bladder cancer, respectively. The urinary DNA methylation test had sensitivity and specificity for high-grade or invasive bladder cancer of 89.2% (95% CI, 84.6%-93.8%) and 87.8% (95% CI, 85.6%-89.9%), respectively. [6]
Treatment	Of 6134 patients, 1379 underwent adjuvant chemotherapy and 389 underwent neoadjuvant chemotherapy. The utilization rate of neoadjuvant chemotherapy increased from 6.4 to 12.2% from 2004 to 2016 ($p = 0.018$). The administration rate and number of granulocyte colony-stimulating factor cycles were lower in the neoadjuvant chemotherapy group than in the adjuvant chemotherapy group ($p < 0.001$ and $p = 0.027$, respectively). After propensity score matching, the neoadjuvant chemotherapy group had significantly better overall survival than the adjuvant chemotherapy group ($p = 0.004$). [7]
Prognosis	Resilience ($\beta=.36$, $p<.001$), fear of cancer recurrence ($\beta=-.33$, $p<.001$), presence of metastases ($\beta=-.22$, $p<.001$), social support ($\beta=.19$, $p=.004$), and age ($\beta=-.16$, $p=.003$) were identified as the factors affecting Health-related quality of life. [8] The prognosis was compared between two groups: old patients (aged 70–79) and oldest-old patients (aged 80 and above). Both groups showed similar 30-day complication rates (59.3% vs. 60.3%, p=0.210). K-M showed 3-year survival rate, recurrence-free survival was shorter in oldest-old group (41.4% vs. 56.7%) but not statistically different (p=0.063). Oldest-old group showed similar 3-year cancer-specific survival (78.1% vs. 74.6%, p=0.779) but worse overall survival (51% vs. 58%, p=0.047) compared with the old group. [9]
Genetic information	The combined CT/TT genotypes were associated with a significantly increased risk of bladder cancer (odds ratio [OR] CT/TT: 1.58, 95% confidence interval [CI] : 1.15-2.17), compared to that for the CC genotype. Smoking habits, tumor grade and tumor stage did not modify the association between rs2294008 and the risk of bladder cancer. [10] The basal group, which responds well to chemotherapy, exhibits features of sarcomatoid carcinoma and shows overexpression of epidermal growth factor receptor 3 (EGFR3). In contrast, the luminal subtype, which is resistant to chemotherapy, shows

	overexpression of fibroblast growth factor receptor 3 (FGFR3) and epidermal growth factor receptors (ERBB2 and ERBB3). [11]
References	[1] Twenty-two-year incidence trend of urological cancers in the Republic of Korea: 1999–2020. Investig Clin Urol. 2024 Jan;65(1):23-31. [2] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [3] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD).* https://www.koicd.kr/main.do. 2023. [4] Clinical outcomes of muscle invasive bladder Cancer according to the BASQ Classification. BMC Cancer 19, 897 (2019). [5] Clinical Characteristics, Treatment Delivery, and Cisplatin Eligibility in Korean Patients Initially Diagnosed with Urothelial Carcinoma. Ewha Med J. 2021;44(3):63-69. [6] Urinary DNA Methylation Test for Bladder Cancer Diagnosis. JAMA Oncol. 2025;11(3):293–299. [7] Neoadjuvant versus adjuvant chemotherapy in bladder cancer: a nationwide cohort study. J Cancer Res Clin Oncol. 2022;148(11):3135-3144. [8] Factors Affecting the Health-Related Quality of Life of Patients with Bladder Cancer. Journal of Korean Public Health Nursing 2024, 38(3), 358-370. [9] Comparison of Perioperative and Oncologic Outcome Between Old Versus Oldest Old After Radical Cystectomy for Bladder Cancer. Journal of Urologic Oncology. 2022; 20(3) 186-196. [10] Genetic Variation in PSCA is Associated with Bladder Cancer Susceptibility in a Korean Population. Asian Pac J Cancer Prev. 15(20): 8901-8904 [11] Developing Biomarkers and New Therapeutic Targets in Muscle Invasive Bladder Cancer, J Urol Oncol. 2020;18(1):1-10.

Brain and CNS Tumor

Incidence	In 2022, the crude incidence rate of Brain and CNS Tumor in Korea was 4.2 per 100,000 population, with a total of 2,163 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of Brain and CNS Tumor in Korea was 11.0 per 100,000 population, with a total of 5,658 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for Brain and CNS Tumor in Korea was 40.2%. [1]
Gender	Among the 5-year prevalent cases of brain and central nervous system cancers in 2022, 2,944 (52.0%) were male and 2,714 (48.0%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of brain and CNS tumors by age group was as follows: 0–4 years: 76; 5–9 years: 181; 10–14 years: 158; 15–19 years: 178; 20–24 years: 186; 25–29 years: 206; 30–34 years: 260; 35–39 years: 315; 40–44 years: 391; 45–49 years: 426; 50–54 years: 490; 55–59 years: 541; 60–64 years: 618; 65–69 years: 560; 70–74 years: 383; 75–79 years: 325; 80–84 years: 239; 85 years and older: 125. [1]
Regional distribution	Seoul: 327 cases (18.4%), Busan: 153 cases (8.6%), Daegu: 82 cases (4.6%), Incheon: 98 cases (5.5%), Gwangju: 45 cases (2.5%), Daejeon: 62 cases (3.5%), Ulsan: 39 cases (2.2%), Sejong: 7 cases (0.4%), Gyeonggi: 376 cases (21.2%), Gangwon: 59 cases (3.3%), Chungbuk: 63 cases (3.5%), Chungnam: 92 cases (5.2%), Jeonbuk: 73 cases (4.1%), Jeonnam: 69 cases (3.9%), Gyeongbuk: 98 cases (5.5%), Gyeongnam: 109 cases (6.1%), Jeju:24 cases (1.4%). [2]
Clinical phenotypes/ Classification	Among the 133 reported events, 104 cases (78.2%) were located in the brain parenchyma, 16 cases (12%) in the meninges, and 13 cases (9.8%) in other parts of the central nervous system. [3] Among Malignant Central Nervous System Germ Cell Tumor patients, approximately 65.4% of GCTs were located outside the pineal region, while the rest were located in the pineal region. The majority (76.0%) of tumors were categorized as germinomas. [4]
Clinical manifestation	A global search identified 2.074 unique papers, of which 32 were included in this review. In total 25 symptoms were identified. The ten most prevalent symptoms were: seizures (37%), cognitive deficits (36%), drowsiness (35%), dysphagia (30%), headache (27%), confusion (27%), aphasia (24%), motor deficits (21%), fatigue (20%) and dyspnea (20%). [5]
Risk factor	Epidemiological studies consistently cited increased tumor incidence in pediatric patients (ages 0–18) exposed to head CTs. Excess relative risk of new brain tumor

	averaged 1.29 (95% confidence interval, 0.66–1.93) for pediatric patients exposed to one or more head CTs. [6]
Diagnosis	Neuroepithelial tumors accounted for 1,896 cases (12.2%). The most common subtype was glioblastoma, with 841 cases (5.4%), followed by malignant glioma, not otherwise specified (NOS), with 266 cases (1.7%). Of the total PCNSTs, 6,533 were histopathologically confirmed, yielding an overall confirmation rate of 42%. Chordoma/chondrosarcoma (100%), embryonal tumors (93.9%), and germ cell tumors (89.8%) had some of the highest confirmation rates. By contrast, tumors of the pituitary (45.8%), nerve sheath tumors (40.4%), and meningioma (30.9%) had relatively low confirmation rates. Gliomas had a confirmation rate of 81.5%, with 1,313 of 1,612 cases confirmed. Among the gliomas, glioblastoma had the highest number of confirmed cases, with 768 of 841 (91.3%). [7]
Treatment	For patients with World Health Organization (WHO) grade 2, KPS ≥60, and low risk, the majority of responses (85.7%) favored observation. For patients with WHO grade 2, KPS ≥60, and high risk, radiotherapy alone was the preferred treatment for 81% of responses, while radiotherapy with adjuvant PCV (procarbazine, lomustine, and vincristine) or radiotherapy with concurrent and adjuvant temozolomide (TMZ) each were preferred by 4.8%. For patients with WHO grade 3 or 4 and KPS ≥60, radiotherapy with concurrent and adjuvant TMZ was the most favored treatment, with 42.9% of responses. Radiotherapy with adjuvant TMZ was the second most favored with 38.1% of responses, followed by radiotherapy with adjuvant PCV with 14.3% of responses. For patients with KPS <60 regardless of WHO grade, best supportive care alone was favored by 66.7% of responses. [8]
Prognosis	The mortality rates were lower in female than that of male patients (hazard ratio, 0.69; 95% confidence interval, 0.67-0.71), and in younger age population and in higher income group. Patients operated had a slightly higher survival rate. [9]
Genetic information	High-grade pediatric gliomas differ from those of adult gliomas, consisting of mutations in H3F3A, ATRX, and DAXX, but not in IDH. In contrast, well-circumscribed low-grade neuroepithelial tumors in children, such as pilocytic astrocytoma, pleomorphic xanthoastrocytoma, and ganglioglioma, often have mutations or activating rearrangements in the BRAF, FGFR1, and MYB. [10] The control group consisted of 142 healthy Korean volunteers, and the GBM group was 80 patients with newly diagnosed GBM at our institution. There were significantly decreased frequencies of HLA-A*26:02 (OR 0.22 CI 0.05–0.98), HLA-C*08:01 (OR 0.29 CI 0.10–0.87), and HLA-DRB1*08:03 (OR 0.32 CI 0.11–0.98), while there was significantly increased frequency of HLA-C*04:01 (OR 2.29 CI 1.05–4.97). In analysis of haplotypes, the

	frequency of DRB1*14:05-DQB1*05:03 was significantly decreased (OR 0.22 CI 0.05–0.98). [11]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Annual report of cancer statistics in Korea in 2015 [3] Ocular Motor Cranial Nerve Palsies and Increased Risk of Primary Malignant Brain Tumors: South Korean National Health Insurance Data. Cancers. 2024; 16(4):781. [4] Nationwide Population-Based Incidence and Survival Rates of Malignant Central Nervous System Germ Cell Tumors in Korea, 2005-2012. Cancer Res Treat. 2017;49(2):494-501. [5] Prevalence of symptoms in glioma patients throughout the disease trajectory: a systematic review. J Neurooncol. 2018;140(3):485-496. [6] Risk of Brain Tumor Induction from Pediatric Head CT Procedures: A Systematic Literature Review. Brain Tumor Res Treat. 2018 Apr;6(1):1-7. [7] Changes in the Epidemiologic Pattern of Primary CNS Tumors in Response to the Aging Population: An Updated Nationwide Cancer Registry Data in the Republic of Korea. JCO Glob Oncol. 2024;10:e2300352. [8] The Korean Society for Neuro-Oncology (KSNO) Guideline for the Management of Brain Tumor Patients During the Crisis Period: A Consensus Survey About Specific Clinical Scenarios (Version 2023.1). Brain Tumor Res Treat. 2023 Apr;11(2):133-139. [9] Epidemiological Study of Malignant Gliomas in Korea Using Nationwide Dataset from 2007 to 2017. J Korean Med Sci. 2021;36(9):e68. [10] Molecular Testing of Brain Tumor. Journal of Pathology and Translational Medicine (2017) 51: 205-223 [11] HLA polymorphisms and risk of glioblastoma in Koreans. PLoS One. 2021;16(12):e0260618.

Breast Cancer

Incidence	In 2022, the crude incidence rate of Breast Cancer in Korea was 57.9 per 100,000 population, with a total of 29,528 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of Breast Cancer in Korea was 248.6 per 100,000 population, with a total of 127,429 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for Breast Cancer in Korea was 94.3%. [1] The median follow-up period was 94.3 months (range: 4.0–254.3), 37 patients (29.4%) experienced recurrence, and 17 (13.5%) died. [2]
Gender	Among the 5-year prevalent cases of breast cancer in 2022, 539 (0.4%) were male and 126,890 (99.6%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of breast cancer by age group was as follows: 0–4 years: 0; 5–9 years: 0; 10–14 years: 0; 15–19 years: 2; 20–24 years: 54; 25–29 years: 426; 30–34 years: 1,602; 35–39 years: 4,473; 40–44 years: 11,908; 45–49 years: 20,196; 50–54 years: 23,901; 55–59 years: 17,608; 60–64 years: 17,684; 65–69 years: 12,334; 70–74 years: 7,672; 75–79 years: 4,951; 80–84 years: 3,128; 85 years and older: 1,490. [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 129,400 cases (44.0%), Busan: 19,527 cases (6.6%), Incheon: 10,554 cases (3.6%), Daegu: 15,772 cases (5.4%), Gwangju: 5,170 cases (1.8%), Daejeon: 8,190 cases (2.8%), Ulsan: 4,305 cases (1.5%), Gyeonggi: 54,185 cases (18.4%), Gangwon: 4,647 cases (1.6%), Chungbuk: 4,051 cases (1.4%), Chungnam: 5,163 cases (1.8%), Jeonbuk: 6,828 cases (2.1%), Jeonnam: 8,491 cases (2.9%), Gyeongbuk: 4,684 cases (1.6%), Gyeongnam: 9,689 cases (3.3%), Jeju: 1,928 cases (0.7%), Sejong: 1,247 cases (0.4%). [3]
Clinical phenotypes/ Classification	Among 126 young breast cancer patients under the age of 40, Seventy-six patients (60.3%) had stage II disease, and 64 patients (50.8%) had node metastasis at the time of diagnosis. Sixty-five patients (51.6%) had a histological grade of 3. estrogen receptor (ER) was positive in 84 patients (66.7%), progesterone receptor (PR) was positive in 73 patients (57.9%), and human epidermal growth factor receptor 2 (HER2) was positive in 25 patients (19.8%). Based on the clinical Classification of breast cancer with ER, PR, HER2, and Ki-6748 statuses, 33 patients were classified as luminal A type (26.2%), 55 as luminal B type (43.7%), 10 as HER2 type (7.9%), and 25 as triple negative breast cancer type (19.8%). All patients were diagnosed with invasive ductal carcinoma. [2]

Clinical manifestation	A study included 183 breast cancers in 176 consecutive women under 40 years old who had been diagnosed with breast cancer between January 2012 and November 2014. The tumor was self-discovered in 86% (158/183) of cases. Screening US detected 80% (22/25) of asymptomatic breast cancers; 2 of the remaining 3 were found incidentally during an evaluation for a known contralateral breast cancer and primary occult bone metastasis, and 1 was discovered following the observation of suspicious calcification on a screening mammography (confirmed as ductal carcinoma in situ). [4]
Risk factor	In a study of Chinese, Japanese, and Korean women, the effect size for parous women was lower in the younger birth cohort group compared to the other cohort groups (HR [95% CI] 0.86 [0.66–1.13] compared to 0.60 [0.49–0.73], 0.46 [0.38–0.56] and 0.62 [0.51–0.77]). Meanwhile, a higher effect size was found for smoking (1.45 [1.14–1.84] compared to 1.25 [0.99–1.58], 1.06 [0.85–1.32] and 0.86 [0.69–1.08]) and alcohol consumption (1.22 [1.01–1.48] compared to 1.10 [0.90–1.33], 1.15 [0.96–1.38], and 1.07 [0.91–1.26]). [5]
Diagnosis	To diagnose breast cancer, an ultrasound-guided core needle biopsy is performed on the breast mass. A pathological examination of the excised breast tissue is conducted to identify invasive ductal carcinoma and invasive lobular carcinoma. Essential molecular biomarkers that must be assessed in breast cancer include hormone receptors such as estrogen receptor (ER) and progesterone receptor (PR), as well as human epidermal growth factor receptor 2 (HER2) and Ki-67. These markers are used to determine the molecular subtype of the breast cancer. [6] In mammography, The most common mammographic feature was a mass with or without calcification (66%). Two thirds of masses (64%) were of a high density, of which a majority had irregular shapes (89%); a plurality (45%) had indistinct margins. Triple-negative type cancer frequently showed as a mass with or without calcification (83%) compared to the other types ($p = 0.019$). [4]
Treatment	Overall, 113 patients (89.7%) underwent systemic chemotherapy, 104 patients (82.5%) underwent adjuvant radiotherapy, and 89 patients (70.6%) underwent adjuvant hormone therapy. [2]
Prognosis	A study analyzed the survival rates of recurrent breast cancer patients in Korea between two periods (period I: 2000–2007; period II: 2008–2013). The median follow-up was 30.6 months (range, 0–223.4) from the time of relapse, and the median survival time was 42.3 months. Survival after recurrence significantly improved from 38.0 months in period I to 49.7 months in period II ($p < 0.001$). In the analysis performed according to the hormone receptor and HER2 status subtypes, all subtypes except the triple-negative subtype showed higher survival after recurrence in period II than period I. Age at diagnosis, tumor stage, and treatment after recurrence were significantly correlated with survival outcomes. [7]

Genetic information	Significance analysis of the somatic mutations identified the key mutated genes, including TP53, PIK3CA, GATA3, MAP2K4, and ARID1A. TP53 (60%), PIK3CA (43%), and GATA3 (36%) were the most frequently mutated genes in this cohort. GATA3 somatic mutations were mostly mutually exclusive with TP53 mutations (Fisher's exact test, P <0.01), with PIK3CA mutations exhibiting similar mutual exclusivity patterns (P <0.01). [2] The prevalence of somatic mutations in MAP2K4 and ARID1A in breast cancer has also been documented in other studies50,51,52,53, indicating the presence of a congruent mutational profile within the early-onset Asian breast cancer demographic. [2]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Proteogenomic analysis dissects early-onset breast cancer patients with prognostic relevance. Exp Mol Med 56, 2382–2394 (2024). [3] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD).* https://www.koicd.kr/main.do. 2023. [4] Clinicopathological and Imaging Features of Breast Cancer in Korean Women under 40 Years of Age. J Korean Soc Radiol. 2017;76(6):375-385. [5] Differential patterns of reproductive and lifestyle risk factors for breast cancer according to birth cohorts among women in China, Japan and Korea. Breast Cancer Res 26, 15 (2024). [6] Diagnosis and Treatment of HER2-Positive Breast Cancer, Korean J Med. 2025;100 (2): 81-85. [7] Survival outcomes of breast cancer patients with recurrence after surgery according to period and subtype. PLoS One. 2023 Jul 27;18(7):e0284460.

Cervical Cancer

Incidence	In 2022, the crude incidence rate of cervical cancer in Korea was 6.2 per 100,000 population, with a total of 3,174 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of cervical cancer in Korea was 27.1 per 100,000 population, with a total of 13,890 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for cervical cancer in Korea was 79.9%. [1]
Gender	NA
Age	As of 2022, the number of 5-year prevalent cases of cervical cancer by age group was as follows: 0–4 years: 0; 5–9 years: 0; 10–14 years: 2; 15–19 years: 2; 20–24 years: 20; 25–29 years: 166; 30–34 years: 636; 35–39 years: 1,157; 40–44 years: 1,815; 45–49 years: 1,756; 50–54 years: 1,926; 55–59 years: 1,590; 60–64 years: 1,608; 65–69 years: 1,114; 70–74 years: 768; 75–79 years: 519; 80–84 years: 501; 85 years and older: 310. [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 10,568 cases (38.0%), Busan: 2,319 cases (8.3%), Incheon: 867 cases (3.1%), Daegu: 1,926 cases (6.9%), Gwangju: 417 cases (1.5%), Daejeon: 752 cases (2.7%), Ulsan: 314 cases (1.1%), Gyeonggi: 5,473 cases (19.7%), Gangwon: 582 cases (2.1%), Chungbuk: 368 cases (1.3%), Chungnam: 573 cases (2.1%), Jeonbuk: 670 cases (2.4%), Jeonnam: 1,126 cases (4.0%), Gyeongbuk: 348 cases (1.3%), Gyeongnam: 1,152 cases (4.1%), Jeju: 242 cases (0.9%), Sejong: 115 cases (0.4%). [2]
Clinical phenotypes/ Classification	The incidence of invasive cervical cancer was 6.7% for HPV16, 1.7% for HPV52, and 2.0% for HPV58; however, these differences were not statistically significant ($p = 0.187$). The rate of CIN3+ for HPV16, HPV52, and HPV58 were 70.6%, 51.7%, and 58.8%, respectively. [3]
Clinical manifestation	Cervical cancer often lacks noticeable symptoms in its early stages, although it can be accompanied by increased vaginal discharge, postcoital bleeding, and occasional spotting. [4]
Risk factor	The most important risk factor for cervical cancer is persistent high-risk human papillomavirus (HPV) infection. The prevalence of chronic HPV infection is approximately 10–20% in countries with a high incidence of cervical cancer and approximately 5%–10% in low-incidence countries. The HPV infection rate in South Korea varies according to researchers, but is reported to be approximately 10%–15%.

	HPV testing is used as a method for cervical cancer screening, and HPV vaccines are being used in clinical practice for cervical cancer prevention. [4]
Diagnosis	Cervical cancer can be screened using cytology and colposcopy, providing an accurate diagnosis through a cervical punch biopsy. Cervical conization is recommended when the depth of infiltration is difficult to assess using cervical punch biopsy or when evaluating microinvasions. After the histopathological diagnosis of cervical cancer, routine tests such as blood tests (including complete blood count and liver and kidney function tests), urine analysis, chest radiography, and electrocardiography are performed. [4]
Treatment	In KEYNOTE-826, grade 3 or higher complications occurred in 81.8% and 75.1% of the patients in the pembrolizumab and placebo groups, respectively. Although there was a higher trend in the pembrolizumab group, statistical significance was not proven (odds ratio [OR]=1.46; 95% CI=0.99–2.15). Grade 3 or higher complications most commonly observed in the entire patient group were anemia and neutropenia, with hyperthyroidism being more than 10% higher in the pembrolizumab group compared to the placebo group. Treatment-related toxicity led to the discontinuation of one or more drugs in 37.5% and in 26.5% of the patients in the pembrolizumab and placebo groups, respectively. Two (0.7%) and 4 (1.3%) deaths were directly related to therapeutic agents. [5] In this context, the Korean Society of Gynecologic Oncology (KSGO) issued an updated guideline in March 2024 recommending the addition of pembrolizumab to chemotherapy with or without bevacizumab. Based on high-level evidence, KSGO assigned a strong recommendation for this treatment strategy. [5]
Prognosis	The majority of research was concentrated in East Asia, particularly in China, Japan, and South Korea. Key prognostic factors affecting overall survival and disease-free survival included tumor size, histology, age, lymphovascular invasion, and lymph node metastasis. Non-squamous cell carcinoma histology, especially adenocarcinoma, was consistently linked to poorer outcomes. Older age and medical comorbidities, such as anemia and diabetes, also negatively impacted survival. [6] Multivariate analysis showed that adenocarcinoma was an independent negative prognostic factor for survival regardless of the time period (before CCRT, hazard ratio (HR) = 1.49; 95% confidence interval (CI), 1.37–1.62; after introduction of CCRT, HR = 1.40; 95% CI, 1.30–1.50). [7]
Genetic information	The HPV integration patterns of cervical cancer patients were determined by polymerase chain reaction and in situ hybridization, and categorized as episomal (group A), single-copy or multi-copy tandem repetition integrated (group B), and undetectable HPV types (group C). After sample and SNP quality control, 166,505 SNPs in 161 samples

	(38, 111, and 12 patients in groups A, B, and C, respectively) were examined. None of the SNPs reached genome-wide significance, and several candidate SNPs for future study were selected, including rs10999435 on chromosome 10q22, rs1322054 on chromosome 9q32-33, and rs10902171 on chromosome 11p15. [8]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD).* https://www.koicd.kr/main.do. 2023. [3] Assessment of malignant potential for HPV types 16, 52, and 58 in the uterine cervix within a Korean cohort. Sci Rep 14, 14619 (2024). [4] Clinical practice guidelines for cervical cancer: the Korean Society of Gynecologic Oncology guidelines. J Gynecol Oncol. 2024 Mar;35(2):e44. doi: 10.3802/jgo.2024.35.e44. Epub 2024 Feb 13. [5] Clinical practice guidelines for cervical cancer: an update of the Korean Society of Gynecologic Oncology Guidelines. J Gynecol Oncol. 2025 Jan;36(1):e70. [6] Prognostic Factors for Cervical Cancer in Asian Populations: A Scoping Review of Research From 2013 to 2023. Cureus. 2024 Oct 13;16(10):e71359. doi: 10.7759/cureus.71359. [7] Prognosis of Cervical Cancer in the Era of Concurrent Chemoradiation from National Database in Korea: A Comparison between Squamous Cell Carcinoma and Adenocarcinoma. PLoS One. 2015 Dec 14;10(12):e0144887. [8] The association of integration patterns of human papilloma virus and single nucleotide polymorphisms on immune- or DNA repair-related genes in cervical cancer patients. Sci Rep 9, 13132 (2019).

Colorectal Cancer

Incidence	In 2022, the crude incidence rate of colorectal cancer in Korea was 64.7per 100,000 population, with a total of 33,158 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of colorectal cancer in Korea was 233.5 per 100,000 population, with a total of 119,682 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for colorectal cancer in Korea was 74.6%. [1]
Gender	Among the 5-year prevalent cases of colorectal cancer in 2022, 71,337 (59.6%) were male and 48,345 (40.4%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of colorectal cancer by age group was as follows: 0–4 years: 0; 5–9 years: 0; 10–14 years: 10; 15–19 years: 22; 20–24 years: 142; 25–29 years: 522; 30–34 years: 1,261; 35–39 years: 2,372; 40–44 years: 4,723; 45–49 years: 5,654; 50–54 years: 10,522; 55–59 years: 12,591; 60–64 years: 17,535; 65–69 years: 17,401; 70–74 years: 14,822; 75–79 years: 13,208; 80–84 years: 11,435; 85 years and older: 7,362. [1]
Regional distribution	Colorectal cancer incidence varies significantly by region, with differences of up to 9-fold observed between areas. The incidence in developed countries is approximately 4 times higher than that in developing countries. This pattern is closely linked to economic development, as colorectal cancer incidence generally increases in line with rising Human Development Index (HDI) levels in developing nations. [2]
Clinical phenotypes/ Classification	Tumor location data were available for 212 patients; the distribution was as follows: 113 (53.3%) on the left side (descending, rectosigmoid, sigmoid, and splenic flexure) of the colon, 55 (25.9%) in the rectum, and 44 (20.8%) on the right side (ascending, cecum, and hepatic flexure) of the colon. CpG Island Methylator Phenotype (CIMP) status was classified into CIMP-high (CIMP-H), CIMP-low (CIMP-L), and non-CIMP according to previously described criteria. In the CIMP-H group, 15 tumor samples (34%) were found on the right side of the colon and 29 (66%) on the left side. In contrast, only 25 (22%) and 4 (7%) right colon tumors were observed in the CIMP-L and non-CIMP groups, respectively. These results showed significant enrichment (Chi-square test, P = 0.006) of tumor samples on the right colon in the CIMP-H group, suggesting that the CIMP status was correlated with the anatomical location within the large intestine. [3] *CIMP :
Clinical manifestation	The number of symptomatic patients before the diagnosis of colorectal cancer was 11,085 (63.7%). Hematochezia or melena, abdominal pain, anemia, and constipation

	were more often found in female than male patients while bowel habit change was more common in male patients. According to the group Classification based on age, patients older than 60 had experienced more constipation (P = 0.049). Moreover, patients with constipation tended to have a more advanced disease status (P < 0.001). [4]
Risk factor	In 2018, the World Cancer Research Fund and the American Institute for Cancer Research identified red and processed meat consumption, alcohol intake, obesity, and taller adult height as risk factors for colorectal cancer, and physical activity as a protective factor, based on a systematic literature review. [5] In the Korean Population-Based Retrospective Cohort Study, the results showed that risk increased with more frequent alcohol consumption. Smoking status was analyzed by non-smoker, ex-smoker, and current smoker. Current smokers showed significantly higher risk of colorectal cancer than non-smokers and ex-smokers (HR, 1.093; P = 0.021). Colonoscopy during health examinations reduced the risk of colorectal cancer (HR, 0.501; P < 0.001). [6]
Diagnosis	Colon was the cancer site in 59.8% of not-old patients, 62.9% of young-old patients, and 66.1% of old-old patients. Compared to not-old patients, young-old and old-old patients were more likely to be diagnosed with colon adenocarcinoma and well/moderate differentiation or adequate differentiation (all p < 0.001). [7]
Treatment	The recommended surgical technique for nonmetastatic right-sided colon cancer is complete mesocolic excision/central vessel ligation to reduce recurrence and improve survival outcomes. At least 12 lymph nodes should be examined for lymph node staging. In the management of obstructive colon cancer, decompression with preoperative stenting is not always necessary for right-sided colon cancer. Adjuvant chemotherapy is recommended for patients with high-risk stage II and III after surgery. In low-risk stage III, 3 months of adjuvant chemotherapy with oxaliplatin may also be considered. For metastatic colon cancer, liver MRI or PET is recommended to determine resectability and radical treatment decision. MSI testing and KRAS, NRAS, or BRAF gene testing are required when considering various treatment options. [8]
Prognosis	Old patients underwent more emergency operation (p < 0.001) and received less adjuvant therapy in stage I-III (p < 0.001). The probability of 3-year survival of young-old or old-old patients was worse than that for not-old patients (hazard ratio [HR], 1.55; 95% confidence interval [CI], 1.46 to 1.64) (HR, 3.19; 95% CI, 3.03 to 3.37). [7]
Genetic information	We identified 93,452 mutations with an average of 1,051.2 mutations per sample. Notably, the recurrence group displayed an average of 8.1 (0.8%) more mutations than did the non-recurrence group. The recurrence group had a tumor mutational burden (TMB) of 17.4, whereas the nonrecurrence group had a TMB of 17.3. [9]

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Endometrial Cancer

Incidence	The ASR for EC increased from 2.38 per 100,000 in 1999 to 7.29 per 100,000 in 2018 across all histologic types. [1]
Prevalence	According to the statistics of Korean Central Cancer Registry, the five-year prevalence was 18.1/100,000 (9,192 cases) in 2014. [2]
Mortality	The 5-year survival was 85.9% in the group diagnosed between 2000 and 2018. [1]
Gender	NA
Age	The proportion of older patients (>50 years) has increased and the age at diagnosis was increased in both endometrioid (from 51.1 years to 52.8 years, p<0.001) and serous histologies (from 60.6 years to 63.0 years, p=0.003). [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Endometrioid histology (68.9%) was the most common cancer type, followed by serous (3.1%) and clear cell (1.5%). Localized disease was the most common stage in all histologic types (75.8% in endometrioid, 43.5% in serous, 52.6% in clear cell); however, regional and distant stages were significantly higher in serous (33.7%, 19.6%) and clear cell (27.0%, 14.1%) than in the endometrioid histology groups (15.9%, 3.8%) (p<0.001). [1]
Clinical manifestation	The global studies, including 34432 unique patients with postmenopausal bleeding and 6358 with endometrial cancer (40,790 women), were analyzed. The pooled prevalence of postmenopausal bleeding among women with endometrial cancer was 91% (95% CI, 87%-93%), irrespective of tumor stage. [3]
Risk factor	The endometrial cancer risk was higher in the metabolic syndrome group than that in the non-metabolic syndrome group (HR, 1.362; 95% CI, 1.281–1.449). The association between metabolic syndrome and endometrial cancer risk was significant in the premenopausal subgroup (HR, 1.543; 95% CI, 1.39–1.713) and postmenopausal subgroup (HR, 1.306; 95% CI, 1.213–1.407). [4]
Diagnosis	Endometrioid type accounted for most cases (84.9%), followed by serous (4.8%), carcinosarcoma (4.6%), mucinous (1.9%), and clear cell (1.7%). SEER stage information was available for women diagnosed since 2005 (n=18.993), and those with localized, regional, and distant stage represented 71.2%, 17.9%, and 5.6% of the total, respectively. [5]

Treatment	Surgery was frequently selected as the treatment modality in all histologic types (91.8% for endometrioid, 91.2% for serous, 88.8% for clear cell). The use of radiotherapy was more frequent in serous (21.7%) and clear cell (23.3%) histology than in endometrioid (16.0%) histology ($p<0.001$). Specifically, the use of chemotherapy was more prominent in serous (54.1%) and clear cell (41.0%) histology than in endometrioid (15.7%) histology ($p<0.001$). [1] Two-thirds (63.9%) of patients received surgery only, while 11.5%, 9.8%, and 5.8% received chemotherapy, radiotherapy, or both in addition to surgical treatment, respectively. [5]
Prognosis	There were significant differences in the 5-year survival rates based on histology (90.9%, 55.0%, and 68.5% for endometrioid, serous, and clear cell, respectively, $p<0.001$), stage (93.4%, 77.0%, and 31.0% for localized, regional, and distant, respectively, $p<0.001$), and age (93.0% for <50 years and 80.6% for $\geq$50 years, $p<0.001$). [1] The group with localized-stage disease had better 5-year survival (93.4%) rates than the group with regional (77.0%) or distant-stage disease (31.0%) ($p<0.001$, log-rank test). [1]
Genetic information	Thirty patients (14.7%) with pathogenic mutations (12 MLH1; 6 MSH2; 10 MSH6; 2 PMS2) and 20 patients (9.8%) with 22 unclassified variants (8 MLH1; 8 MSH2; 2 MSH6; 3 PMS2; 1 EPCAM) were identified. After excluding four close relatives of a proband, the prevalence of LS was 13.0% (26/200). Patients with LS were more likely than those with sporadic cancer to be younger at diagnosis (48 vs. 53 years, $p = 0.045$) and meet the Amsterdam II criteria (66.7 vs. 3.5%, $p < 0.001$). Non-endometrioid histology was more prevalent in patients with MSH6 or PMS2 mutations (41.7%) than those with MLH1 or MSH2 mutations (5.6%, $p = 0.026$). [6]
References	[1] Trends in the incidence and survival outcomes of endometrial cancer in Korea: a nationwide population-based cohort study. J Gynecol Oncol. 2024;35(3):e32. [2] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2016). http://kosis.kr/ [3] Association of Endometrial Cancer Risk With Postmenopausal Bleeding in Women: A Systematic Review and Meta-analysis. JAMA Intern Med. 2018 Sep 1;178(9):1210-1222. [4] Metabolic Syndrome as a Risk Factor of Endometrial Cancer: A Nationwide Population-Based Cohort Study of 2.8 Million Women in South Korea. Front Oncol. 2022 Jun 16;12:872995. [5] Conditional relative survival of patients with endometrial cancer: a Korean National Cancer Registry study. J Gynecol Oncol. 2022 Feb;33(2):e23. [6] Identification of Lynch Syndrome in Patients with Endometrial Cancer Based on a Germline Next Generation Sequencing Multigene Panel Test. Cancers. 2022; 14(14):3406.

Esophageal Cancer

Incidence	In 2022, the crude incidence rate of esophageal cancer in Korea was 5.9 per 100,000 population, with a total of 3,044 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of esophageal cancer in Korea was 15.4 per 100,000 population, with a total of 7,906 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for esophageal cancer in Korea was 43.2%. [1]
Gender	Among the 5-year prevalent cases of esophageal cancer in 2022, 6,959 were male (27.2 per 100,000) and 947 were female (3.7 per 100,000). [1] 93.0% were male, with a male-to-female ratio of 13.4:1. [2]
Age	As of 2022, the number of 5-year prevalent cases of esophageal cancer by age group was as follows: 0–4 years: 0; 5–9 years: 0; 10–14 years: 0; 15–19 years: 0; 20–24 years: 2; 25–29 years: 1; 30–34 years: 1; 35–39 years: 18; 40–44 years: 36; 45–49 years: 130; 50–54 years: 346; 55–59 years: 746; 60–64 years: 1,431; 65–69 years: 1,730; 70–74 years: 1,469; 75–79 years: 1,004; 80–84 years: 744; 85 years and older: 247. [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 7,398 cases (47.2%), Busan: 1,022 cases (6.5%), Incheon: 453 cases (2.9%), Daegu: 671 cases (4.3%), Gwangju: 247 cases (1.6%), Daejeon: 310 cases (2.0%), Ulsan: 192 cases (1.2%), Gyeonggi: 2,353 cases (15.0%), Gangwon: 359 cases (2.3%), Chungbuk: 247 cases (1.6%), Chungnam: 288 cases (1.8%), Jeonbuk: 329 cases (2.1%), Jeonnam: 581 cases (3.7%), Gyeongbuk: 328 cases (2.1%), Gyeongnam: 708 cases (4.5%), Jeju: 127 cases (0.8%), Sejong: 55 cases (0.4%). [3]
Clinical phenotypes/ Classification	Squamous cell carcinoma was the predominant pathological type (99.0% in males and 93.1% in females); however, the proportion of adenocarcinoma cases was higher in females than males (0.8% vs. 5.6%, $p<0.001$). Males tended to have tumors in the lower esophagus (46.0%), while females had a predominance of tumors in the middle esophagus (59.0%) ($p<0.001$). Stage 1 tumors were more common in males than females (32.6% vs. 23.8%), while stage 4 tumors were more frequently observed in females than males (8.6% vs. 11.2%, $p=0.001$). Poorly differentiated carcinoma was relatively more frequent in females than in males (11.2% vs. 15.3%, $p=0.011$). [2]
Clinical manifestation	Because the esophagus is composed of muscular layers and is highly distensible, symptoms of esophageal cancer typically do not appear until the disease is at an advanced stage. In later stages, patients may experience dysphagia during meals, chest

	pain, and weight loss. If the cancer invades the recurrent laryngeal nerve, hoarseness may occur. [4] *In Korea, early-stage esophageal cancer is often detected incidentally during screening esophagogastroduodenoscopy (EGD) performed for health checkups. [4]
Risk factor	Univariate analysis conducted to evaluate factors associated with OS showed that age, sex, diabetes mellitus, smoking, BMI, and tumor stage were related to overall survival. In the multivariate analysis, being female (hazard ratio [HR], 0.685; 95% confidence interval [95% CI], 0.548−0.857; p=0.001) and high BMI (≥25 kg/m2, HR, 0.432; 95% CI, 0.355−0.526; p<0.001) were associated with a significantly reduced risk of mortality. [2]
Diagnosis	*The type of esophageal cancer varies depending on both the nature of the stimuli applied to the esophageal mucosa and the anatomical location within the esophagus. In East Asian countries such as Korea, China, and Japan, esophageal squamous cell carcinoma (ESCC) predominantly occurs in the upper and middle thirds of the esophagus. In Korea, according to 2017 statistics, approximately 91.2% of all esophageal cancers were classified as squamous cell carcinoma. The major risk factors for ESCC include smoking and alcohol consumption. In contrast, in Western countries where obesity is more prevalent and gastroesophageal reflux disease is common, Barrett's esophagus—considered a precancerous condition in which the normal squamous epithelium of the lower esophagus is replaced by gastric-type columnar epithelium—is frequently observed and may progress to esophageal adenocarcinoma. [4]
Treatment	Esophageal squamous cell cancer lesions confined to the mucosa, such as cTis and cT1a, can be treated with endoscopic resection, but lesions invading the submucosa require esophagectomy. Patients with locally advanced ESCC with lymph node metastasis require neoadjuvant therapy followed by esophagectomy and reconstruction. Esophagectomy is associated with mortality and morbidity rates of 3% and 50%, respectively. [4]
Prognosis	The 5-year OS rates by stage were as follows: carcinoma in situ, 93.6%;stage 1, 72.3%; stage 2, 45.4%; stage 3, 22.4%; and stage 4, 6.1%. The 5-year RFS rates by stage were: carcinoma in situ, 85.6%; stage 1, 85.6%; stage 2, 70.3%; stage 3, 56.9%; and stage 4, 40.5%. Additionally, the RFS rate was also higher in female patients compared to male patients (74.0% vs. 84.3%, p=0.036). [2]
Genetic information	PD-L1 expression, PIK3CA mutation, and MSI/dMMR were detected in 35.9, 12.5, and 17.2% of ESCCs, respectively. HPV was rarely detected (1.6%) (high-risk HPV68), whereas KRAS and BRAF mutations were not detected in ESCCs. PD-L1-positive tumors were not correlated with PIK3CA mutation or MSI/dMMR (all P > 0.05). In the PD-L1-negative ESCCs, PIK3CA mutation had a poor prognostic impact on both OS and DFS (P = 0.006, P = 0.002). [5]

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Gallbladder and Biliary Tract Cancer

Incidence	In 2022, the crude incidence rate in Korea was 15.3 per 100,000 population, with a total of 7,848 newly diagnosed cases reported. [1] *High incidence rates are observed in Asia, especially in East Asian countries such as China (3.1), Japan (5.4), and Korea (8.1). Notably, Korea has the highest biliary tract cancer incidence rate in Asia. [2]
Prevalence	In 2022, the 5-year prevalence in Korea was 31.8 per 100,000 population, with a total of 16,282 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate in Korea was 29.4%. [1]
Gender	Among the 5-year prevalent cases of gallbladder and biliary tract cancers in 2022, 9,014 (55.4%) were male and 7,268 (44.6%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of gallbladder and biliary tract cancer by age group was as follows: 0–4 years: 0; 5–9 years: 0; 10–14 years: 1; 15–19 years: 0; 20–24 years: 0; 25–29 years: 3; 30–34 years: 13; 35–39 years: 49; 40–44 years: 116; 45–49 years: 240; 50–54 years: 592; 55–59 years: 954; 60–64 years: 2,064; 65–69 years: 2,802; 70–74 years: 3,052; 75–79 years: 2,714; 80–84 years: 2,326; 85 years and older: 1,356. [1]
Regional distribution	In the case of gallbladder cancer, the number of patients by medical institution region in 2023 was as follows: Seoul: 3,751 cases (32.8%), Busan: 901 cases (7.9%), Incheon: 424 cases (3.7%), Daegu: 768 cases (6.7%), Gwangju: 272 cases (2.4%), Daejeon: 352 cases (3.1%), Ulsan: 209 cases (1.8%), Gyeonggi: 2,178 cases (19.0%), Gangwon: 226 cases (2.0%), Chungbuk: 191 cases (1.7%), Chungnam: 255 cases (2.2%), Jeonbuk: 375 cases (3.3%), Jeonnam: 409 cases (3.6%), Gyeongbuk: 279 cases (2.4%), Gyeongnam: 709 cases (6.2%), Jeju: 98 cases (0.9%), Sejong: 43 cases (0.4%). [3]
Clinical phenotypes/ Classification	The incidence rate of intra-hepatic bile duct cancer decreased by 1.3% annually from 8.8 per 100,000 in 2006 to 7.8 per 100,000 in 2015. Extrahepatic bile duct cancer also showed a decreasing trend by 2.2% per year from 8.7 per 100,000 in 2006 to 6.7 per 100,000 in 2015. Gallbladder cancer showed the greatest decline, with an annual percentage change of 2.8% from 6.3 per 100,000 to 5.2 per 100,000 during the same period. [4]
Clinical manifestation	The appearance and characteristics of clinical symptoms are contingent upon the anatomical site of the primary tumor and its associated metastasis. Patients with extrahepatic cholangiocarcinoma typically become symptomatic when biliary obstruction caused by the disease results in jaundice. Patients with intrahepatic

	cholangiocarcinoma are less likely to experience jaundice and instead exhibit non-specific symptoms, such as dull right upper quadrant pain or unexplained weight loss. Approximately 20–25% of patients are asymptomatic, with the lesions detected incidentally. Patients with early gallbladder cancer are also usually asymptomatic and are often diagnosed incidentally through preoperative imaging studies or intra- or postoperative examinations. [5]
Risk factor	Choledocholithiasis (HR = 13.7; 95% confidence interval (CI) = 7.58–24.88) was the strongest risk factor for Cholangiocarcinoma (CCA), followed by cholelithiasis (HR = 2.94) and hepatitis B virus (HBV) infection (HR = 2.71). In conclusion, choledocholithiasis, cholelithiasis, HBV, older age, male sex, diabetes, smoking, alcohol drinking, and obesity were found to be potential risk factors of CCA. [6] *Liver fluke infections are known to cause chronic inflammation and bile stasis in the biliary tract, increasing the risk of biliary tract cancer. In Korea, Clonorchis sinensis infection is endemic, particularly in areas along major rivers, where the incidence of BTC is reported to be higher. [7]
Diagnosis	The CA19-9 test is non-invasive and easily performed, making it a convenient tool in clinical practice. It demonstrates moderate sensitivity and relatively high specificity for the diagnosis of cholangiocarcinoma. However, extrahepatic cholangiocarcinoma cannot be diagnosed based solely on CA19-9 levels; additional diagnostic procedures are required. Pathological diagnosis may involve forceps biopsy and brush cytology performed during endoscopic retrograde cholangiopancreatography. More recently, fine needle aspiration and tissue sampling using endoscopic ultrasonography have also been employed. [8]
Treatment	Recent advances in molecular profiling have transformed the treatment landscape for solid tumors, including ICC, ECC, and GBC. The United States Food and Drug Administration has approved targeted therapies for genetic alterations, such as FGFR2 fusions, IDH1 mutations, NTRK fusions, BRAF V600E mutations, HER2-positive caused by ERBB2 amplification, and RET fusions, identified based on the anatomical location of BTC has expanded the treatment options for BTC. [2] *Among these, the only drugs approved by the Ministry of Food and Drug Safety (MFDS) are ivosidenib for IDH1 mutations, pemigatinib for FGFR2 fusions, and both larotrectinib and entrectinib for NTRK fusions. [2]
Prognosis	Five-year survival in patients with biliary tract cancer was 30% for gallbladder cancer, followed by 27.8% for extrahepatic bile duct cancers, and 15.9% for intrahepatic bile duct cancers. Intrahepatic bile duct cancers had the lowest survival rate compared to the other two cancer types. Similarly, for median survival, patients with intrahepatic bile duct cancer had the lowest median survival (8.0 months) compared to those with

	extrahepatic bile duct cancer (16.6 months), or gallbladder cancer (10.7 months). There was a decreasing trend in 5-year survival rates for intrahepatic bile duct cancer from 17.7% in 2006 to 15.2 in 2011, whereas there were no clear trends in 5-year survival rates for patients with extrahepatic bile duct cancer and gallbladder cancer. [4]
Genetic information	Driver mutations susceptible to targeted therapy have been identified in each biliary tract cancer subtype, which are typically mutually exclusive from one another. For example, small duct-type intrahepatic cholangiocarcinoma is enriched for actionable targets, such as IDH 1/2 mutations (15–20%) and FGF2 fusions (10–20%). Large duct-type intrahepatic cholangiocarcinoma tumorigenesis frequently involves KRAS (15–30%) and TP53 mutations (10–40%). [4] Studies focusing specifically on Korean patients with biliary tract cancer reported mutation frequencies: TP53 (42.7-55.5%), KRAS (22.8-30.9%), ARID1A (10.1-15.1%), and PIK3CA (4.6-6.2%). [2]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Epidemiology and genomic features of biliary tract cancer and its unique features in Korea, J Liver Cancer. 2025;25(1):41-51. [3] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD)*. https://www.koicd.kr/main.do. 2023. [4] Incidence and Overall Survival of Biliary Tract Cancers in South Korea from 2006 to 2015: Using the National Health Information Database. Gut Liver. 2019 Jan 15;13(1):104-113. [5] Recent Advancement in Diagnosis of Biliary Tract Cancer through Pathological and Molecular Classifications. Cancers. 2024; 16(9):1761. [6] Comparison of Risk Factors for Cholangiocarcinoma and Hepatocellular Carcinoma: A Prospective Cohort Study in Korean Adults. Cancers. 2022; 14(7):1709. [7] Prevalence of Clonorchis sinensis infection among residents along 5 major rivers in the Republic of Korea. Korean J Parasitol 2016;54:215–219. [8] 2023 Clinical Practice Guideline for Extrahepatic Cholangiocarcinoma. Seoul, Korea: KSMO; 2023.

Gastric Cancer

Incidence	In 2022, the crude incidence rate of gastric cancer in Korea was 57.5 per 100,000 population, with a total of 29,847 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of gastric cancer in Korea was 224.4 per 100,000 population, with a total of 115,022 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for gastric cancer in Korea was 78.4%. [1]
Gender	Among the 5-year prevalent cases of stomach cancer in 2022, 77,098 (67.0%) were male and 37,924 (33.0%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of stomach cancer by age group was as follows: 0–4 years: 0; 5–9 years: 0; 10–14 years: 3; 15–19 years: 1; 20–24 years: 24; 25–29 years: 127; 30–34 years: 289; 35–39 years: 853; 40–44 years: 3,068; 45–49 years: 4,669; 50–54 years: 8,306; 55–59 years: 11,878; 60–64 years: 19,176; 65–69 years: 18,911; 70–74 years: 17,226; 75–79 years: 14,218; 80–84 years: 11,067; 85 years and older: 5,206. [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 71,676 cases (39.4%), Busan: 12,694 cases (7.0%), Incheon: 5,935 cases (3.3%), Daegu: 11,022 cases (6.1%), Gwangju: 3,577 cases (2.0%), Daejeon: 6,422 cases (3.5%), Ulsan: 2,783 cases (1.5%), Gyeonggi: 30,994 cases (17.0%), Gangwon: 3,769 cases (2.1%), Chungbuk: 3,091 cases (1.7%), Chungnam: 4,361 cases (2.4%), Jeonbuk: 4,889 cases (2.7%), Jeonnam: 6,356 cases (3.5%), Gyeongbuk: 3,669 cases (2.0%), Gyeongnam: 9,093 cases (5.0%), Jeju: 1,143 cases (0.6%), Sejong: 512 cases (0.3%). [2]
Clinical phenotypes/ Classification	A study identified two distinct molecular subtypes, mesenchymal phenotype (MP) and epithelial phenotype (EP), by analyzing genomic and proteomic data. Molecularly, MP subtype tumors show high genomic integrity characterized by low mutation rates and microsatellite stability, whereas EP subtype tumors show low genomic integrity. Clinically, the MP subtype is associated with markedly poor survival and resistance to standard chemotherapy, whereas the EP subtype is associated with better survival rates and sensitivity to chemotherapy. Importantly, MP subtype cancer cells are more sensitive to inhibition of IGF1/IGF1R pathway than EP subtype. [3]
Clinical manifestation	Several retrospective studies conducted in Korea demonstrated that the lower part is the most common site to perform endoscopic submucosal dissection (ESD) for the treatment of early gastric cancer (EGC). One study in which 647 consecutive EGC lesions were resected by ESD also showed that the most frequent site of occurrence of EGC was

	the lower part of the stomach (89.6%). This study has reported that the lesser curvature was the most common site of involvement (43.6%). [4]
Risk factor	Chronic H. pylori infection was found to raise the risk of gastric cancer among Koreans, with the highest risk observed for cardiac gastric cancer and early gastric cancer (SOR=2.88 for both). [5] Data from the 2019 Korean National Cancer Screening Survey, an annual cross-sectional nationwide survey, were used. Six stomach cancer risk factors, including smoking, drinking, physical inactivity, obesity, meat intake, and salted food intake, as well as stomach cancer screening behaviors, were assessed. [6]
Diagnosis	Screening rates for gastric cancer increased from 28% to 51.7% between 2007 and 2016, and that the rate of endoscopy use for gastric cancer screening increased sharply. Cancer detection rates of upper gastrointestinal series (UGIS) and endoscopy were 0.41 and 2.25 per 1,000 screens in 2007–2008 and 0.26 and 1.99 in 2015–2016, respectively. Interval cancer rates per 1,000 negative screenings were 1.33 (2007–2008) and 1.21 (2015–2016) for UGIS and 1.14 (2007–2008) and 0.88 (2015–2016) for endoscopy. The sensitivity of UGIS decreased from 23.6% (2007–2008) to 17.6% (2015–2016), whereas that of endoscopy increased from 66.4% (2007–2008) to 69.3% (2015–2016). [7]
Treatment	Regarding operative procedures, a total laparoscopic approach was used in more than half of the cases (55.1%) in 2019. The most common anastomotic method was the Billroth II procedure (45.0%) after distal gastrectomy and double tract reconstruction (81.2%) after proximal gastrectomy in 2019. The postoperative mortality rate was 1.0%, and the overall postoperative complication rate was 14.5%. [8]
Prognosis	Information on post-operative morbidity was obtained for 12,652 patients (99.2%), among whom 1,937 (15.3%) experienced complications. The incidence of local complications was 9.4%, while systemic complications were observed in 3.5% of patients. The most frequently reported local complication was intra-abdominal fluid collection (1.8%), followed by anastomotic leakage (1.3%), mechanical ileus (1.3%), and wound-related issues (1.2%). The incidence of chyle ascites, reported for the first time in 2023, was 0.3%. For systemic complications, pulmonary issues were the most prevalent, affecting 2.6% of the patients. [9]
Genetic information	The rs762855 SNP, MSANTD1, and serum NAP levels are associated with DGC risk in Korean females. [10] The ALDH2 rs671 genotype was classified as inactive ALDH2 (GG) or active ALDH2 (GA/AA). The risk of gastric cancer was higher in men with the inactive ALDH2 than in those with active ALDH2 (odds ratio [OR], 1.25; 95% confidence interval [CI], 1.09–1.39), whereas no significant association was found between ALDH2 genotype and gastric

	cancer in women (OR, 1.00; 95% CI, 0.99–1.02). In men, the association between ALDH2 genotype and gastric cancer was stronger in current drinkers. [11]
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Gastrointestinal Stromal Tumors (GIST)

Incidence	Gastrointestinal stromal tumours (GIST) have an incidence of ~1.2 per 100,000 individuals per year in most countries. [1] A study collected pathology reports of 1,227 GISTs from 38 hospitals in Korea between 2003 and 2004. The incidence of GISTs in Korea was 1.6 to 2.2/100,000. [2]
Prevalence	65,233 individuals underwent screening endoscopies at eight university hospitals. Upper GI subepithelial lesions (SELs) were identified in 1,044 patients (1,062 lesions in total). Thus, the endoscopic prevalence of upper GI SELs was thus 1.60%. The prevalence differed significantly between institutions (range, 0.72%–3.48%). [3]
Mortality	The 5-year disease free survival rates of gastric GIST and small bowel GIST are 93.7% and 82.0%, retrospectively. [4]
Gender	Regarding sex distribution, gastric GIST cases included 58 males (50.4%) and 57 females (49.6%), while small bowel GIST cases comprised 28 males (56.0%) and 22 females (44.0%). [4]
Age	The mean age at diagnosis was 58.8 years (range, 33–82) for gastric GIST and 58.6 years (range, 26–86) for small bowel GIST. [4]
Regional distribution	NR
Clinical phenotypes/ Classification	For spindle-type GISTs, other spindle cell neoplasms, including leiomyoma, leiomyosarcoma, schwannoma, desmoid fibromatosis, solitary fibrous tumor, inflammatory myofibroblastic tumor, dedifferentiated liposarcoma, and inflammatory fibroid polyp, should be considered. In epithelioid or mixed-type GISTs, perivascular epithelioid tumors, metastatic melanoma, glomus tumors, and neuroendocrine neoplasms should be differentiated. These tumors are more challenging to diagnose because epithelioid and mixed-type GISTs exhibit occasional loss of expression for KIT and DOG1. Additional ancillary tests can be helpful in the differential diagnosis of these subtypes. [5]
Clinical manifestation	The most common symptoms of GIST are abdominal pain, gastrointestinal bleeding, worsening general condition, and dyspepsia. [4] The ratio of GIST patients with no symptom is significantly higher in gastric GIST (68.7%, n = 79) than small bowel GIST (34%, n = 17) ($p < 0.005$). The cases of emergency admission are 32.0% in small bowel GIST, and 11.3% in gastric GIST ($p < 0.005$). [4]
Risk factor	CD34 positivity was correlated with a higher risk of GISTs (P=0.04). [2]

Diagnosis	SELs were most frequently found in the stomach (63.8%) and had a mean size of 9.9±6.1 mm. Endoscopic ultrasonography was performed in 293 patients (28.1%). The most common lesions were leiomyomas, followed by gastrointestinal stromal tumors, and ectopic pancreas. The proportions of SELs with malignant potential according to size were 3% (<1 cm), 22% (1–2 cm), 27% (2–3 cm), and 38% (≥3 cm). [3]
Treatment	About 89.6% of gastric GIST surgery are laparoscopic surgery, and about 10.4% are open surgery. In small bowel GIST surgery, 36% of surgeries are performed with laparoscopic surgery, and the other 64% are open surgery. This surgical approach is significantly different between the two groups ($p < 0.005$). [4]
Prognosis	The Armed Forces Institute of Pathology Classification and the Modified National Institutes of Health (NIH) Classification are still the most commonly used in clinical practice for risk stratification of GISTs. The modified NIH criteria comprise four components: size, mitotic count, site, and presence of rupture. Any GISTs with a ruptured tumor should be categorized as high risk. Gastric GISTs show a better prognosis than extragastric GISTs, especially those smaller than 5 cm in size, and have a low recurrence rate. [5] Primary tumor site is known as the risk factor of GISTs. Generally, tumors located in the stomach are more favorable oncologic outcomes than those located in the small bowel or other site. [4]
Genetic information	KIT, PDGFRA, NF1, and SDH mutations are considered driver mutations. [5] Approximately 80% of GISTs harbor activating mutations in either the KIT or PDGFRA genes. Most KIT mutations are somatic, with the most frequent mutations occurring in exon 11. Deletions affecting codons 557–558 of exon 11 have been reported in approximately 28% of all GISTs, and are associated with high-risk tumors that have a higher mitotic index (> 5/50 HPF) and larger (> 5 cm) tumor size. [5]
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Head and Neck Cancer

Incidence	In 2022, the crude incidence rate in Korea was 9.1 per 100,000 population, with a total of 4,684 newly diagnosed cases reported. [1] Incidence rates of lip (0.07–0.10/100,000 people) and oropharyngeal cancer (0.09–0.12/100,000 people) were very low while laryngeal cancer occurred most frequently among HNCs (1.17–2.08/100,000 people). [2]
Prevalence	In 2022, the 5-year prevalence in Korea was 31.3 per 100,000 population, with a total of 16,043 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate in Korea was 70.3%. [1]
Gender	Among the 5-year prevalent cases in 2022, 11,193 were male and 4,850 were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of head and neck cancer by age group was as follows: 0–4 years: 2; 5–9 years: 10; 10–14 years: 25; 15–19 years: 64; 20–24 years: 115; 25–29 years: 206; 30–34 years: 260; 35–39 years: 360; 40–44 years: 690; 45–49 years: 970; 50–54 years: 1,642; 55–59 years: 1,962; 60–64 years: 2,572; 65–69 years: 2,432; 70–74 years: 1,877; 75–79 years: 1,321; 80–84 years: 973; 85 years and older: 562. [1]
Regional distribution	Seoul: 669 cases (20.2%), Busan: 246 cases (7.4%), Daegu: 166 cases (5.0%), Incheon: 156 cases (4.7%), Gwangju: 71 cases (2.1%), Daejeon: 89 cases (2.7%), Ulsan: 53 cases (1.6%), Sejong: 7 cases (0.2%), Gyeonggi: 743 cases (22.5%), Gangwon: 117 cases (3.5%), Chungbuk: 88 cases (2.7%), Chungnam: 164 cases (5.0%), Jeonbuk: 138 cases (4.2%), Jeonnam: 144 cases (4.4%), Gyeongbuk: 195 cases (5.9%), Gyeongnam: 220 cases (6.6%), Jeju: 43 cases (1.3%). [3]
Clinical phenotypes/ Classification	TP53 mutations were detected in 116/179 patients (64.8%), more frequently in human papillomavirus-negative and non-oropharyngeal cancers. Patients with TP53 mutations exhibited shorter progression-free survival than TP53 wild-type in all the patients (1.7 vs. 3.8 months, p=0.002) and in those who received targeted treatments (2.5 vs. 7.3 months, p=0.009). Furthermore, TP53 mutations were strongly associated with poor overall survival than TP53 wild-type in all the patients (11.1 vs. 28.8 months, p=0.005) and in group 5 (8.1 vs. 33.0 months, p=0.001). [4]
Clinical manifestation	Patients classified into the depressive group accounted for 55.6% of the total (64 patients). Compared to the non-depressive group, patients in the depressive group reported more severe symptoms, with the exception of nausea, stomatitis, and constipation. Among the symptoms experienced by the depressive group, the most severe was dry mouth (5.52 out of 10), followed by fatigue (5.00), dysphagia (4.98),

	changes in taste (4.95), loss of appetite (4.46), and problems with teeth and gums (4.27). [5]
Risk factor	Although the incidence varies between countries and individual regions within countries, ~80% of cases are attributable to tobacco use, excessive alcohol consumption or both, and in South Asia the use of smokeless tobacco and betel quid/areca nut products. Other risk factors include environmental pollutants, especially in countries with worsening air pollution such as India and China, and human papilloma virus infections in the etiology of oropharyngeal cancer and cancers of the oral cavity. [6]
Diagnosis	In females, oral cancer incidence showed a significant increase (annual percentage changes [APC]: 2.19), with the highest rise occurring in those aged 45 or younger (APC: 3.20). Subsite-specific trends showed that in males, the greatest increases were in cancers of the tonsils (APC: 3.11), salivary glands (APC: 2.01), and tongue (APC: 1.95), whereas in females, the tongue (APC: 3.97), tonsils (APC: 3.85), and salivary glands (APC: 3.09) showed the highest increases. [7]
Treatment	Between October 2017 and August 2020, 203 patients were enrolled, including crossover. In arm 1, the overall response rate was 21.2% and disease control rate was 65.6%. The ORR was 0% for arm 2, 42.9% for arm 3, 0% for arm 4, and 15.6% for arm 5. In the case of PD with durvalumab, tremelimumab was added, and the ORR for durvalumab + tremelimumab was 2.2%. The median progression-free survival was 3.4, 3.2, 5.6, 1.6, and 1.7 months for each arm, respectively. The median overall survival was 12.4, 6.1, 11.1, 9.1, and 12.7 months, respectively. Overall, the toxicity profiles were manageable, and there were no treatment-related deaths. [8]
Prognosis	Hypopharyngeal cancer ($p = 0.0031$), recurrent tumor ($p = 0.0001$), T4 stage ($p < 0.0001$), N2/N3 stages ($p = 0.0001$), M1 stage ($p < 0.0001$), cervical lymph node involvements of Level I ($p = 0.0107$), Level II ($p = 0.0128$), III ($p < 0.0001$), IV ($p < 0.0001$), and VI ($p = 0.0211$) were statistically significant predicting factors of mediastinal lymph node metastasis. [9]
Genetic information	Copy number alterations and chromosomal structural abnormalities—hallmarks of genomic instability—along with frequent mutations in the CDKN2A and TP53 genes, are commonly observed. These alterations are primarily confined to HPV-negative head and neck squamous cell carcinoma (HNSCC). In contrast, HPV-positive HNSCC is characterized by the activation of HPV E6 and E7 oncoproteins, which inhibit p53 and RB1, leading to distinct genomic alterations and forming a separate disease entity from HPV-negative HNSCC. In addition to TP53 and CDKN2A, other frequently mutated genes in HNSCC include tumor suppressor genes such as FAT1, NOTCH1, KMT2D, NSD1, and

	TGFBR2. Mutations in oncogenes are less common, with PIK3CA being a representative example. [10]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Trends in Head and Neck Cancer in South Korea Between 1999 and 2012. Clin Exp Otorhinolaryngol. 2016 Sep;9(3):263-9. [3] Annual report of cancer statistics in Korea in 2015 [4] Clinical Impact of TP53 Mutations in Patients with Head and Neck Cancer Who Were Treated with Targeted Therapies or Immunotherapy. Cancer Res Treat. 2025 Jul;57(3):709-719. [5] Symptom Severity according to the Presence of Depressive and Anxiety Symptoms among Patients with Head and Neck Cancer. Korean J Adult Nurs. 2016;28(2):148-155. [6] Pan-Asian adaptation of the EHNS-ESMO-ESTRO Clinical Practice Guidelines for the diagnosis, treatment and follow-up of patients with squamous cell carcinoma of the head and neck. ESMO Open. 2021 Dec;6(6):100309. [7] An epidemiological trend analysis of oral cancer in Korea from 2001 to 2021. BMC Oral Health 25, 969 (2025). [8] Personalized Biomarker-Based Umbrella Trial for Patients With Recurrent or Metastatic Head and Neck Squamous Cell Carcinoma: KCSG HN 15-16 TRIUMPH Trial. J Clin Oncol. 2024 Feb 10;42(5):507-517. [9] Mediastinal Lymph Node Metastasis from Head and Neck Cancer: Predictive Factors and Imaging Features. J Korean Soc Radiol. 2021 Sep;82(5):1246-1257. [10] What's New in Molecular Targeted Therapies for Head and Neck Cancer?, Korean J Head Neck Oncol. 2021;37(2):11-17. Published online November 30, 2021

Kidney Cancer

Incidence	In 2022, the crude incidence rate of kidney cancer in Korea was 13.6 per 100,000 population, with a total of 6,963 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of kidney cancer in Korea was 53.8 per 100,000 population, with a total of 27,598 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for kidney cancer in Korea was 87.3%. [1]
Gender	Among the 5-year prevalent cases of kidney cancer in 2022, 19,104 (69.2%) were male and 8,494 (30.8%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of kidney cancer by age group was as follows: 0–4 years: 28; 5–9 years: 58; 10–14 years: 8; 15–19 years: 16; 20–24 years: 46; 25–29 years: 199; 30–34 years: 440; 35–39 years: 831; 40–44 years: 1,632; 45–49 years: 2,137; 50–54 years: 2,877; 55–59 years: 3,274; 60–64 years: 4,329; 65–69 years: 4,125; 70–74 years: 3,196; 75–79 years: 2,294; 80–84 years: 1,474; 85 years and older: 634. [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 21,505 cases (45.1%), Busan: 2,469 cases (5.2%), Incheon: 2,510 cases (5.3%), Daegu: 2,901 cases (6.1%), Gwangju: 774 cases (1.6%), Daejeon: 934 cases (2.0%), Ulsan: 651 cases (1.4%), Gyeonggi: 8,733 cases (18.3%), Gangwon: 671 cases (1.4%), Chungbuk: 580 cases (1.2%), Chungnam: 711 cases (1.5%), Jeonbuk: 1,030 cases (2.2%), Jeonnam: 1,474 cases (3.1%), Gyeongbuk: 578 cases (1.2%), Gyeongnam: 1,893 cases (4.0%), Jeju: 242 cases (0.5%), Sejong: 84 cases (0.2%). [2]
Clinical phenotypes/ Classification	In the current study, after performing subgroup analysis according to the histologic type (clear vs. non-clear cell type Renal Cell Carcinoma), we also found very high accuracy and F1-score in all tested metrics. Taking together, these findings suggest that the prognostic difference between clear and non-clear cell type renal cell carcinoma seems to be offset both in metastatic and non-metastatic renal cell carcinoma. [3]
Clinical manifestation	The most common symptom was incidentally detected renal mass (4,048 cases, 76.9%), and the 2nd most common was gross hematuria, which accounted for 10.4%. [4]
Risk factor	Hypertension, diabetes mellitus and chronic kidney disease (defined as grade 3 or more) were identified in 38.5%, 14.9%, and 19.4% of the patients, respectively. [4]
Diagnosis	Clinical T1a was the most common (54.3%) stage, and the mean tumor size was 4.8±4.2 cm. T1a accounted for 55.2% of the total cases. The most common nuclear grade was

	Fuhrman grade 2 (51.8%) and the most common histological type was clear cell (85.2%). Positive surgical margins were identified in 4.0% of the patients undergoing partial nephrectomy. [4]
Treatment	Radical nephrectomy accounted for 62.7% of the total cases, and an open approach was used in 50.7% and 52.2% of radical and partial nephrectomies, respectively. Warm ischemia was the most common type of ischemia (83.0%) and mean ischemic time was 25.2±11.3 minutes. [4]
Prognosis	Multivariable analysis demonstrated body mass index greater than or equal to 23 and less than 30 (vs. less than 23, hazard ratio [HR]: 0.707, P = 0.020) reduced recurrence one year postoperatively. Eastern Cooperative Oncology Group performance status (ECOG PS) greater than or equal to 1 (vs. ECOG PS 0, HR: 1.548, P = 0.007), high pathological T stage (pT2 vs. pT1, HR: 2.622, P < 0.001; pT3 vs. pT1, HR: 4.256, P < 0.001; pT4 vs. pT1, HR: 4.558, P < 0.001), and tumor necrosis (vs. no tumor necrosis, HR: 2.822, P < 0.001) were independent predictive factors for early recurrence within one year in patients with renal cell carcinoma. [5] Overall survival rates at 3, 5, and 10 years were 94.2%, 90.6%, and 71.9%, respectively; and the recurrence-free rates were 85.2%, 78.8% and 45.3%, respectively. [3]
Genetic information	MDM2 mRNA levels were significantly higher in renal cell carcinoma patients compared to controls and varied among the MDM2 rs2279744 genotypes, with the GG genotype exhibiting the highest expression levels in both Renal Cell Carcinoma patients and controls. [6]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD)*. https://www.koicd.kr/main.do. 2023. [3] Machine learning based prediction for oncologic outcomes of renal cell carcinoma after surgery using Korean Renal Cell Carcinoma (KORCC) database. Sci Rep 13, 5778 (2023). [4] The establishment of KORCC (Korean Renal Cell Carcinoma) database. Investig Clin Urol. 2016 Jan;57(1):50-57. [5] Retrospective Multicenter Analysis of Prognostic Risk Factors for One Year Recurrence in Patient With Renal Cell Carcinoma After Partial or Radical Nephrectomy: Results of Korean Renal Cancer Study Group (KRoCS) Database. J Korean Med Sci. 2023 Dec;39(3):e11. [6] Genetic Variations in MDM2 Gene Contribute to Renal Cell Carcinoma Susceptibility: A Genotype–Phenotype Correlation Study. Cancers. 2025; 17(2):177.

Liver Cancer

Incidence	In 2022, the crude incidence rate of liver cancer in Korea was 29.1 per 100,000 population, with a total of 14,913 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of liver cancer in Korea was 76.2 per 100,000 population, with a total of 39,084 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for liver cancer in Korea was 39.4%. [1]
Gender	Among the 5-year prevalent cases of liver cancer in 2022, 29,319 (75.0%) were male and 9,765 (25.0%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of liver cancer by age group was as follows: 0–4 years: 59; 5–9 years: 18; 10–14 years: 6; 15–19 years: 12; 20–24 years: 14; 25–29 years: 30; 30–34 years: 70; 35–39 years: 279; 40–44 years: 816; 45–49 years: 1,482; 50–54 years: 3,155; 55–59 years: 4,810; 60–64 years: 6,789; 65–69 years: 6,733; 70–74 years: 5,706; 75–79 years: 4,504; 80–84 years: 3,211; 85 years and older: 1,387. [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 41,458 cases (44.6%), Busan: 5,807 cases (6.2%), Incheon: 2,929 cases (3.2%), Daegu: 4,871 cases (5.2%), Gwangju: 2,170 cases (2.3%), Daejeon: 2,064 cases (2.2%), Ulsan: 1,345 cases (1.4%), Gyeonggi: 14,148 cases (15.2%), Gangwon: 1,899 cases (2.0%), Chungbuk: 1,227 cases (1.3%), Chungnam: 1,703 cases (1.8%), Jeonbuk: 2,278 cases (2.5%), Jeonnam: 3,782 cases (4.1%), Gyeongbuk: 1,922 cases (2.1%), Gyeongnam: 4,361 cases (4.7%), Jeju: 780 cases (0.8%), Sejong: 163 cases (0.2%). [2]
Clinical phenotypes/ Classification	A total of 1,595 patients with Hepatocellular Carcinoma (HCC) were analyzed; they were classified into the hepatitis B virus (HBV) group (1,183 [74.2%]), hepatitis C virus (HCV) group (146 [9.2%]), and non-B non-C (NBNC) group (266 [16.7%]). The median overall survival of all patients was 74 months. The survival rates at 1, 3, and 5 years were 78.8%, 62.0% and 54.9% in the HBV group; 86.0%, 64.0%, and 48.6% in the HCV group; and 78.4%, 56.5%, and 45.9% in the NBNC group, respectively. NBNC-HCC has a poorer prognosis than other causes of HCC. [3]
Clinical manifestation	The included studies were from the United States (n = 4), China (n = 6), Korea (n = 2), Thailand (n = 1), and Uganda (n = 1). Prevalent physical symptoms included fatigue, lack of energy, stomach pain/distension, loss of appetite, changes in taste, and sleep disturbance. Most prevalent psychological symptoms were distress and sadness. More severe symptoms included fatigue, loss of energy, and sadness. [4]

Risk factor	The increasing proportion of non-viral etiologies (from 33.7% in 2016 to 35.1% in 2018) aligns with global trends and reflects the changing landscape of HCC risk factors. Indeed, metabolic dysfunction-associated steatotic liver disease (MASLD) is the fastest growing cause of HCC in many parts of the world, including the USA and parts of Europe, with projected dramatic increases by 2030 (82%, 117%, and 122% from 2016 in China, France, and the USA, respectively). Although MASLD was not included as a distinct etiologic variable in our 2016-2018 registry, the proportion of MASLD-related HCC is expected to increase progressively in South Korea. [5]
Diagnosis	In terms of tumor factors, single tumors were observed in 63.4% of patients, with a median maximal tumor diameter of 3.3 cm (IQR, 2.2-6.9). Baseline imaging revealed portal vein invasion in 22.4% of patients and hepatic vein invasion in 5.1%. Lymph node and distant metastases were present in 5.8% and 9.4% of patients, respectively. Based on the modified Union for International Cancer Control (mUICC) staging system, 16.8%, 38.0%, 24.9%, 10.8%, and 9.4% of patients were in stages I, II, III, IV-A, and IV-B, respectively. According to the BCLC staging system, stage C was the most prevalent (39.0%), followed by stages A (28.8%), 0 (14.9%), D (9.8%), and B (7.5%). [5]
Treatment	Among the initial treatment modalities, surgical interventions, including surgical resection (n=1,095, 24.9%) and liver transplantation (n=40, 0.9%), were performed in 25.8% of patients. Local ablation therapy was used in 10.5% (n=460) of the cases. The most frequently employed initial treatment was transarterial therapy (n=1,393, 31.7%), with conventional transarterial chemoembolization being the predominant treatment (n=1,208). Sorafenib was the main agent used in 6.1% (n=267) of the patients who received systemic chemotherapy (n=242). The best supportive care was provided to 18.9% (n=831) of the patients. [5] *Our analysis demonstrated that patients with The Barcelona Clinic Liver Cancer (BCLC) stage 0-A had superior survival outcomes when treated according to the BCLC guideline-recommended therapies. However, patients with BCLC stages B and C who received treatment beyond the guideline recommendations had better survival rates than those who strictly adhered to the guidelines. These findings suggest that a more individualized treatment approach is beneficial for selecting patients with intermediate- to advanced-stage HCC. In line with this observation, the 2022 Korean Liver Cancer Association guidelines advocate broader treatment options for carefully selected cases. [5]
Prognosis	The median overall survival (OS) was 3.72 years (95% confidence interval [CI], 3.44-4.14), with 1-, 3-, and 5-year OS rates of 71.3%, 54.1%, and 44.3%, respectively. The survival curves demonstrated significant differences according to the Child-Turcotte-Pugh (CTP) class, mUICC stage, and BCLC stage (all log-rank tests, P<0.001). Post hoc analyses of log-rank tests for multiple comparisons revealed significant survival differences

	between all CTP classes and HCC stages (all pairwise log-rank comparisons, P<0.001). [5]
Genetic information	In the development population, PTEN rs1903860 C allele, rs1903858 G allele, and rs2299941 G allele were associated with a low risk of HCC. The haplotype A-T-A-A-A was associated with an increased risk of HCC (recessive model; odds ratio=2.277, 95% confidence interval [CI] =1.144-4.532, P=0.019). In the validation population, PTEN rs2299941 G allele was the only significant protective genetic polymorphism related to HCC development after adjustment for age and sex (hazard ratio=0.582, 95% CI =0.353-0.962, P=0.035). [6]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD)*. https://www.koicd.kr/main.do. 2023. [3] Clinical characteristics and prognosis of Korean patients with hepatocellular carcinoma with respect to etiology. J Liver Cancer. 2022 Sep;22(2):158-166. [4] Symptoms and symptom clusters in patients with hepatocellular carcinoma and commonly used instruments: An integrated review. Int J Nurs Sci. 2023 Sep 21;11(1):66-75. [5] Hepatocellular carcinoma in Korea: an analysis of the 2016-2018 Korean Nationwide Cancer Registry, J Liver Cancer. 2025;25(1):109-122. Published online March 4, 2025 [6] Effect of PTEN Polymorphism on the Development of Hepatitis B Virus-associated Hepatocellular Carcinoma, J Liver Cancer. 2019;19(1):46-54. Published online March 31, 2019

Lung Cancer

Incidence	In 2022, the crude incidence rate of lung cancer in Korea was 63.0 per 100,000 population, with a total of 32,313 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of lung cancer in Korea was 80,196 per 100,000 population, with a total of 156.5 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for lung cancer in Korea was 40.6%. [1]
Gender	Among the 5-year prevalent cases of lung cancer in 2022, 47,810 (59.6%) were male and 32,386 (40.4%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of lung cancer by age group was as follows: 0–4 years: 3; 5–9 years: 2; 10–14 years: 3; 15–19 years: 9; 20–24 years: 35; 25–29 years: 87; 30–34 years: 204; 35–39 years: 402; 40–44 years: 1,002; 45–49 years: 1,814; 50–54 years: 3,809; 55–59 years: 6,587; 60–64 years: 12,087; 65–69 years: 15,042; 70–74 years: 14,759; 75–79 years: 12,207; 80–84 years: 8,658; 85 years and older: 3,493. [1]
Regional distribution	In the case of lung cancer, the number of patients by medical institution region in 2023 was as follows: Seoul: 64,811 cases (43.5%), Busan: 7,788 cases (5.2%), Incheon: 4,912 cases (3.3%), Daegu: 8,107 cases (5.4%), Gwangju: 2,496 cases (1.7%), Daejeon: 3,692 cases (2.5%), Ulsan: 1,989 cases (1.3%), Gyeonggi: 26,610 cases (17.8%), Gangwon: 3,046 cases (2.0%), Chungbuk: 2,587 cases (1.7%), Chungnam: 3,064 cases (2.1%), Jeonbuk: 3,575 cases (2.4%), Jeonnam: 5,895 cases (4.0%), Gyeongbuk: 3,204 cases (2.1%), Gyeongnam: 5,998 cases (4.0%), Jeju: 969 cases (0.6%), Sejong: 457 cases (0.3%). [2]
Clinical phenotypes/ Classification	PD-L1 expression determined by Tumor Proportion Score (TPS) was detected using 22C3 pharmDx (Agilent Technologies) and SP263 (Ventana Medical Systems) assays. In total, 116 (42%) and 58 (21%) patients had TPS ≥1% and ≥50%, respectively. The patients were significantly older in TPS ≥1% group than in TPS <1% group (64.83±9.38 years vs. 61.73±10.78 years, p=0.014), not in TPS ≥50% cutoff value (64.69 ± 9.39 vs. 62.36 ± 10.51, p= 0.178). Regarding histologic grade, higher proportions of poorly differentiated tumor were observed in the TPS ≥1% (40.8% vs. 25.8%, p=0.020) and TPS ≥50% groups (53.2% vs. 27.2%, p=0.004). [3]
Clinical manifestation	Cough was the most common initial symptom (33.5%); 13.1% of patients were asymptomatic. [4]

Risk factor	In multivariable analysis, using individuals aged 40–49 years as the reference group, those under 40 years had a significantly lower risk (hazard ratio [HR], 0.45; 95% confidence interval [CI], 0.30–0.66), while individuals aged 50–59 years had a 4.30-fold higher risk (95% CI, 3.02–6.10), and those aged 60 years or older had an 8.40-fold higher risk (95% CI, 5.66–12.46). Regarding body mass index (BMI), individuals with a BMI below 18.5 kg/m^2 had a 2.43-fold increased risk (95% CI, 1.38–4.28) compared to those with a normal BMI of 18.5–25 kg/m^2. For smoking status, compared to never smokers, former smokers with a smoking history of ≥20 pack-years had a 2.33-fold increased risk (95% CI, 1.37–3.97), and current smokers with ≥20 pack-years had a 3.31-fold increased risk (95% CI, 1.99–5.50). [5]
Diagnosis	In the overall population, the most frequent histological subtype was adenocarcinoma (48.7%), followed by squamous cell carcinoma (27.2%) and small cell lung cancer (11.5%). While squamous cell carcinoma (37.2%) was the leading subtype in male patients, adenocarcinoma showed the highest incidence in female patients, accounting for 76.3% of lung cancers. [6]
Treatment	In patients with non-small cell lung cancer, 47.2% of patients underwent surgery, followed by chemotherapy (27.9%) and radiation therapy (23.7%), after initial diagnosis. By contrast, chemotherapy (69.8%) was the most common treatment modality in patients with small cell lung cancer and only four patients received surgery after the initial diagnosis. [6]
Prognosis	During follow-up, there were 277 patient deaths (56.6%). The non-survival group was characterized by older age, a higher proportion of males, lower median BMI, and a higher proportion of ever-smokers when compared with the surviving group. In addition, the non-survival group had fewer asymptomatic patients, lower performance status, and a higher incidence of metastatic disease than patients who survived the follow-up period. The surviving group had a higher proportion of patients who received treatment, particularly surgery. [6]
Genetic information	In the meta-analysis, rs2131877 at the chromosome 3q29 region was the most significant biomarker of lung cancer susceptibility in Koreans ($P = 2.43 \times 10-8$). [7] A study conducted a two-stage genome-wide association study of lung adenocarcinoma of East Asian ancestry (21,658 cases and 150,676 controls; 54.5% never-smokers). Transcriptome-wide association analyses together with colocalization studies using a Taiwanese lung expression quantitative trait loci dataset ($n = 115$) identified novel candidate genes, including FADS1 at 11q12 and ELF5 at 11p13. In a multi-ancestry meta-analysis of East Asian and European studies, four loci were identified at 2p11, 4q32, 16q23, and 18q12. At the same time, most of our findings in East Asian populations showed no evidence of association in European populations. [8]

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Malignant Melanoma

Incidence	In 2022, the crude incidence rate was 1.3 per 100,000 population, with a total of 673 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence in Korea was 4.7 per 100,000 population, with a total of 2,417 prevalent cases reported. [1]
Mortality	The 1-, 2-, and 5-year overall survival for the entire group was 63.3%, 55.4%, and 51.9%, respectively. The mean survival time was 83.9 months (95% CI, 64.7–103.1) and the median OS was 65.4 months (95% CI, 13.5–117.4). [2]
Gender	Among the 5-year prevalent cases of malignant melanoma of the skin in 2022, 1,164 (48.2%) were male and 1,253 (51.8%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of malignant melanoma by age group was as follows: 0–4 years: 3; 5–9 years: 3; 10–14 years: 1; 15–19 years: 2; 20–24 years: 8; 25–29 years: 21; 30–34 years: 32; 35–39 years: 53; 40–44 years: 76; 45–49 years: 134; 50–54 years: 154; 55–59 years: 204; 60–64 years: 325; 65–69 years: 324; 70–74 years: 295; 75–79 years: 292; 80–84 years: 279; 85 years and older: 211. [1] The mean age of the patients was 62 ± 15.8 years (range, 21–99 years). [2]
Regional distribution	In the case of malignant melanoma, the number of patients by medical institution region in 2023 was as follows: Seoul: 2,392 cases (38.8%), Busan: 274 cases (4.4%), Incheon: 212 cases (3.4%), Daegu: 415 cases (6.7%), Gwangju: 179 cases (2.9%), Daejeon: 143 cases (2.3%), Ulsan: 77 cases (1.2%), Gyeonggi: 1,000 cases (16.2%), Gangwon: 145 cases (2.4%), Chungbuk: 69 cases (1.1%), Chungnam: 129 cases (2.1%), Jeonbuk: 153 cases (2.5%), Jeonnam: 268 cases (4.3%), Gyeongbuk: 132 cases (2.1%), Gyeongnam: 222 cases (3.6%), Jeju: 333 cases (5.4%), Sejong: 21 cases (0.3%). [3]
Clinical phenotypes/ Classification	Of the 341 patients with CMM, only 22 (6.5%) were between the age of 10~39 and 250 (73.3%) were aged 50~79. Acral lentiginous melanoma (ALM) was the most common clinical subtype in both groups (45.5% and 71.2%, respectively). Subungual melanoma was more common in age 10~39 years (27.3% vs. 17.2%), whereas ALM except subungual melanoma was more common in age 50~79 years (18.2% vs. 54.0%). Superficial spreading melanoma (31.8%) was also a significant subtype observed in age 10~39 years ($p<0.001$). Frequently involved locations in age group 10~39 were fingers (27.3%) and trunk (22.7%), but feet (40.8%) were common in age group 50~79 ($p=0.009$). [4]

Clinical manifestation	Malignant melanoma of the skin often lacks subjective symptoms such as itching or pain, and it may appear as an ordinary dark spot or nodule, making early diagnosis difficult in many cases. However, malignancy should be suspected if a new dark spot appears, or if an existing pigmented nevus shows changes in shape, size, or color; develops itching, stinging, or pain; or exhibits surface changes such as bleeding, ulceration, or crust formation. The appearance of satellite lesions may also indicate malignancy. [5] A Breslow thickness of >4 mm was seen in 94 (47.0%) patients and visible or microscopical ulceration was noted in 122 (60.7%) patients at presentation. [6]
Risk factor	Among the 313 acral melanoma patients, many reported a traumatic event (84 of 313; 26.8%) or physical stress (91 of 313; 29.1%) before the melanoma developed. Farmer and fisherman were the most common occupations (130 of 313; 41.5%) of the acral melanoma patients. [7] Higher T stages emerged as an independent prognostic factor for positive SLN biopsy (OR 1.93; 95% CI, 1.12–3.47; p = .022), along with heavy pigmentation (OR 13.14; 95% CI, 2.96–95.20; p = .002). [8]
Diagnosis	A total of 109 patients (41.8%) had metastasis of the melanoma in the brain, gastrointestinal tract, liver, lung, or distant lymph node at diagnosis or during the follow-up period. The first location of metastases was the brain in 20 (7.7%), liver and gastrointestinal tract in 33 (12.6%), lung in 31 (11.9%), and extra-regional distant lymph node plus others in 25 (9.6%) patients. [2]
Treatment	Eight patients (6.3%) exhibited brain metastasis. immune checkpoint blocker (ICB) monotherapy was administered to 71 patients (55.9%); the remaining 56 patients (44.1%) received combination therapy with ICB and palliative RT. Twenty patients (15.7%) underwent salvage or palliative resection of the metastatic tumor, of whom 11 showed no evident disease at the time of ICB administration. Among the 127 patients, 31 received ipilimumab for CTLA-4 inhibition and 96 received pembrolizumab (n=90) or nivo-lumab (n=6) for PD-1 inhibition. One to 33 cycles of ICB therapy were administered, with a median of three cycles. Eighty patients (64%) received ICB therapy as first-line systemic therapy after recurrence (n=64) or initial therapy after diagnosis (n=16). [9]
Prognosis	The median OS from the time of detection of any metastasis was only 7.8 months (95% CI, 6.1–9.4) and the mean survival was 9.9 months (95% CI, 8.1–11.7). The 1-year OS of stage IV patients was 28.6% and the 2-year OS was 14.3%. By Cox regression, the median OS is showed to have increased 17.7-fold without metastasis ($P < 0.001$). We found that MM patients with brain metastasis had the lowest median OS, of only 2.79 months (95% CI, 0.69–4.89), followed by patients with metastases in the liver and gastrointestinal

	tract (median OS of 5.96 months; 95% CI, 4.39–7.53) and lung metastases (median OS, 7.50 months, 95% CI, 3.42–11.58). [2]
Genetic information	A study retrospectively reviewed clinicopathologic and genetic features of 47 Korean patients diagnosed with cutaneous melanomas. Genetic features in Western cohorts of melanoma were then compared with previous studies performed in the USA: Cohort 1 (n=556), Cohort 2 (n=79), and Cohort 3 (n=38). BRAF V600 mutation was most frequent (11/47, 23.4%), but was significantly lower compared to Cohort 1 (240/556, 43.2%) and Cohort 2 (34/79, 43.0%) (p=0.0300). CNV analysis identified amplifications in chromosomes 12q14.1-12q15 (11/47, 23.4%) including CDK4 and MDM2 genes and 11q13.3 (9/47, 19.2%) including CND1, FGF19, FGF3, and FGF4 genes more frequently in the present study population than Cohort 1 (p<0.0001). [10]
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Osteosarcoma

Incidence	In 2022, the crude incidence rate of osteosarcoma in Korea was 0.9 per 100,000 population, with a total of 464 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of osteosarcoma in Korea was 3.7 per 100,000 population, with a total of 1,919 prevalent cases reported. [1]
Mortality	By Kaplan-Meier method, 5- and 10-year overall survival (OS) rates of the whole patients were 67.6% (65.8% - 69.4%) and 39.3% (37.1% - 41.5%), and 5- and 10-year event-free survival rates (EFS) of them were 60.2% (58.2% - 62.1%) and 36.4% (34.2% - 38.6%), respectively. [2]
Gender	Among the 5-year prevalent cases of osteosarcoma in 2022, 1,040 (54.2%) were male and 879 (45.8%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of osteosarcoma by age group was as follows: 0–4 years: 5; 5–9 years: 41; 10–14 years: 114; 15–19 years: 134; 20–24 years: 104; 25–29 years: 101; 30–34 years: 91; 35–39 years: 104; 40–44 years: 142; 45–49 years: 144; 50–54 years: 163; 55–59 years: 158; 60–64 years: 186; 65–69 years: 164; 70–74 years: 111; 75–79 years: 69; 80–84 years: 56; 85 years and older: 32. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	There were 290 patients with 20 - 40 years of age, 60 patients aged 19 or younger, and 29 patients aged 41 or older. Proportion of metastasis at diagnosis was significantly highest in 20 - 40 years of age group. For the age at diagnosis, older patients presented poorer 5-year OS and EFS rates, but for 10-year, 20 - 40 years of age group showed unusually better prognosis than younger age’s, with statistical significance in OS rates but not in EFS rates. [2]
Clinical manifestation	Twenty-one of 26 patients had osteosarcoma of the mandible, and 5 of 26 patients had osteosarcoma of the maxilla. Clinical manifestations observed in the study included swelling in 22 patients, pain in 7 patients, numbness in 5 patients, and tooth mobility in 2 patients. Swelling was the most common presenting symptom. [3]
Risk factor	Osteosarcoma is a rare tumor diagnosed at any age; however, younger age is a common risk factor. In addition, multiple factors are believed to contribute to higher rates of osteosarcoma, particularly race and gender. In global study, The earliest observation of positive correlation between a patient's height and risk of osteosarcoma was published by Fraumeni in the 60-s and was later confirmed by multiple studies. Meta-analysis

	demonstrated that “taller-than-average” and “very tall” individuals are at an increased risk of developing osteosarcoma. [4]
Diagnosis	For location of primary lesion, extremities counted for the most proportion in a whole group with 343 cases (90.5%), following 24 cases (6.33%) at pelvis, and 12 cases (3.17%) at other parts such as rib, vertebra, or mandible, etc. For metastasis at diagnosis, 107 patients (28.2%) were found to have metastasis when osteosarcoma was diagnosed. [2]
Treatment	From September 1986 to July 2015, a total of 379 patients (220 males and 159 females) were newly diagnosed as osteosarcoma. All the patients had undergone an open biopsy, neoadjuvant chemotherapy, surgery, and adjuvant chemotherapy as scheduled treatment protocols widely accepted based on the results of multi-institutional prospective trials. [2] As for treatments, 71.2% of adolescents and young adults received local treatment and systemic chemotherapy, and 28.8% received only local treatment (surgery: 261, radiotherapy: 9, surgery and radiotherapy: 5). [3]
Prognosis	Primary pelvic lesion and poor histologic response were significantly unfavorable prognostic factors. [2] Survival analysis of 3017 patients revealed a 5-year OS rate of 61%. OS was inversely correlated with age and abruptly decreased in adults (46%) and elderly individuals (25%). [4]
Genetic information	Blood and tissue samples from 48 osteosarcoma patients were obtained, and the following polymorphisms were analyzed; SLC19A1 80G>A, DHFR 829C>T, MTHFR 677C>T, MTHFR 1298A>C, and ATIC 347C>G. Patients with ATIC 347C>G exhibited a good histologic response to chemotherapy (odds ratio, 0.13; 95% confidence interval, 0.017-0.978; P=0.048). [5]
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Ovarian Cancer

Incidence	In 2022, the crude incidence rate of ovarian cancer in Korea was 6.4 per 100,000 population, with a total of 3,263 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of ovarian cancer in Korea was 23.6 per 100,000 population, with a total of 12,121 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for ovarian cancer in Korea was 65.8%. [1]
Gender	NA
Age	As of 2022, the number of 5-year prevalent cases of ovarian cancer by age group was as follows: 0–4 years: 1; 5–9 years: 16; 10–14 years: 45; 15–19 years: 97; 20–24 years: 203; 25–29 years: 276; 30–34 years: 354; 35–39 years: 429; 40–44 years: 802; 45–49 years: 1,283; 50–54 years: 1,965; 55–59 years: 1,826; 60–64 years: 1,719; 65–69 years: 1,161; 70–74 years: 852; 75–79 years: 557; 80–84 years: 357; 85 years and older: 178. [1]
Regional distribution	In the case of ovarian cancer, the number of patients by medical institution region in 2023 was as follows: Seoul: 11,372 cases (38.3%), Busan: 1,818 cases (6.1%), Incheon: 909 cases (3.1%), Daegu: 1,576 cases (5.3%), Gwangju: 420 cases (1.4%), Daejeon: 718 cases (2.4%), Ulsan: 383 cases (1.3%), Gyeonggi: 7,610 cases (25.7%), Gangwon: 559 cases (1.9%), Chungbuk: 367 cases (1.2%), Chungnam: 540 cases (1.8%), Jeonbuk: 644 cases (2.2%), Jeonnam: 891 cases (3.0%), Gyeongbuk: 435 cases (1.5%), Gyeongnam: 1,108 cases (3.7%), Jeju: 156 cases (0.5%), Sejong: 159 cases (0.5%). [2]
Clinical phenotypes/ Classification	In our direct sequencing analysis of BRCA1/2 genes in the 279 unselected epithelial ovarian cancer (EOC) patients, pathogenic BRCA1 and BRCA2 mutations were observed in 35 (12.6%) and 11 (3.9%) cases, respectively. The overall prevalence of BRCA1/2 mutations in KoOC patients was 16.5%. Patients with BRCA1/2mutations exhibited significantly higher rates of FH of breast or ovarian cancer (45.7%) and other cancers (39.1%) compared with those without BRCA1/2 mutations (16.7% for FH of breast or ovarian cancer; 18.5% for FH of other cancers; both, $p < 0.001$). The occurrence of serous histology was significantly higher in patients with BRCA1/2 mutations (91.3%) than in those without BRCA1/2 mutations (68.7%, $p=0.002$). [3]
Clinical manifestation	The most common symptoms were pelvic pain followed by gastrointestinal symptoms, palpable mass, abdominal distension, vaginal bleeding, and newly developed or exacerbated dysmenorrhea (18.1%) and dyspareunia (13.6%). Notably, dysmenorrhea

	and dyspareunia were frequently observed in patients with endometriosis. Among 210 patients identified with pretreatment serum CA-125, 54 (25.7%) displayed normal CA-125 levels (<35 units/mL) and 23.3% and 29.9% of patients without and with endometriosis had normal CA-125 levels, respectively (P = 0.381). [4]
Risk factor	HRs (95% CIs) for ovarian cancer were 1.16 (1.00–1.33), 1.19 (1.03–1.37), and 1.49 (1.12–1.98) for BMIs of 23.0–24.9, 25.0–29.9, and ≥ 30 kg/m2 compared to BMI of 18.5–22.9 kg/m2 (P for trend = 0.002). [5] Based on data from the Asia Cohort Consortium (1958–2015), A study observed an inverse association with parity (5+ children vs. 0, HR = 0.44, 95% CI = 0.28–0.68, Ptrend < 0.001), and a positive association with increasing menopausal age (55+ years vs. <45, HR = 1.77, 95% CI = 1.05–3.01, Ptrend = 0.02) for risk of all epithelial ovarian cancer. [6]
Diagnosis	Serous adenocarcinoma accounted for around half (48.1%) of all ovarian cancer, followed by mucinous (16.2%), endometrioid (9.2%), and clear cell adenocarcinoma (9.0%). Around half (48.5%) were diagnosed in the distant stage, and 18.0% and 26.7% were diagnosed in the regional and localized stages, respectively. Overall, younger people had more non-serous type ovarian cancers (mucinous, endometrioid, and clear cell), and the localized stage was more common with non-serous types of ovarian cancer. [7]
Treatment	The committee of ovarian cancer of the Korean Society of Gynecologic Oncology (KSGO) provided and updated the practice guideline for ovarian cancer in 2021, in which the use of PARP inhibitors, bevacizumab, and IP plus IV chemotherapy in newly diagnosed advanced EOC or platinum-sensitive recurrent EOC was addressed. [8] Patients who received surgery only showed high 5-year relative survival (RS) from the time of diagnosis (73.3%) and reached >90% after 5 years. Those who had surgery + chemotherapy showed 62.6% of 5-year RS at diagnosis, and it increased to 80.2% after 5 years. Those who received chemotherapy only showed the poorest survival rate of 31.4% at diagnosis, but this rapidly increased and reached >95% when they survived for 5 years. [7]
Prognosis	For all ovarian patients, the 5-year and 10-year RS at the time of diagnosis were 61.1% and 51.1%, respectively. The probability of surviving an additional 5 years conditioned on having already survived 1, 2, 3, 4, and 5 years after diagnosis was 65.0, 69.5, 74.6, 79.3, and 83.9%, respectively. [7]
Genetic information	BRCA1 mutations were more prevalent than BRCA2 mutations, with a BRCA1-to-BRCA2 prevalence ratio of 3.6:1. Of the 111 BRCA1/2 mutations, 55 distinct mutations were identified, including 39 BRCA1 and 16 BRCA2 mutations. Among these pathologic 55 mutations, 24 (43.6%) were specific to Korean women and have not been previously reported in the Breast Cancer Information Core database. Nineteen distinct mutations

	(19/55 distinct, 34.5%) were recurrent and were detected in at least two unrelated patients. Of these recurrent mutations, five were highly recurrent and were found more than five times in unrelated patients: c.3627insA (n=14), c.390C>A (n=8), c.922_923AGCinsT (n=5), c.5339T>C (n=5), and c.3442delG (n=5). [3]
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Pancreatic Cancer

Incidence	In 2022, the crude incidence rate of pancreatic cancer in Korea was 19.1 per 100,000 population, with a total of 9,780 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of pancreatic cancer in Korea was 29.3 per 100,000 population, with a total of 15,001 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for pancreatic cancer in Korea was 16.5%. [1]
Gender	Among the 5-year prevalent cases of pancreatic cancer in 2022, 7,656 (51.0%) were male and 7,345 (49.0%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of pancreatic cancer by age group was as follows: 0–4 years: 1; 5–9 years: 8; 10–14 years: 27; 15–19 years: 53; 20–24 years: 60; 25–29 years: 133; 30–34 years: 154; 35–39 years: 215; 40–44 years: 401; 45–49 years: 553; 50–54 years: 978; 55–59 years: 1,447; 60–64 years: 2,386; 65–69 years: 2,636; 70–74 years: 2,308; 75–79 years: 1,876; 80–84 years: 1,231; 85 years and older: 534. [1]
Regional distribution	In the case of pancreatic cancer, the number of patients by medical institution region in 2023 was as follows: Seoul: 14,414 cases (39.9%), Busan: 2,008 cases (5.6%), Incheon: 1,165 cases (3.2%), Daegu: 1,797 cases (5.0%), Gwangju: 889 cases (2.5%), Daejeon: 877 cases (2.4%), Ulsan: 568 cases (1.6%), Gyeonggi: 6,904 cases (19.1%), Gangwon: 814 cases (2.3%), Chungbuk: 687 cases (1.9%), Chungnam: 796 cases (2.2%), Jeonbuk: 923 cases (2.6%), Jeonnam: 1,271 cases (3.5%), Gyeongbuk: 884 cases (2.5%), Gyeongnam: 1,718 cases (4.8%), Jeju: 243 cases (0.7%), Sejong: 119 cases (0.3%). [2]
Clinical phenotypes/ Classification	Overall, 9.9% of tumors (30 of 304) were immune inflamed, 85.2% (259 of 304) were immune excluded, and 4.9% (15 of 304) were immune desert. The immune-inflamed phenotype was associated with the most prolonged overall survival (OS) and relapse-free survival (RFS), followed by immune-excluded phenotype and immune-desert phenotype. High intratumoral tumor-infiltrating lymphocyte density was associated with longer OS (median, 52.47 months; 95% CI, 41.98-62.96; P = .004) and RFS (median, 21.67 months; 95% CI, 14.43-28.91; P = .02). [3]
Clinical manifestation	Early-stage pancreatic cancer may not cause noticeable symptoms, and by the time symptoms appear, the disease is often advanced. Moreover, there are no generally accepted screening techniques for pancreatic cancer, unlike several other malignancies.

	Despite these challenges, efforts must be made to detect and treat early pancreatic cancer. [4] Patients with stage 1A pancreatic cancer had more tumors in the body and tail than in the head (p = 0.028), more new-onset diabetes and less old diabetes (p = 0.010), and lower serum CA 19-9 level (p < 0.001) compared to patients with stage 1B pancreatic cancer. However, there were no differences in smoking, alcohol use, body mass index, or family history of pancreatic cancer between patients with stage 1A and 1B. [4]
Risk factor	Acute pancreatitis was significantly associated with an increased risk of pancreatic cancer throughout the study period (adjusted HR, 7.56 [95% confidence interval, 5.00–11.41]), which persisted for 2, 2–5, and > 5 years post-diagnosis (19.11 [9.60–38.05], 3.46 [1.35–8.33], and 2.73 [1.21–6.15], respectively). This pancreatitis-related pancreatic cancer risk became insignificant beyond 10 years of follow-up (1.24 [0.24–6.49]). [5]
Diagnosis	In the present study, the overall pancreatic cancer incidence in Korea also increased. By histologic subtype, the average annual percentage changes of endocrine cancers (13.9%) between 1999 and 2019 was highest, followed by cystic, including mucinous cancers (6.5%), acinar cell cancers (2.6%), and carcinoma excluding cystic cancers (1.0%). Although endocrine and cystic cancers accounted for small proportions of overall pancreatic cancer because of their rarity, increasing trends of these subtypes were also prevalent in previous studies. [6]
Treatment	In total, 8652 patients with metastatic pancreatic cancer were treated with chemotherapy. gemcitabine plus nab-paclitaxel (GnP) and FOLFIRINOX have been administered since 2016 and 2017, respectively. The median OS increased annually from 6 months in 2012–2013 to 10 months in 2018–2019. The median overall survivals in the GnP and FOLFIRINOX groups were significantly longer than those in patients receiving gemcitabine ± erlotinib. A total of 1134 patients from both the GnP and FOLFIRINOX groups were selected using propensity score matching. Before matching, the median OS was longer in the FOLFIRINOX group than in the GnP group (p = 0.0029). After matching, however, there was no significant difference in the median OS between the two groups (11 vs. 11 months, respectively, p = 0.2438). [7]
Prognosis	Patients with resectable pancreatic ductal adenocarcinoma who underwent upfront surgery between 2014 and 2017 (development set) or between 2018 and 2019 (test set) were retrospectively evaluated. In the development set, a risk-scoring system was developed using the multivariable Cox proportional hazards model, including variables associated with recurrence-free survival (RFS). The risk score included five variables predicting RFS: tumor size (hazard ratio [HR], 1.29 per 1 cm increment; P < 0.001), maximal standardized uptake values of tumor ≥ 5.2 (HR, 1.29; P = 0.06), suspicious regional lymph nodes (HR, 1.43; P = 0.02), possible distant metastasis on 18F-FDG

	PET/CT (HR, 2.32; P = 0.03), and CA 19-9 (HR, 1.02 per 100 U/mL increment; P = 0.002). In the test set, the risk score showed good performance in predicting RFS (C-index, 0.61), similar to that of the pathologic tumor stage (C-index, 0.64; P = 0.17). [8]
Genetic information	Potentially actionable mutations were identified in 27 patients (31.0%). Of these, mutations categorized as highly actionable and modifies options were identified in 12 (13.8%) and 18 patients (20.7%), respectively. The most frequent highly actionable mutations were located in DNA damage response genes, such as BRCA1, BRCA2, or ATM (n = 6, 6.9%). [9]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD).* https://www.koicd.kr/main.do. 2023. [3] Artificial Intelligence-Powered Spatial Analysis of Immune Phenotypes in Resected Pancreatic Cancer. JAMA Surg. 2025 Jun 25:e251999. [4] Characteristics of Early Pancreatic Cancer: Comparison between Stage 1A and Stage 1B Pancreatic Cancer in Multicenter Clinical Data Warehouse Study. Cancers. 2024; 16(5):944. [5] Risk of Pancreatic Cancer After Acute Pancreatitis: A Retrospective Analysis of the Korean National Sample Cohort. J Korean Med Sci. 2023 Dec;39(4):e21. [6] Epidemiology and survival analysis according to the histologic subtype of pancreatic cancer: a population-based cohort study. Ann Surg Treat Res. 2025 Jan;108(1):20-30. [7] Real-World Outcomes of First-Line Chemotherapy in Metastatic Pancreatic Cancer: A Nationwide Population-Based Study in Korea. Cancers. 2024; 16(18):3173. [8] Predicting Recurrence-Free Survival After Upfront Surgery in Resectable Pancreatic Ductal Adenocarcinoma: A Preoperative Risk Score Based on CA 19-9, CT, and 18F-FDG PET/CT. Korean J Radiol. 2024 Jul;25(7):644-655. [9] NGS-based targeted gene mutational profiles in Korean patients with pancreatic cancer. Sci Rep 12, 20937 (2022).

Prostate Cancer

Incidence	In 2022, the crude incidence rate of prostate cancer in Korea was 40.5 per 100,000 population, with a total of 20,754 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of prostate cancer in Korea was 157.0 per 100,000 population, with a total of 80,496 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for prostate cancer in Korea was 96.4%. [1]
Gender	NA
Age	As of 2022, the number of 5-year prevalent cases of prostate cancer by age group was as follows: 0–4 years: 1; 5–9 years: 0; 10–14 years: 0; 15–19 years: 3; 20–24 years: 0; 25–29 years: 2; 30–34 years: 4; 35–39 years: 3; 40–44 years: 65; 45–49 years: 188; 50–54 years: 917; 55–59 years: 2,880; 60–64 years: 8,701; 65–69 years: 14,448; 70–74 years: 17,942; 75–79 years: 17,201; 80–84 years: 12,618; 85 years and older: 5,523. [1]
Regional distribution	In the case of prostate cancer, the number of patients by medical institution region in 2023 was as follows: Seoul: 59,761 cases (38.9%), Busan: 9,135 cases (5.9%), Incheon: 5,403 cases (3.5%), Daegu: 9,731 cases (6.3%), Gwangju: 4,158 cases (2.7%), Daejeon: 4,465 cases (2.9%), Ulsan: 1,815 cases (1.2%), Gyeonggi: 27,353 cases (17.8%), Gangwon: 3,198 cases (2.1%), Chungbuk: 2,594 cases (1.7%), Chungnam: 3,271 cases (2.1%), Jeonbuk: 4,323 cases (2.8%), Jeonnam: 5,769 cases (3.8%), Gyeongbuk: 3,567 cases (2.3%), Gyeongnam: 7,418 cases (4.8%), Jeju: 1,328 cases (0.9%), Sejong: 498 cases (0.3%). [2]
Clinical phenotypes/ Classification	On multivariate analysis for castration-resistant prostate cancer, the significant variables were initial prostate-specific antigen (>40 ng/mL; 1 point), biopsy Gleason score (≥9; 1 point), clinical N1 (1 point), and non-regional lymph node (1 point), bone (1 point) and visceral (1 point) metastasis.The 5-year estimated castration-resistant prostate cancer/cancer-specific death rates were 10.3%/6.3% in the low-risk group, 48.4%/22.2% in the intermediate-risk group and 81.7%/53.1% in the high-risk group. [3]
Clinical manifestation	Based on risk parameters, a marked increase in high-risk cancer was observed among patients with low-risk disease (PSA < 10 ng/mL), who were divided into PSA tiers as follows: 4–5 ng/mL (P < 0.001), 5–6 ng/mL (P < 0.001), 6–7 ng/mL (P < 0.001), 7–8 ng/mL (P < 0.001), 8–9 ng/mL (P = 0.009), and 9–10 ng/mL (P < 0.001). In all PSA tiers between 4 and 10 ng/mL, multivariate analysis demonstrated a significantly higher prevalence of

	high-risk cancer in the oldest age group than in the youngest age group. In the lowest tier (4–5 ng/mL), 35.2% of those aged over 75 years had high-risk prostate cancer. [4]
Risk factor	Smokers had a lower risk of prostate cancer relative to non-smokers after adjustment for all listed variables (for <10 PY, aHR: 0.94, 95% CI: 0.88–1.01 and for PY $\geq$ 30, aHR: 0.93, 95% CI: 0.88–0.98). Type 2 diabetes mellitus (aHR: 0.89, 95% CI: 0.84–0.94) and hypertension (aHR: 1.11, 95% CI: 1.07–1.16) were associated with incident prostate cancer. Individuals who performed regular physical exercise showed increased risk of prostate cancer (aHR: 1.08, 95% CI: 1.03–1.13) after adjusting for all listed variables. [5]
Diagnosis	The median PSA was 9.09 (interquartile range [IQR], 5.62–25.06 ng/mL). Those with a Gleason score of 6 (32.3%) comprised the largest proportion in our cohort; 20 (3.0%) had very low risk, 77 (11.4%) had low risk, 202 (29.9%) had intermediate risk, 132 (19.6%) had high risk, 110 (16.3%) had very high risk, 37 (5.5%) had regional risk, and 97 (14.4%) had metastatic risk cancers. [6]
Treatment	Based on distribution according to initial management chosen by patients, men underwent different initial treatments as follows: 285 (42.2%) chose radical prostatectomy (RP), 257 (38.1%) chose radiotherapy (RT) plus androgen deprivation therapy (ADT), and 124 (18.4%) chose ADT. Nine (1.3%) patients enrolled in the active surveillance registry. No patients underwent neoadjuvant ADT before RP or underwent RT only. [6]
Prognosis	Age, fasting glucose and gamma-glutamyl transferase levels, current smoking, and multiple comorbidities were positively associated with mortality, whereas body mass index, alkaline phosphatase levels, total cholesterol levels, alcohol intake, physical activity, and household income were inversely associated with mortality. [7]
Genetic information	Genome-wide association analysis from our discovery cohort revealed 11 candidate single-nucleotide polymorphisms associated with prostate cancer showing statistical significance of $p < 5.0 \times 10-5$. Seven variants were located at 8q24.21 (rs1016343, rs16901979, and rs13252298 in PRNCR1; rs4242384, rs7837688, and rs1447295 in CASC8; and rs1512268 in NKX3). Two variants located within HNF1B (rs7501939 and rs4430796) had a significant negative association with prostate cancer risk [odds ratio (OR) = 0.717 and 0.747, $p = 6.42 \times 10-7$ and $3.67 \times 10-6$, respectively]. [8]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD).* https://www.koicd.kr/main.do. 2023.

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Thyroid Cancer

Incidence	In 2022, the crude incidence rate of thyroid cancer in Korea was 66.2 per 100,000 population, with a total of 33,914 newly diagnosed cases reported. [1]
Prevalence	In 2022, the 5-year prevalence of thyroid cancer in Korea was 307.2 per 100,000 population, with a total of 157,446 prevalent cases reported. [1]
Mortality	Between 2018 and 2022, the 5-year relative survival rate for thyroid cancer in Korea was 100.1%. [1]
Gender	Among the 5-year prevalent cases of thyroid cancer in 2022, 38,775 (24.6%) were male and 118,671 (75.4%) were female. [1]
Age	As of 2022, the number of 5-year prevalent cases of thyroid cancer by age group was as follows: 0–4 years: 0; 5–9 years: 5; 10–14 years: 63; 15–19 years: 397; 20–24 years: 2,008; 25–29 years: 6,420; 30–34 years: 12,044; 35–39 years: 15,591; 40–44 years: 22,383; 45–49 years: 20,561; 50–54 years: 21,213; 55–59 years: 18,142; 60–64 years: 17,115; 65–69 years: 10,455; 70–74 years: 5,715; 75–79 years: 3,217; 80–84 years: 1,580; 85 years and older: 537. [1]
Regional distribution	In the case of thyroid cancer, the number of patients by medical institution region in 2023 was as follows: Seoul: 175,638 cases (40.6%), Busan: 40,320 cases (9.3%), Incheon: 15,893 cases (3.7%), Daegu: 33,640 cases (7.8%), Gwangju: 10,616 cases (2.5%), Daejeon: 12,054 cases (2.8%), Ulsan: 8,221 cases (1.9%), Gyeonggi: 70,531 cases (16.3%), Gangwon: 5,071 cases (1.2%), Chungbuk: 4,393 cases (1.0%), Chungnam: 6,180 cases (1.4%), Jeonbuk: 12,010 cases (2.8%), Jeonnam: 14,875 cases (3.4%), Gyeongbuk: 5,210 cases (1.2%), Gyeongnam: 13,722 cases (3.2%), Jeju: 2,834 cases (0.7%), Sejong: 1,623 cases (0.4%). [2]
Clinical phenotypes/ Classification	A key factor contributing to the significant rise in thyroid cancer incidence is the increased detection of small papillary thyroid cancer (PTC). This type of cancer is relatively easy to diagnose using ultrasound and typically responds well to treatment. In Korea, PTC has been reported to account for up to 97% of cases. Radioactive iodine-refractory thyroid cancer and anaplastic thyroid cancer (ATC) are the leading causes of death from thyroid cancer. However, they represent less than 5% of cases. ATC is particularly concerning, as most of the cases after inoperable and it often leads to early mortality-typically within 1 year of diagnosis. In contrast, death from other types of thyroid cancer generally occurs 2 to 10 years after diagnosis. [3]

Clinical manifestation	The primary clinical presentations were as follows: among patients with follicular carcinoma, 117 cases (61.9%) presented with a cervical mass, 61 cases (32.3%) showed radiologic abnormalities of the thyroid, and 11 cases (5.8%) had masses in regions other than the neck (e.g., pelvis, scapula, spine). Among patients with Hürthle cell carcinoma, 7 cases (58.3%) presented with a cervical mass, 4 cases (33.3%) showed radiologic abnormalities of the thyroid, and 1 case (8.3%) had distant metastasis manifesting as a mass in the forearm. [4]
Risk factor	The adjusted odds ratios (95% confidence intervals) for the family histories of fathers, mothers, and siblings were 6.59 (2.05–21.21), 4.76 (2.59–8.74), and 9.53 (6.92–13.11), respectively, and were significant. [5]
Diagnosis	The results of preoperative fine-needle aspiration cytology for thyroid nodules were as follows: in cases of follicular carcinoma, 27 cases (14.3%) were reported as benign (e.g., adenomatous goiter, Hashimoto's thyroiditis), 104 cases (55.0%) as follicular neoplasm, 51 cases (27.0%) as atypia of undetermined significance, and 7 cases (3.7%) as malignant or suspicious for malignancy. In cases of Hürthle cell carcinoma, 6 cases (50.0%) were diagnosed as Hürthle cell neoplasm, 4 cases (33.3%) as follicular neoplasm, 1 case (8.3%) as suspicious for follicular neoplasm, and 1 case (8.3%) as atypia of undetermined significance with Hürthle cell features. [4]
Treatment	Among patients with follicular carcinoma, 58 cases (30.7%) underwent lobectomy alone, while 130 cases (68.8%) underwent total thyroidectomy. Of those classified under total thyroidectomy, 48 cases (25.4%) underwent initial total thyroidectomy, and 82 cases (43.4%) underwent completion thyroidectomy following an initial lobectomy. In one case (0.5%), total thyroidectomy with lateral neck dissection was performed as the initial surgery. Among patients with Hürthle cell carcinoma, 5 cases (41.7%) underwent lobectomy alone, and 6 cases (50.0%) underwent total thyroidectomy. Of those classified under total thyroidectomy, 3 cases (25.0%) had initial total thyroidectomy, and 3 cases (25.0%) underwent completion thyroidectomy after lobectomy. In one case (8.3%), total thyroidectomy with lateral neck dissection was performed as the initial surgery. Subsequently, radioactive iodine therapy was administered in 126 cases (66.7%) of follicular carcinoma and 7 cases (58.3%) of Hürthle cell carcinoma. [4]
Prognosis	The 10-year overall survival and disease-free survival rates for follicular carcinoma and Hürthle cell carcinoma were 96.5% and 89.1%, respectively. For Hürthle cell carcinoma, the mean follow-up duration was 82.6 months (range, 8–233 months), during which no cases of recurrence were observed. One patient had distant metastasis at the time of initial presentation. Among all cases, only this patient with initial distant metastasis died due to the disease. The 10-year overall survival and disease-free survival rates for Hürthle cell carcinoma were 100% and 91.7%, respectively. In follicular carcinoma,

	univariate analysis identified tumor size (≥4 cm), presence of vascular invasion, extrathyroidal extension, histologic subtype, and presence of distant metastasis at diagnosis as significant factors associated with 10-year disease-free survival. However, in multivariate analysis, only the histologic subtype and presence of initial distant metastasis remained as significant prognostic factors. Among the histologic subtypes, the widely invasive type was associated with a poorer prognosis (p = 0.036). In Hürthle cell carcinoma, due to the small number of cases, statistically significant prognostic factors could not be identified. [4]
Genetic information	The most robust associations were observed in the NRG1 gene (rs6996585, P=1.08 × 10−10) and this single nucleotide polymorphisms was also associated with NRG1 expression in thyroid tissues. In addition, we confirmed three previously reported loci (FOXE1, NKX2-1 and DIRC3) and identified seven novel susceptibility loci (VAV3, PCNXL2, INSR, MRSB3, FHIT, SEPT11 and SLC24A6) associated with differentiated thyroid cancer. [6]
References	[1] Korean Statistical Information Service. 5-year prevalence of specific cancer (61 types), Cancer statistics in Korea (2022). http://kosis.kr/ [2] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD)*. https://www.koicd.kr/main.do. 2023. [3] Trends in Thyroid Cancer Mortality Rates in Korea: Insights from National Health Database. Endocrinol Metab. 2024;39(6):853-855. [4] Comparative Analysis About Clinical Manifestation and Prognostic Factors of Thyroid Follicular and Hurthle Cell Carcinoma, Korean J Otorhinolaryngol-Head Neck Surg. 2021;64 (12): 906-913. [5] Association between Family Histories of Thyroid Cancer and Thyroid Cancer Incidence: A Cross-Sectional Study Using the Korean Genome and Epidemiology Study Data. Genes. 2020; 11(9):1039. [6] Genome-wide association and expression quantitative trait loci studies identify multiple susceptibility loci for thyroid cancer. Nat Commun 8, 15966 (2017).

Ophthalmology

Cataract

Incidence	The average incidence for 5 years with 19,953 participants was 11.1% (10-49 years), 35.7% (50-59 years), 71.8% (60-69 years), and 94.2% (over 70 years). [1]
Prevalence	A total of 20,419 eligible subjects aged ≥ 40 years (8,777 men and 11,642 women) participated during the study period. The overall prevalence of cataract was 42.28% (95% CI, 40.67–43.89); 40.82% (95% CI, 38.97–42.66) for men and 43.62% (95% CI, 41.91–45.33) for women (P = 0.606). [2]
Mortality	Cataract surgery was associated with a decreased hazard of all-cause mortality after adjusting for demographics as well as systemic and ocular comorbidities (hazard ratio (HR), 0.93; p < 0.001). [3]
Gender	More female than male patients underwent surgery (60.2 vs. 39.8% in 2020). [4]
Age	The prevalence of cataract in participants aged ≥ 40 years in Korea was 42.28%, but in those aged ≥ 70 years, it was > 90%. [2]
Regional distribution	Estimated patients of cataract surgery: Seoul 6.8% (n=1,511,437), Busan 9.3% (n=2,067,293), Daegu 7.0%(n=1,561,955), Incheon 6.4% (n=1,410,532), Daejeon 3.6% (n=794,370), Gwangju 7.4% (n=1,630,841), Ulsan 4.6% (n=1,023,977), Gyeonggi 7.0% (n=1,550,914), Gangwon 9.6% (n=2,120,905), Chungbuk 7.9% (n=1,747,180), Chungnam 10.3% (n=2,293,218), Jeonbuk 10.9% (n=2,422,921), Jeonnam 12.0% (n=2,656,011), Gyeongbuk 7.9% (n=1,762,272), Gyeongnam 9.0% (n=2,002,130) and Jeju 5.3% (n=1,171,801). [5]
Clinical phenotypes/ Classification	Among the total 369 patients with cataract, 100 (27.1%) had cortical cataract, 250 (67.8%) had nuclear cataract, 13 (3.5%) had anterior subcapsular cataract, and 6 (1.6%) had posterior subcapsular cataract. The χ^2 value was 4.112, and the p-value was 0.250. [6]
Clinical manifestation	The common symptom is loss of visual acuity, but other symptoms (photophobia, monocular diplopia, myopic shift, change in color vision, etc.) may be found depending on the anatomical distribution of the opacities (nuclear, posterior subcapsular, cortical). [7]
Risk factor	In multiple logistic regression analyses, cataract were associated with older age (P < 0.001), men (P = 0.032), lower household income (P = 0.031), lower education (P < 0.001), hypertension (P < 0.001), and diabetes mellitus (P < 0.001). [2]
Diagnosis	Diagnosis is based on slit-lamp examination after pupillary dilation. This allows Classification of the opacities according to their anatomical distribution and can help

	direct any etiologic work-up. A number of potential causes should be ruled out before concluding that a cataract is age-related. Cataracts may be iatrogenic, associated with other ocular or systemic disease, or induced by ocular trauma. [7]
Treatment	The overall prevalence of cataract surgery was 7.75% (95% CI, 7.30–8.20); 6.38% (95% CI, 5.80–6.96) for men and 9.01% (95% CI, 8.41–9.61) for women (P < 0.001). [2]
Prognosis	Binocular defocus curve at 3 months after bilateral implantation showed visual acuity of 0.1 ogarithm of the minimum angle of resolution (logMAR) or better from + 0.5 D through − 2.5 D. Binocular best corrected distance visual acuity mean ± SD at 4 m was − 0.05 ± 0.07 logMAR. At near and intermediate distances, 84 and 77% of subjects reported good/excellent satisfaction, and 84 and 91% of subjects reported spectacle independence, respectively. [8]
Genetic information	The intergenic SNP rs10240278 between ARL4A and RPL26P21 on chromosome 7 showed a suggestive association with age-related cataracts. [9]
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Diabetic Retinopathy

Incidence	The age-adjusted annual incidence rate of patients treated for vision-threatening diabetic retinopathy significantly decreased from 10.05 per 1000 Type 2 diabetes mellitus patients in 2006 to 6.11 in 2017 ($\beta = -0.3192$, $P < 0.0001$). [1]
Prevalence	The prevalence of diabetic retinopathy (DR) increased from 13.4% in 2006 to 15.9% in 2015. [2]
Mortality	NR
Gender	121,964 (55.90%) men (median age, 59 years; mean ± SD, 58.75 ± 10.83 years) and 96,233 (44.10%) women (median age, 63 years; mean ± SD, 61.83 ± 11.47 years). [1]
Age	The maximum age was in the 60s until 2013 (15.9%), while age in 70s showed the highest prevalence from 2014 (18.0%). [2]
Regional distribution	The residential areas, one of the socioeconomic factors, had a lower risk of rural dwellings (HR, 0.743; 95%CI 0.654–0.844) compared to the metropolitan area, and small and large city dwellings tended to be less risky (HR, 0.92, 0.932; 95%CI 0.838–1.01, 0.842–1.031, respectively) than metropolitan areas, although the difference was not statistically significant. [1]
Clinical phenotypes/ Classification	At baseline, 140 patients showed no DR (37.7%), and 152 (41.0%), 40 (10.8%), and 39 (10.5%) patients showed mild nonproliferative diabetic retinopathy (NPDR), moderate NPDR, and severe NPDR, respectively. At the last follow-up, 110 patients remained in the no DR group (29.6%), and 104 (28.0%), 75 (20.2%), 45 (12.1%), and 37 (10.0%) patients showed mild NPDR, moderate NPDR, severe NPDR, and proliferative DR, respectively. [3]
Clinical manifestation	Diabetic retinopathy is a major cause of vision loss in middle-aged and elderly people. Severe stages of DR include proliferative DR, caused by the abnormal growth of new retinal blood vessels, and diabetic macular oedema, in which there is exudation and oedema in the central part of the retina. [4]
Risk factor	Based on the 70–99 age group, adjusted HR of the 30–49 age group was 1.871 (95% CI, 1.614–2.168) and that of 50–69 age group was 1.850 (95% CI, 1.610–2.125). There was a higher risk in men (HR, 1.1879; 95% CI, 1.104–1.277). Insulin use is highly linked to the risk of treatments for vision-threatening DR (HR, 2.057; 95% CI, 1.904–2.223). Among comorbidities, only chronic kidney disease (HR, 1.636; 95% CI, 1.075–2.490) was a statistically significant risk factor of treatments. [1]

	Well-known risk factors associated with DR development are the duration of diabetes, glycated hemoglobin level, systolic blood pressure, low body mass index, and total cholesterol. [5]
Diagnosis	A total 380 patients were included in this study. Among 380 patients, 10.53% (40 patients) were diagnosed with DR within 1 month after a new diagnosis of Type 2 diabetes mellitus. In the DR group, HbA1C (10.17% ± 1.82% vs. 7.34% ± 1.37%, P < 0.001), fasting plasma glucose (219.15 ± 81.81 mg/dL vs. 146.33 ± 50.74 mg/dL, P < 0.001), urine albumin to creatinine ratio (94.12 ± 176.05 mg/g vs. 34.70 ± 90.37 mg/g, P = 0.001), and urine microalbumin level (107.54 ± 186.23 μg/mL vs. 43.81 ± 112.82 μg/mL, P = 0.002) were significantly higher than in the no diabetic retinopathy group. [5]
Treatment	Optimal control of blood glucose and blood pressure in individuals with diabetes remains the cornerstone for preventing the development and arresting the progression of DR. Anti-VEGF therapy is currently indicated for diabetic macular oedema associated with vision loss, whereas laser photocoagulation prevents severe vision loss in eyes with proliferative DR. [4]
Prognosis	Among microvascular complications, patients with more severe DR had a greater prevalence of microalbuminuria (30.5% without DR, 36.1% with NPDR, and 67.3% with PDR, P<0.001), overt proteinuria (10.2% without DR, 18.1% with NPDR, and 36.5% with PDR, P=0.003), and autonomic neuropathy (24.1% without DR, 29.9% with NPDR, and 46.8% with PDR, P=0.043). [6]
Genetic information	Genome-wide association analysis results sowed that the genes DIRC3 on chromosome 2 (rs16857280, $p = 1.2 \times 10{-}6$), SLCO3A1 on chromosome 15 (rs12899055, $p = 2.5 \times 10{-}6$), and RAB2A on chromosome 8 (rs2272620, $p = 4.6 \times 10{-}6$) were associated with treatment response to intravitreal anti-VEGF injection. SLC35F1, TMEM132D, KIAA0368, HPCAL1, IGF2BP3, SPN2S, COL23A1, and CREB5 were also related to treatment response ($p < 5.0 \times 10{-}5$). [7]
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Dry Eye Syndrome

Incidence	NR
Prevalence	Among the total population, 567,141 were diagnosed with dry eye disease (DED), yielding a 5-year prevalence of 8.88%. [1]
Mortality	NR
Gender	Prevalence was higher in females (11.52%) than in males (5.92%). [1]
Age	The overall prevalence of dry eye disease increased with age, peaking in individuals aged 70 and above. The prevalence was 21.96% in the 70–74 age group and 21.17% in those aged 75 and above. [1]
Regional distribution	Adjusted odds ratio for having previously diagnosed DED was 1.677 (95% CI 1.299-2.166) for metropolitan cities and 1.580 (95% CI 1.215-2.055) for other cities compared to rural areas. Corresponding odds ratio for presenting DED symptoms was 1.388 (95% CI 1.090-1.766) for metropolitan cities and 1.271 (95% CI 0.999-1.617) for other cities. Lower humidity and longer sunshine duration were significantly associated with DED. [2]
Clinical phenotypes/ Classification	There are three subtypes of dry eye in the new guideline: (1) aqueous deficiency dominant; (2) evaporative dominant; and (3) altered tear distribution. These subtypes can cover all patients with dry eye except of corneal neuropathic pain. The new treatment guidelines are simplified to step 1 or 2 according to the subtypes of dry eye, and the clinical procedure has been separated. [3]
Clinical manifestation	The final consensus meeting was held in Busan, Korea, on February 11, 2023, and the new definition agreed is as follows: “Dry eye is a disease of the ocular surface characterized by tear film abnormalities and ocular symptoms.” Ocular symptoms include dryness, discomfort, foreign body sensation, pain, blurring, and visual fluctuation. [3]
Risk factor	Univariate analysis revealed that female sex ($P < 0.001$), prolonged computer use ($P = 0.003$) and higher stress Visual Analog Scale ($P < 0.001$) and Perceived Stress Scale-4 ($P = 0.009$) scores had significant association with DED. [4] Age (adjusted odds ratio [aOR] = 1.8, 1.6), female (aOR = 2.8, 1.9); history of eye surgery (aOR = 2.6, 2.2); stress (aOR = 1.7, 1.6); thyroid disease (aOR = 1.7, 1.5); and high education level (aOR = 1.6, 1.5) were common risk factors in the groups. [5]
Diagnosis	The practical diagnostic guideline for dry eye according to the new definition was discussed at the consensus meetings in 2017, 2018, 2019, and 2023. All members agreed that a dry eye patient should be diagnosed if he or she has at least one symptom and

	one objective sign. Fluorescein tear breakup time (TBUT), Schirmer test, and ocular surface staining were the most commonly performed tests to diagnose dry eye in the KDES member survey. The members responded that TBUT was the most important finding in tear film instability among TBUT, noninvasive TBUT (NIBUT), and tear breakup patterns. [3]
Treatment	Among DED patients, 86.91% received at least one medication. Single-use hyaluronic acid was most commonly prescribed (43.0%), followed by bottled steroids (24.5%), bottled hyaluronic acid (19.6%), and bottled diquafosol (4.3%). Annual prescriptions of cyclosporine and single-use steroids increased over time. [1] *Treatment preferences and drug approvals can vary significantly across countries. For instance, cyclosporine is not approved for the treatment of DED in Japan, where tear film instability is regarded as the primary underlying pathology. In contrast, diquafosol is approved mainly in Asian countries, including Japan, South Korea, Thailand, and Vietnam, but has not been approved by the U.S. Food and Drug Administration for DED management. [1]
Prognosis	DES is often exacerbated by exposure to air conditioning, wind, central heating and when the frequency of blinking is reduced by long-term reading. [6] If the dry eye is too severe, the cornea will dry out and the vision will be severely impaired. [7]
Genetic information	A study investigated 7 single nucleotide polymorphisms: 5 in IL17A, namely rs8193036, -307 G>A, rs2275913, rs8193037 and rs3819025, and 2 in IL17F, namely, -1658 T>C and -1436 G>A. Among them, the -307 G>A, rs8193037 and rs2275913 of IL17A gene and -1658 T>C of IL17F gene were significantly different between patients and control groups. [8]
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Glaucoma

Incidence	The age-standardized incidence rate of glaucoma was 978.9 per 100,000 individuals in 2019. [1]
Prevalence	The prevalence of glaucoma in patients ≥40 years of age increased from 0.79% in 2008 to 1.05% in 2013. [2]
Mortality	Of the 776 patients diagnosed with primary congenital glaucoma in the study population, 27 died. The observed mortality per 100,000 people is about 10 times higher than that of the general infant and child population under the age of 4 years. [3]
Gender	The female-to-male incidence ratio ranged from 1.15 to 1.56 during the study period. [1]
Age	The age distribution of total cases was as follows: In the 40–49-year age group, there were 26,360 cases; in the 50–59-year group, there were 22,892 cases; in the 60–69-year group, there were 15,302 cases; and in the 70 years and older group, there were 2,191 cases. [1]
Regional distribution	In 2021, the prevalence of glaucoma was 1.11% (95% CI, 0.61–1.61) in urban areas and 1.18% (95% CI, 0.82–1.54) in rural areas. [4]
Clinical phenotypes/ Classification	The most frequently observed subtypes of glaucoma were: normal tension glaucoma (33.0%) primary open-angle glaucoma (28.4%), ocular hypertension (11.1%), chronic angle-closure glaucoma (6.8%), neovascular glaucoma (5.2%), glaucoma associated with inflammation (3.8%), acute angle-closure glaucoma (3.3%), and glaucoma associated with aphakia or pseudophakia (2.2%). [5]
Clinical manifestation	Korean Normal-Tension Glaucoma (NTG) patients showed steeper cup shapes, higher RNFL thickness by stratus optical coherence tomography, and thinner central corneal thickness compared to those of Western NTG patients with similar visual field loss. [6]
Risk factor	Multivariate logistic regression analysis revealed that older age ($P < 0.001$), male gender ($P < 0.001$), higher intraocular pressure ($P < 0.001$), myopia ($P < 0.001$), hypertension ($P = 0.031$), and non-over weight status ($P = 0.017$) were associated significantly with primary open-angle glaucoma in the Korean population. [7] Through multivariate Cox regression analysis, glaucoma suspects with diabetes, hypertension, dyslipidemia, or coronary heart disease exhibited a greater risk of conversion to primary open-angle glaucoma than those without these comorbidities ([HR, 1.354; 95%CI, 1.201 to 1.527] for diabetes, [HR, 1.139; 95%CI, 1.019 to 1.273] for systemic hypertension, [HR, 1.128; 95%CI, 1.013 to 1.26] for dyslipidemia, [HR, 1.124, 95%CI, 1.007 to 1.254] for coronary heart disease). [8]

Diagnosis	The mean untreated intraocular pressure and vertical cup-to-disc ratio of the optic nerve head of newly diagnosed glaucoma eyes were 22.1 ± 10.6 mmHg and 0.66 ± 0.22, respectively. [5]
Treatment	Most glaucoma treatments focus on lowering intraocular pressure to preserve the remaining ganglion cells and their axons. In Korea, glaucoma eye drops with the following five active ingredients are used: alpha agonists (apraclonidine and brimonidine), beta blockers (betaxolol, carteolol, and timolol), carbonic anhydrase inhibitors (brinzolamide and dorzolamide), parasympathomimetics (pilocarpine), and prostaglandin analogs (bimatoprost, latanoprost, tafluprost, and travoprost). Glaucoma eye drops containing latanoprostene and omidenepag isopropyl were introduced in 2022. [9] The prescription proportion of single-ingredient glaucoma eye drops decreased (-1.290%/year, $P < 0.001$), whereas that of fixed-combination glaucoma eye drops increased (1.291%/year, $P < 0.001$). The number of glaucoma eye drops prescribed per patient remained constant (-0.00030/year, $P = 0.167$) with an average of 1.302, while the number of active ingredients prescribed per patient increased (0.01737/year, $P < 0.001$) from 1.659 in 2007 to 1.896 in 2020. [9]
Prognosis	The incidence rate of severe visual impairment due to glaucoma declined markedly from 26.23 per 100,000 person-years in 2004 to 8.76 in 2012, and remained relatively stable thereafter, reaching 12.49 per 100,000 by 2019. Throughout the study duration, females consistently showed lower standardized visual impairment rates compared with males. [1]
Genetic information	From the discovery cohort, rs1900004 in ATOH7 (OR=1.29, p=0.0024); rs1063192 (OR=0.69, p=0.0006), rs2157719 (OR=0.63, p=0.0007) and rs7865618 (OR=0.63, p=0.0006) in CDKN2B-AS1, and rs10483727 in SIX1/SIX6 (OR=0.68, p=7.9E-05) were nominally associated with the risk of primary open-angle glaucoma. [10]
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Macular Degeneration

Incidence	The incidence in the general population aged 40 years and older was 3.02/10000 person-years and 3.76/ and 2.34/10,000 person-years in men and women, respectively. [1]
Prevalence	The prevalence (95% confidence interval [CI]) of age-related macular degeneration (AMD) was 13.94% (13.15–14.72). [2]
Mortality	In a global study, Participants with any AMD had an increased risk of all-cause mortality (HR, 2.02; 95% CI, 1.37-2.98). Similar results were observed for early (HR, 1.93; 95% CI, 1.31-2.85) and late AMD (HR, 4.29; 95% CI, 2.10-8.79). [3]
Gender	Of 1,129 patients with AMD, 486 were male and 643 were female. [4]
Age	The prevalence increased with age; it was 3.61%, 11.33%, 20.31%, 31.37%, and 33.98% in participants in their 40s, 50s, 60s, 70s, and $\geq$ 80 years, respectively. [2]
Regional distribution	Both early and late AMD had no association with residence(urban/rural). [4]
Clinical phenotypes/ Classification	The prevalence (95% CI) of early AMD, geographic atrophy, and neovascular AMD was 13.07% (12.29-13.85), 0.26% (0.17-0.35), and 0.61% (0.47-0.75), respectively. [2] Patients were defined as having early AMD if they met any one of the following criteria: 1) the presence of soft indistinct or reticular drusen or, 2) the presence of hard or soft distinct drusen with pigmentary abnormalities (increased pigmentation or hypopigmentation of the retinal pigment epithelium) in the absence of signs of late AMD. According to the KNHANES 2008-2011, the prevalence of early and late AMD were 6.02% (95% CI: 5.56-6.48) and 0.60% (95% CI: 0.45-0.75), respectively. [2]
Clinical manifestation	The prevalence of bilateral early AMD was 5.71% (95% CI, 5.24–6.18), while that of late AMD was 0.14% (95% CI, 0.08–0.20). The prevalence of the bilateral involvement of late AMD increased with age. The prevalence of early AMD in one eye and late AMD in the fellow eye was 0.26% (95% CI, 0.16–0.36). [5]
Risk factor	In multivariate analysis, AMD was positively associated with older age ($p < 0.001$; odds ratio [OR], 1.08; 95% CI, 1.07-1.09), male sex ($p = 0.014$; OR, 1.27; 95% CI, 1.05-1.53), and lower degree of education ($p < 0.001$; OR, 1.36 (for junior high school graduates); 95% CI, 1.12-1.65). [2]
Diagnosis	Drusen are a sign that degeneration of the retina and choroid has begun in the macula, and depending on their location, they can themselves be a cause of vision loss. In patients with dry age-related macular degeneration, the type, size, and distribution of

	drusen in the posterior pole tend to be symmetrical. Along with drusen, pigmentary changes and abnormalities are also findings that indicate the progression of age-related macular degeneration, manifesting as decreased pigmentation (hypopigmentation) or increased pigmentation (hyperpigmentation). Wet age-related macular degeneration is characterized by retinal pigment epithelial detachment and choroidal neovascularization. Retinal pigment epithelial detachment is classified as fibrovascular, serous, hemorrhagic, or drusen-associated pigment epithelial detachment. [6]
Treatment	There is currently no established treatment for dry age-related macular degeneration; however, therapies that inhibit the complement system or target other mechanisms are under investigation. For neovascular age-related macular degeneration, various Anti–vascular endothelial growth factor (VEGF) agents have been developed and are in clinical use to suppress choroidal neovascularization, and adjunctive treatments to reduce the frequency of anti-VEGF administration, as well as alternative therapeutic approaches to replace anti-VEGF agents, are being studied. [6]
Prognosis	Among them, 34% (n = 4514) had a sight-threatening eye disease diagnosis, for a suicide rate of 69 per 100 000 person-years (95% confidence interval [CI], 67–72), relative to 51 per 100 000 person-years (95% CI, 50–52) for non-sight-threatening eye disease individuals. For exudative AMD, the adjusted incidence rate ratio was 1.20 (95% CI, 1.04–1.39). [7]
Genetic information	European, American, and South Asian populations showed similar heatmap patterns, whereas East Asian, and Korean populations had distinct patterns. Korean populations exhibited patterns that were different from those of the other groups; rs5754227 (SYN3), rs1626340 (TGFBR1/COL15A1), rs3750846(ARMS2/HTRA1), and rs9564692 (B3GALTL) were enriched, whereas rs2230199 (C3) and rs73036519 (EXOC3L2/MARK4) were depleted in Koreans; these single nucleotide polymorphisms are associated with late AMD. [8]
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Psychiatry

Attention Deficit Hyperactivity Disorder (ADHD)

Incidence	A total of 295,660 individuals were newly diagnosed with ADHD between 2009 and 2018. [1]
Prevalence	The overall prevalence rates of diagnosed ADHD increased steeply from 127.1/100,000 in 2008 to 192.9/100,000 in 2018. [2]
Mortality	NR
Gender	of 295,660 individuals who were newly diagnosed with ADHD, 72.1% were male. Among children under the age of 19, males accounted for 74.9% and females for 25.1%, indicating a male predominance. In contrast, among adults aged 19 and older, the male-to-female ratio was more balanced, with 57.4% male and 42.6% female. [1]
Age	The most frequently diagnosed age group was 7 to 12 years, accounting for 43.9% of all cases. Additionally, 15.6% of patients were first diagnosed in adulthood. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Among a total of 29,335 children, 2,497 were identified as having attention-deficit/hyperactivity disorder, corresponding to a prevalence of 8.5% (95% CI: 8.2–8.8). By clinical subtype, 922 children (3.1%, 95% CI: 2.9–3.3) were classified as inattentive type, 199 (0.7%, 95% CI: 0.6–0.8) as hyperactive type, and 1,377 (4.7%, 95% CI: 4.5–4.9) as combined type. [3]
Clinical manifestation	According to a study of 40 adult ADHD patients aged 18 years and older, four subscales of the Korean Adult ADHD Rating Scale (K-AARS)—inattention, emotional dysregulation, disorganization, and impulsivity—were significantly positively correlated with depressive symptoms. As reported in previous studies, while hyperactivity tends to decline with age following the onset of ADHD, inattention remains a persistent and prominent symptom. This enduring inattentiveness in adulthood often leads to negative evaluations from others, which may increase the likelihood of experiencing unpleasant emotional states such as frustration, helplessness, and depression. [4]
Risk factor	A significantly higher prevalence of ADHD was found among children whose parents were separated or divorced and/or less educated. [3]
Diagnosis	During the study period, the diagnostic rate of adult ADHD increased in both early adulthood (ages 19–30) and adulthood (ages 31 and older). In the early adulthood group, the rate increased from 11.0 per 100,000 in 2009 to 83.1 per 100,000 in 2018, representing a 7.6-fold increase. In the older adult group, the rate rose from 3.9 to 14.3

	per 100,000, a 3.7-fold increase. This trend is consistent with findings from other countries during similar time periods, which also reported increasing incidence rates of adult ADHD. For example, a U.S. study on annual incidence rates of adult ADHD showed an increase from 9.43 per 10,000 in 2007 to 13.39 per 10,000 in 2016. Likewise, a Danish study reported an increase from 0.0 to 22.8 per 100,000 between 1995 and 2010. These findings are also in line with numerous prevalence studies suggesting a rising trend in adult ADHD diagnoses. [1]
Treatment	An analysis of initial prescriptions following first-time ADHD diagnosis showed that extended-release formulation of the methylphenidate was the most frequently prescribed, followed by osmotic-release oral system formulation of the methylphenidate, Iimmediate-release formulation of the methylphenidate, and atomoxetine. Combination therapy was rare. In patients under 18 years of age, atomoxetine was more commonly used, but the overall order of prescribed medications was similar to that of the total population. [1]
Prognosis	Among the children/adolescent ADHD patients, 61.84% had at least one psychiatric comorbidity. The following specific psychiatric comorbidities were identified in the order of decreasing likelihood: depressive disorder (18.06%), tic disorder (11.44%), anxiety disorder (9.94%), oppositional defiant disorder/conduct disorder (9.56%), intellectual disability (7.64%), and bipolar disorder (5.86%). [2] During the past decade, accumulated evidence has indicated that symptoms of ADHD persist into adulthood for 30% to 50% of children diagnosed with this disorder. [3]
Genetic information	FKBP5 gene polymorphisms were associated with ADHD in Korean children. [5] RELN might be related to ADHD symptoms. [6]
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Autism Spectrum Disorder

Incidence	NR
Prevalence	In Korea, the estimated prevalence of autism spectrum disorder (ASD) was 2.20%. [1]
Mortality	Regarding the risk of all-cause mortality among children with ASD (born between 2002 and 2012), the hazard ratio of death in children diagnosed with ASD was 2.340 (95% confidence interval, 2.063–2.654; P < 0.001) compared to those who were not diagnosed with ASD. [2]
Gender	Boys had a higher prevalence than girls aged 2 to 18 years (median, 4.9 times higher; range, 2.7 to 7.6 times). [3]
Age	The highest level of prevalence appeared in children aged 6 years, and thereafter, it declines with age. The prevalence of ASD in children aged 2 to 18 years was 0.12% in 2021. The prevalence in preschool children (2 to 5 years) remarkably increased from 0.04% in 2011 to 0.12% in 2021, while the prevalence in adolescents (13 to 18 years) increased from 0.05% in 2011 to 0.09% in 2021. [3]
Regional distribution	NR
Clinical phenotypes/ Classification	A proportion of individuals (15–47%) exhibit idiopathic regression, characterized by a loss of previously acquired functions following a period of normal or near-normal development. Among the 168 children with ASD included in the final analysis, 14 (8.33%) demonstrated regression. In contrast, none of the children in the sibling group (n = 131) or the control group (n = 52) exhibited regression. [4]
Clinical manifestation	The 2024 Korean Clinical Guideline for Autism Spectrum Disorder describes the following characteristics under Clinical Features: deficits in social communication and social interaction; restricted, repetitive patterns of behaviors, interests, or activities; stereotyped and repetitive movements and speech; insistence on sameness and resistance to change; restricted and fixated attention and interests; and abnormal sensory responses. [1] According to the findings, the first diagnosis was made between 25 and 36 months among 51.1% of the children and between 19 and 24 months among 23.4%. The people who first recognized the problems were parents among 66.2% of the children and teachers at kindergartens or daycare centers among 15.4%. The reason why the problems were recognized was delayed language development among 36.2% of the children and no eye contact among 27.6% of the children. [5]

Risk factor	Siblings of confirmed case, Babies of older or very young mothers and older fathers, A history of suboptimal prenatal or perinatal development (e.g., medication use during pregnancy, hypertension, infection, and maternal obesity), Various genetic disorders, Various psychiatric disorders, especially obsessive-compulsive disorder, attention-deficit/hyperactivity disorder (ADHD), anxiety disorders, and mood disorders. [1]
Diagnosis	Diagnostic tools available in Korea include Autism Diagnostic Interview-Revised (ADI-R), Autism Diagnostic Observation Schedule 2 (ADOS-2), and the Childhood Autism Rating Scale, Second Edition (CARS-2). Although these tools have high reliability, they cannot replace the clinician's final diagnosis. Combination of the above-mentioned observational and interview measures, rather than relying on a single source of information, leads to the most accurate diagnosis. [1]
Treatment	According to the study, when the average age of the child was about 20.8 months, the parents recognized the child's autism symptoms and the average age of starting intervention was 35.5 months. The average time to start therapeutic intervention after parents recognized the child's autism was 14.5 months on average. [6]
Prognosis	In many cases, it has been reported that communication and social interaction skills in people with ASD improve significantly as they get older. Language development and average nonverbal intelligence quotient (IQ) have been suggested as the most reliable predictive factors for a positive prognosis. [1]
Genetic information	According to previous studies, two types of genetic variants—rare and common—have been identified in ASD, both contributing significantly to its pathogenesis. In one study, among a cohort of 137 patients, only three individuals were reported to have neither pathogenic/likely pathogenic variants nor variants of uncertain significance based on clinical next-generation sequencing results. Pathogenic variants were identified in seven cases, while 17 individuals exhibited likely pathogenic variants. [7]
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Bipolar Disorder

Incidence	NR
Prevalence	The lifetime prevalence of bipolar spectrum disorder (BPS) in the South Korean adults was measured to be 4.3% (95% CI 2.6–6.9). [1] The prevalence of bipolar I disorder in Korea ranges from 0.16% to 0.44%, significantly lower than that reported in Western countries. [2]
Mortality	NR
Gender	An analysis of 417 patients with bipolar disorder included between 2007 and 2021 showed that 36.5% were male. [3]
Age	The mean age of the 417 patients with bipolar disorder was 34 years. [3]
Regional distribution	There are no notable regional variations, with prevalence observed to be relatively uniform. [3]
Clinical phenotypes/ Classification	In one study, patients were categorized into prepubertal-onset and adolescent-onset groups. The subjects were also classified into narrow, intermediate, and broad phenotypes based on the definitions proposed by Leibenluft and colleagues. Among the total sample, 16 patients (30.2%) belonged to the prepubertal-onset group and 37 patients (69.8%) to the adolescent-onset group. Patients with prepubertal-onset bipolar disorder tended to exhibit an insidious clinical course, atypical symptom features, and higher rates of psychiatric comorbidities. The majority of subjects, particularly those in the prepubertal-onset group, were classified into the intermediate and broad phenotype categories. [4]
Clinical manifestation	Nearly 80% of the subjects with BPS were co-diagnosed with other DSM-IV non-psychotic mental disorders: 35.4% for major depression and dysthymic disorder, 35.1% for anxiety disorders, and 51.9% for alcohol and nicotine use disorders. [1]
Risk factor	The presence of metabolic syndrome was associated with new onset bipolar disorder. Each metabolic parameter with high variability was associated with a higher risk of new onset bipolar disorder compared to those with low variability. [5]
Diagnosis	Among the 417 patients with bipolar disorder, 185 were diagnosed with bipolar I disorder, 111 with bipolar II disorder, and 117 with bipolar disorder not otherwise specified. [3]
Treatment	The treatment of manic episodes is generally based on mood stabilizers and atypical antipsychotics, either as monotherapy or in combination. However, reflecting the

	trend observed over the past decade in which the role of atypical antipsychotics has continued to expand, the latest revision of the guidelines demonstrates their increasingly diverse applications. In contrast, the treatment of depressive episodes shows less consistent therapeutic response compared to manic episodes, and therefore, a wider range of treatment strategies has been explored. [6]
Prognosis	Childhood/adolescent-onset group was significantly low in total potential IQ and in language understanding than adult-onset group ($p=0.008$ and $p=0.013$). The childhood/adolescent group had significantly more psychiatric comorbidities than the adult group ($p<0.001$). The average number of prescribed antipsychotic agents was 1.18 (SD=±0.64) in the childhood/adolescent group, and 1.78 (SD=±0.82) in the adult group. The difference was statistically significant ($p<0.001$). [7]
Genetic information	Polygenic risk scores derived from genome-wide association study data of individuals of European ancestry were applied to Korean patients with bipolar disorder and healthy controls. The European-based PRS explained 0.6% of the variance in the overall Korean sample, and 1.65% in patients with bipolar I disorder, showing a statistically significant association. [3] One study suggested that the CACNA1C SNPs rs723672 and rs1051375 were associated with bipolar disorder in the Korean population. [8]
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Depression

Incidence	From 1990 to 2019, the age-standardized incidence of depressive disorders increased by 9.1% in South Korea. [1]
Prevalence	According to the Global Burden of Disease study, the crude prevalence of depressive disorders worldwide was about 3.6%, and the number of patients with depressive disorders increased compared to 1990 (170.8 million to 279.6 million). [2]
Mortality	The depression group showed a 1.13-fold (HR, 1.13; 95% CI, 1.11–1.16; p<0.001) higher 10-year all-cause mortality than the no depression group. [3]
Gender	Based on 2013 data, the prevalence of depression was higher in females than in males. Among 507,441 females, 34,550 individuals (6.81%) were diagnosed with depression, whereas among 507,289 males, 19,700 individuals (3.88%) had depression. [4]
Age	Based on 2013 data, the prevalence of depression by age group was as follows: among individuals aged 0–9, 1,463 out of 212,768 (0.69%) had depression; in the 20–39 age group, 7,700 out of 287,875 (2.67%) were affected; in the 40–59 group, 19,258 out of 336,151 (5.73%) had depression; in the 60–79 group, 21,144 out of 152,412 (13.87%) were diagnosed; and among those aged 80 and older, 4,685 out of 25,524 (18.36%) had depression. [4]
Regional distribution	The adjusted prevalence rate of depressive symptoms was 3.33% (95% CI, 3.21-3.45) in urban areas and 2.59% (95% CI, 2.43-2.74) in rural areas. The prevalence of depressive symptoms in urban areas was 1.29 times (95% CI, 1.20-1.38) higher than in rural areas. [2]
Clinical phenotypes/ Classification	The distribution of depression clinical phenotypes among the study population was as follows: Major Depressive Disorder (MDD) without psychotic features: 960 individuals (81.1%) MDD with psychotic features: 24 individuals (2.0%) Dysthymic Disorder: 38 individuals (3.2%) Depressive Disorder Not Otherwise Specified (NOS): 161 individuals (13.6%) [5]
Clinical manifestation	According to a 2006 study by the Depression Clinical Research Center designated by the Ministry of Health and Welfare, 70% of patients who were later diagnosed with depression had answered "no" when asked whether they were experiencing depression. The most commonly reported symptom among these patients was insomnia (22.9%), followed by gastrointestinal, digestive, and respiratory symptoms, as well as chronic fatigue, which accounted for 20.6%. Additionally, a 2010 study conducted by the Korean Society for Affective Disorders on 393 patients with major

	depressive disorder who visited 13 hospitals found that 90% of the patients reported symptoms such as dyspnea and various types of physical pain. [6] *The most frequently reported pain was headache (71.4%), and the number of pain sites tended to increase with the severity of depression. These findings suggest that, among Koreans, somatic and vegetative symptoms are more commonly recognized than mood symptoms in cases of depression. [6]
Risk factor	One of the most well-known risk factors for depression is a history of previous depressive episodes. The greater the number of past episodes, the higher the risk of future depressive episodes. Individuals with a family history of depression are at increased risk of experiencing depression themselves. Some reports suggest that a family history of depression accounts for approximately 39% of the risk of developing depression in both men and women. [7]
Diagnosis	To diagnose a patient with depressive symptoms as having major depressive disorder, clinical interviews, physical examinations, and laboratory tests should be conducted to consider differential diagnoses and any underlying medical conditions. The diagnosis must be made based on the criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). [7] The course and characteristics of depressive symptoms can be evaluated using diagnostic criteria such as DSM-5 or ICD-10, and screening can be conducted using tools such as Patient Health Questionnaire-2 (PHQ-2) or Patient Health Questionnaire-9 (PHQ-9). For individuals with a PHQ-2 score of 1, the likelihood of MDD is 15.4%, and that of other depressive disorders is 36.9%. At a score of 2, these probabilities rise to 21.1% and 48.3%, respectively. A score of 3 is associated with a 38.4% probability of MDD and a 75.0% probability of other depressive disorders. Scores of 4, 5, and 6 correspond to MDD probabilities of 45.5%, 56.4%, and 78.6%, and to probabilities of other depressive disorders of 81.2%, 84.6%, and 92.9%, respectively. [7]
Treatment	The treatment for depression in primary care begins with detecting patients with depression among patients who complain physical symptoms. It is recommended to use screening tests in high-risk groups in order to increase efficiency. Measurement-based care is useful because it systematically uses verified assessment tools to assess severity and monitor treatment progress. SSRIs, SNRIs, mirtazapine, and vortioxetine are recommended as first-line drugs for treating major depressive disorder. [8]
Prognosis	The suicide risk was significantly higher in people with depression (hazard ratio [HR] 3.79, 95% CI 3.14–4.58) than in those without depression, in older people (HR 1.52, 95% CI 1.36–1.70) than in younger people, and in males (HR 2.45, 95% CI 2.02–2.96) than in females. [4]

Genetic information	The study revealed that rs6945590 was significantly associated with the risk of depressive symptoms [P = 2.83 × 10−8; odds ratio (OR) = 1.23; 95% confidence interval (CI): 1.15–1.33]. As the number of risk alleles (A) of rs6945590 increased, TBXAS1 expression decreased, which subsequently caused an increase in the risk of depressive symptoms. [9]
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Insomnia

Incidence	In 2013, the incidence of insomnia was 3.11% (95% CI:3.05–3.17%) in females and 2.01% (95% CI: 1.96–2.06%) in males. [1]
Prevalence	The annual prevalence of sleep disorders in patients aged >10 years was 7,446,846 (14.4%, 144.1 per 1000 person-years) in 2020. [2]
Mortality	NR
Gender	Females constituted the majority, representing 59.62% (n=4 452 628) of this cohort. [2]
Age	Age distribution analysis, segmented into decadal intervals, revealed an ascending trend in the prevalence of sleep disorders with advancing age, reaching a zenith in the 50–60 age group, followed by a subsequent decline. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	Although subtyping of insomnia has been removed from the International Classification of Sleep Disorders-3, efforts to classify its subtypes continue. 1. Subjective vs. Objective Insomnia Subjective insomnia (also known as paradoxical insomnia or sleep state misperception) is characterized by perceived poor sleep despite normal sleep on polysomnography. These patients underestimate their sleep time and show no objective abnormalities. 2. Insomnia with Short vs. Normal Objective Sleep Duration (OSD) Recently, Classification based on objective sleep duration (OSD) has drawn increasing attention. Short OSD insomnia (<6 h on PSG) is associated with increased physiological hyperarousal, cardiometabolic risk, cognitive impairment, and treatment resistance. Normal OSD insomnia (≥6 h) shows features like sleep misperception, anxiety, and rumination, suggesting a cognitive-emotional mechanism. [3]
Clinical manifestation	Insomnia is an independent disease, while it is also a symptom caused by or closely related to other physical or mental illnesses and sleep disorders. Insomnia often occurs temporarily and then improves; it may become chronic due to poor sleep habits, conditional hyperactivity, and cognitive distortions about sleep. [4]
Risk factor	Psychiatric disorders are major risk factors for insomnia. Depressive disorders, in particular, are both a core comorbidity and a precursor of insomnia. Substance use disorders can precipitate insomnia during intoxication or withdrawal, but insomnia may also precede the onset of such disorders. Bidirectional associations are often observed, requiring careful differentiation between insomnia as a symptom of

	psychiatric illness (secondary insomnia) and primary insomnia. In dementia, nighttime agitation or delirium may explain sleep disturbances, but coexisting primary insomnia must also be considered. Pharmacologic treatments, such as antidepressants or benzodiazepine withdrawal, can also lead to secondary or rebound insomnia. [3]
Diagnosis	In guideline, the diagnostic criteria of chronic insomnia were based on definition of "chronic insomnia disorder" of the International Classification of Sleep Disorders (ICSD) and "insomnia disorder" of the Diagnostic and Statistical Manual of Mental Disorders-fifth edition (DSM-5). These diagnostic criteria are similar in that they define insomnia based on difficulty starting and maintaining sleep, or early morning awakening, causing significant distress or impairment more than three times a week, for at least 3 months. [4]
Treatment	Non-pharmacologic treatments include cognitive behavioral therapy for insomnia (CBT-I). CBT-I has been recommended as the primary treatment for chronic insomnia in all sleep disorder treatment guidelines published in the US, Europe, and Australia since 2016. If a patient has difficulty in participating in CBT-I, or if CBT-I does not show any improvement in symptoms, clinicians may prescribe hypnotic medication only or with CBT-I. In Korea, by contrast, drug treatment is commonly used. [4] Given the time and effort required to implement CBT, clinicians often prescribe sleep medications as a first-line treatment, which is more frequently observed in clinical settings. [5] Over the past decade, medications covered by the National Health Insurance for sleep disorders in Korea included 59 811 619 (49.5%) prescriptions for benzodiazepines, 33 730 406 (27.9%) prescriptions for non-benzodiazepines and 19 627 973 (16.2%) prescriptions for antidepressants. [2] * Insomnia treatments such as suvorexant (2014), lemborexant (2019), and daridorexant (2022) have been approved by the U.S. Food and Drug Administration. However, they have not yet been approved or reimbursed in Korea.
Prognosis	Insomnia is not typically regarded as a life-threatening condition, and long-term prognostic data in the general population remain limited. However, in patients recovering from critical illness, the emergence of insomnia has been increasingly associated with unfavorable clinical outcomes. At 1 year after diagnosis of acute respiratory distress syndrome (ARDS), 12.6% of ARDS survivors received a new diagnosis of insomnia disorder in South Korea. Delirium and underlying psychiatric illness (anxiety disorder, depression, and substance abuse) were potential risk factors for the diagnosis of post-ARDS insomnia disorder. Moreover, both pre- and post-ARDS insomnia disorders were associated with 2-year all-cause mortality among ARDS survivors. [6] At 1-year after extracorporeal membrane oxygenation (ECMO), 4.8% of ECMO-treated patients were newly diagnosed with insomnia disorder, and post-ECMO insomnia

	disorder was associated with higher 5-year all-cause mortality, especially in those with underlying psychiatric illness. Our present results suggest that the development of insomnia disorder might be related to poorer long-term survival in ECMO-treated patients, especially in case of underlying psychiatric illness. [7]
Genetic information	Individual single nucleotide variants (rs16948804 and rs4887991) in the WW domain containing oxidoreductase (WWOX) gene were associated with self-aware sleep duration in human (p-values, 1.11 × 10− 7 and 2.05 × 10− 7, retrospectively). [8]
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Schizophrenia and Schizoaffective Disorders

Incidence	The annual incidence of schizophrenia or similar psychotic disorders (SSP) was 118.8 per 100,000 person-year (PY) in 2010 and in 2015, and it was increased to 148.7/100,000 PY. For schizophrenia, IR per 100,000 PY were 77.6-88.5 between 2010 and 2015. [1]
Prevalence	The numbers have increased annually, up to 340,546 diagnosed patients in 2015, translated into a 12-month prevalence of 0.66%. [1]
Mortality	Patients with schizophrenia have a shorter life expectancy compared to the general population. On average, they are known to die approximately 15 to 20 years earlier than individuals of the same age and sex. According to a study analyzing data from the Korean National Health Insurance Service cohort between 2002 and 2013, the standardized mortality ratio for Korean patients with schizophrenia was found to be 2.4 (95% confidence interval [CI], 2.2–2.5). [2]
Gender	In 2015, the total number of individuals with schizophrenia-related diagnoses was 340,546. Of these, 48% were male (n=163,457) and 52% were female (n=177,089). The prevalence was 0.63% in males and 0.69% in females. [1]
Age	In 2015, the number of individuals with schizophrenia-related diagnoses was as follows by age group: 0 (0.00%) in those under 15 years; 21,055 (0.31%) in the 15–24 age group; 38,463 (0.56%) in the 25–34 age group; 63,121 (0.76%) in the 35–44 age group; 80,122 (0.92%) in the 45–54 age group; 57,551 (0.83%) in the 55–64 age group; and 80,234 (1.18%) in those aged 65 years and older. [1]
Regional distribution	In 2015, the number of individuals with schizophrenia-related diagnoses by residential area was as follows: 162,158 (0.70%) in metropolitan cities, 90,054 (0.37%) in other cities, and 88,334 (2.35%) in rural areas. [1]
Clinical phenotypes/ Classification	NR
Clinical manifestation	The study identified that the eight symptom dimension phenotypes exhibited distinct associations with various domains of cognitive function, age at onset, overall illness severity, and treatment response. Specifically, the “non-persecutory delusion” factor was associated with cognitive domains such as processing speed, working memory, attention/vigilance, overall cognitive function, and intra-individual variability. The “negative symptoms” factor was also linked to overall cognitive function. Additionally, “negative symptoms,” “non-persecutory delusions,” and “auditory hallucinations” were found to be associated with greater overall illness severity and poor treatment response. [3]

Risk factor	Numerous large-scale population-based studies have reported associations between various environmental factors and the prevalence of psychosis and psychotic symptoms. The environmental factors include childhood adversity, poverty, migration stress, social isolation, social defeat, mother in poor health, early loss of parents due to death or abandonment, witnessing interparental violence, dysfunctional parenting, poor nutrition and stress during pregnancy, racism, and war trauma. In contrast to the small amount of variance explained by genetic studies, the amount explained by environmental risk factors is quite high, at 33% of the estimated population attributable risk. [4]
Diagnosis	According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), a diagnosis of schizophrenia requires the presence of at least two or more of the following symptoms: delusions, hallucinations, disorganized speech or behavior, catatonic or severely disorganized behavior, and negative symptoms. These symptoms must be present for at least one month, and the disturbance must persist for a minimum of six months, during which the individual experiences significant impairment in daily functioning. [5] In total, 598,951 patients had a diagnosis of schizophrenia or similar psychotic disorders during these 5 years. Schizophrenia was the most common diagnosis with 444,480 patients (ICD-10 code F20.0-F20.9. The second most common diagnosis was unspecified nonorganic psychotic disorders (ICD-10 F29), followed by acute/transitional psychotic disorders (ICD-10 F23), schizoaffective disorders (ICD-10 F25) and other nonorganic psychotic disorders (ICD-10 F28). [1]
Treatment	Currently, pharmacological treatment for schizophrenia primarily focuses on managing positive symptoms such as delusions, hallucinations, and disorganized behavior. The resolution of these symptoms is referred to as "remission." Achieving and maintaining remission is the primary goal of treatment for schizophrenia, and pharmacotherapy—particularly antipsychotic medication—plays a central role in achieving remission and reducing the frequency of relapse. Except for clozapine, there is no significant difference in treatment efficacy among antipsychotic medications in the management of schizophrenia symptoms. Medication should be selected based on the characteristic side effect profiles of each drug and the individual characteristics of the patient. [6]
Prognosis	Schizophrenia is a representative chronic disorder characterized by repeated relapses of psychotic episodes that persist over a long period. As the number of relapses increases, there is a tendency for greater loss of brain tissue and more severe cognitive impairment, indicating the need for continuous, lifelong management. [6] In first-episode patients with schizophrenia, appropriate administration of antipsychotic medication leads to clinical remission in approximately 70–80% of cases,

	and functional recovery is reported in about half of them. The period during which a patient does not receive adequate treatment after the onset of psychosis is referred to as the duration of untreated psychosis (DUP). A longer DUP is associated with poorer long-term outcomes, including lower rates of remission and functional recovery. Notably, the first five years following the onset of schizophrenia are considered a critical period of functional change. Patients who achieve remission within this timeframe tend to show significantly better functional recovery than those who do not. Accordingly, the importance of early intervention in the treatment of schizophrenia has been increasingly emphasized. [6]
Genetic information	ANCOVA revealed significant differences in polygenic risk score (PRS) values by diagnosis for PRS for schizophrenia ($F=215.281$, $p<0.001$), PRS for bipolar disorder ($F=13.811$, $p<0.001$), and PRS for major depressive disorder ($F=6.042$, $p=0.002$). Post-hoc analysis showed that PRS for schizophrenia was highest in schizophrenia, followed by bipolar disorder, and healthy controls. [7]
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Rare Disease

Acromegaly

Incidence	During the 5-year period, 1,093 patients were newly diagnosed with acromegaly. The average annual incidence was 4.2 cases per million per year. [1]
Prevalence	The prevalence was 32.1 cases per million. [1]
Mortality	According to the survival analysis conducted on patients newly diagnosed with acromegaly during 2011–2012, patients in the non-treatment group showed a significantly lower probability of survival (curve difference at P < 0.001 by log-rank) than those in the non-treatment group, which remained significant after adjustment for confounders (HR, 3.668; 95% CI, 1.644–8.183; P = 0.002). [1]
Gender	In 2017, a total of 195 patients were diagnosed with acromegaly. Of these, 84 were male (43.1%) and 110 were female (56.4%). One patient's sex was not recorded. [1]
Age	In 2017, the age distribution of patients diagnosed with acromegaly was as follows: 6 patients (3.1%) were aged 0–19 years, 18 (9.2%) were aged 20–29 years, 24 (12.3%) were aged 30–39 years, 41 (21.0%) were aged 40–49 years, 57 (29.2%) were aged 50–59 years, 35 (17.9%) were aged 60–69 years, 12 (6.2%) were aged 70–79 years, and 1 patient (0.5%) was over 79 years old. Age information was unknown for 1 patient. [1]
Regional distribution	In the case of acromegaly, the number of patients by medical institution region in 2023 was as follows: Seoul: 21,362 cases (24.0%), Busan: 7,577 cases (8.5%), Incheon: 4,205 cases (4.7%), Daegu: 4,462 cases (5.0%), Gwangju: 2,864 cases (3.2%), Daejeon: 4,672 cases (5.2%), Ulsan: 786 cases (0.9%), Gyeonggi: 24,294 cases (27.2%), Gangwon: 1,907 cases (2.1%), Chungbuk: 1,735 cases (1.9%), Chungnam: 1,947 cases (2.2%), Jeonbuk: 3,449 cases (3.9%), Jeonnam: 1,606 cases (1.8%), Gyeongbuk: 1,033 cases (1.2%), Gyeongnam: 5,325 cases (6.0%), Jeju: 1,054 cases (1.2%), Sejong: 870 cases (1.0%). [2]
Clinical phenotypes/ Classification	GNAS mutations were present in 75 of the 126 acromegalic pateints (59.5%). Among the GNAS mutant patient, 61 subjects (81%) had mutation in codon 201. There was no difference in age distribution and Hardy Classification according to GNAS mutation. Female proportion was 76.5% and 48.0% in GNAS wild type and mutant group, respectively (P=0.006). GNAS mutant group had higher prevalence of overall growth hormone (GH) expression in immunohistochemical staining (98.7% vs. 92.2%, P = 0.015). Furthermore, they had higher Insulin-like Growth Factor-1 (IGF-1) level preoperatively (791.3 vs. 697.0 ng/ml, P=0.045). Immediate postoperative nadir GH (0.3 vs. 0.6 ng/ml, P=0.012) in oral glucose tolerance test was lower in GNAS mutant patients. Surgical remission rates were significantly higher in GNAS mutant patients,

	evaluated both at immediately and at 6 months after operation (70.7% vs. 54.9%, P=0.011; 85.3% vs. 82.4%, P=0.007, respectively). [3]
Clinical manifestation	At the time of diagnosis, hyperprolactinemia was observed in 9.1% of patients treated with cabergoline, 34.9% of those treated with bromocriptine, and 20.0% of those treated with somatostatin analogs. [4] It was found that the risk of diabetes (P = 0.038) and hypertension (P = 0.025) was significantly lower in the treatment group than in the non-treatment group. Further analyses after subdividing the treatment group according to the treatment modality demonstrated that the incidence of diabetes in each group showed no significant difference when compared to the non-treatment group. However, the risk of hypertension in the medically treated group was significantly lower than that in the non-treatment group (HR, 0.259; 95% CI, 0.082–0.814; P = 0.021). [1]
Risk factor	Participants with Impaired Fasting Glucose (IFG) and type 2 diabetes mellitus (T2DM) exhibited an increased risk of acromegaly, with hazard ratios of 2.27 (95% CI 1.84 to 2.80) and 2.45 (95% CI 1.78 to 3.39), respectively, compared with those with normal fasting glucose. When participants were categorised into five glycaemic status groups, an increased risk of acromegaly was observed in those with new-onset T2DM (HR 2.18, 95% CI 1.38 to 3.43) and well-controlled T2DM (HR 2.29, 95% CI 1.28 to 4.09), similar to individuals with IFG, with the highest risk found in individuals with poorly controlled T2DM (HR 3.07, 95% CI 1.88 to 5.01). [5]
Diagnosis	At the time of diagnosis, the initial GH levels were 17.9 ng/mL (7.2–42.4) in the cabergoline (CAB) group, 36.7 ng/mL (20.5–86.8) in the bromocriptine (BCT) group, and 92.8 ng/mL (47.8–135.8) in the somatostatin analog (SSA) group. The initial tumor maximal diameter was 1.60 cm (1.40–1.95) in the CAB group, 1.05 cm (1.05–1.95) in the BCT group, and 1.80 cm (1.15–2.30) in the SSA group. The proportion of patients with Knosp grade $\geq$ 3 was 30.0% in the CAB group, 30.2% in the BCT group, and 46.7% in the SSA group. [4]
Treatment	The primary treatment for patients with acromegaly caused by pituitary tumors excessively secreting GH is surgery to remove the tumor through a trans-sphenoidal adenomectomy. Approximately 70% of the patients with pituitary microadenomas are able to maintain their serum GH and IGF-1 concentrations within the normal range after surgery; however, such curative effects can be expected for only 50% of the patients with pituitary macroadenomas. Postoperative medical treatment may be initiated when serum GH concentrations are not reduced to 1 μg/L or lower based on the 75-g oral glucose tolerance test 3 months after surgery, indicating the likely presence of residual tumor. Medical treatment options for these patients include somatostatin analogues (octreotide, lanreotide, and pasireotide), GH receptor

	antagonists (pegvisomant), or oral dopamine agonists (cabergoline). When surgical treatments are unavailable or are refused by patients, medical treatments may be considered as primary therapy. [6]
Prognosis	During the median 5.51 years of follow-up, the acromegaly group had higher all-cause mortality than the control group (hazard ratio [HR] 1.74, 95% confidence interval [CI] 1.38-2.19), with higher risk in women than men (HR 2.17 vs 1.36). The most common cause of death was malignancy. Women with acromegaly aged ≥50 years exhibited significantly higher mortality than men with acromegaly aged ≥50 years (HR 1.74 vs 0.96). [7]
Genetic information	In targeted resequencing, variants in 26 recurrent genes, including MAST4, PRIM2, TNN, STARD9, DNAH11, DOCK4, GPR98, BCHE, DARS, CUBN, NGDN, PLXND1, UNC5B, and COL22A1, were identified, but variants in previously reported genes were not detected. BCHE, DARS, NGDN, and UNC5B variants were associated with increased GH-secreting pituitary tumor biochemical activity, which was confirmed in vitro. [8]
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Amyloidosis

Incidence	NR
Prevalence	Overall, the age-standardized prevalence of amyloidosis was 1.91 (95% CI 1.78, 2.05) persons per 100,000 persons in 2015. [1]
Mortality	The 1-, 2-, and 5- year survival rates in the study population were 89.2%, 79.7%, and 61.1%, respectively. [2]
Gender	Male-to-female ratio was 56.0:44.0%. [2] In 2015, the overall prevalence was higher in men [1.04 (95% CI, 0.94–1.14)] than in women [0.87 (95% CI, 0.77–0.96)]. [1]
Age	The median age was 56.5 years (range, 36-69 years). [2]
Regional distribution	NR
Clinical phenotypes/ Classification	Fifteen of the 18 patients were classified as mixed phenotype, 2 as the neurological phenotype, and only 1 patient as the cardiac phenotype. The most-common mutation pattern in South Korea was Asp38Ala, which was detected in eight patients. [3]
Clinical manifestation	The proportion of patients with wild-type transthyretin amyloidosis cardiomyopathy (ATTR-CM) associated with coronary artery disease, hypertension, stroke, and dyslipidemia was significantly higher than that of patients with variant ATTR-CM. The mean durations of symptoms before diagnosis were comparable between the two groups (1.6 ± 2.8 vs. 2.8 ± 3.3 years, P = 0.063). Most common electrocardiogram finding was presence of any block (38.1%). Prevalence of atrial fibrillation of higher in wild-type ATTR-CM compared to variant type ATTR-CM, possibly due to older age. [4]
Risk factor	Hypertension was observed in 34 patients (26.4%), diabetes mellitus in 11 patients (8.5%), dyslipidemia in seven patients (5.4%), and chronic kidney disease in 25 patients (19.4%). Two patients (1.6%) had a smoking history. [5]
Diagnosis	The median number of involved organs was two (range, 1 to 5) and 38.0% had more than three organs involved. The most commonly involved organ was the kidney (n = 62), followed by the heart (n = 50) and the autonomic nerve system (n = 44). The baseline levels of estimated glomerular filtration rate (eGFR) and 24-hour proteinuria were evaluated in 91 (91.0%) and 89 (89.0%) patients, respectively. The median eGFR was 82.4 mL/min/1.73 m2 (range, 18.8-147.9 mL/min/1.73 m2) and 24-hour proteinuria was 2,231.3 mg/day (range, 63.2- 14,654.0 mg/day). [2]

Treatment	Before Autologous stem cell transplantation (ASCT), seven (7.0%) patients had received hemodialysis due to renal failure and two (2.0%) patients received heart transplantation due to heart failure. ASCT was administered to 23 patients as a frontline treatment for amyloidosis without previous systemic treatments including induction treatment, and 77 patients were treated with immunomodulatory drugs, proteasome inhibitors, and/or alkylating agents. The most commonly used drug was bortezomib (n = 41), followed by cyclophosphamide (n = 31) and thalidomide (n = 29). [2]
Prognosis	In-hospital mortality decreased from 17.3% (95% CI, 9.23 to 29.6) to 6.10% (95% CI, 4.21 to 8.48) between 2009 and 2020. While age-specific in-hospital mortality was significantly higher in patients aged ≥70 years (p=0.004), no significant age-specific difference in in-hospital mortality was observed in patients with cardiac amyloidosis aged <70 years (p=0.981). [6]
Genetic information	A particularly noteworthy finding was that the valine at position 30 (Val30Met) mutation, which was previously reported as the most-common TTR mutation worldwide and also the most common in the Japanese population, was not detected in the present South Korean patients. [3] Among variant ATTR-CM, the most common variant was Asp38Ala (n = 34, 55.7%). The rest of the patients with variant ATTR-CM had the following mutations: Glu89Lys (n = 6, 9.8%), Met13dup (n = 5, 8.2%), Asp38Val (n = 3, 4.9%), Lys35Asn (n = 2, 3.3%), Thr75Ile (n = 2, 3.3%), Thr59Lys (n = 2, 3.3%), Val30Met (n = 1, 1.6%), Val122Ile (n = 1, 1.6%), and others (n = 5, 8.2%). [4]
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Crohn's Disease

Incidence	In 2015, the incidence of Crohn’s disease (CD) increased to 2.42 per 100,000. [1]
Prevalence	According to the KASID 2020 official fact sheet, the total number of patients with CD increased from 7,700 to 18,463. [1]
Mortality	The overall standardized mortality ratios were 1.40 (95% confidence interval: 0.97-1.94) in Crohn's disease. [2]
Gender	The incidence of CD has been reported to be higher in men than women in East Asian countries, including Korea. [1] The male-to-female ratio of the adjusted incidence rate was 3.3:1 for CD. [3]
Age	The mean age of the free perforation group was 31.8 ± 13.0 years, which was significantly higher than that of the non-perforated group (27.5 ± 12.1 years) ($p = 0.004$). [4] In Japan, The study included 1108 patients whose mean age at diagnosis was 25.6 ± 10.8 years. [5]
Regional distribution	According to regional prevalence data from 2019, Seoul exhibited approximately twice the disease incidence of Jeollanam-do, which had the lowest prevalence of CD (40.1 per 100,000. [1]
Clinical phenotypes/ Classification	Ileocolonic location and inflammatory behaviour at diagnosis were more common in paediatric-onset CD (pCD) than in adult- onset CD (aCD); however, patients with pCD and aCD did not differ regarding treatment or disease course during a median follow-up of 137.2 and 120.9 months, respectively. [6]
Clinical manifestation	Perianal fistula is a serious manifestation of CD. A perianal fistula at diagnosis or at an early stage of disease is currently considered to be a poor prognostic factor. The cumulative fistula rate in Korean patients with CD was 40.7% at 1 year after diagnosis, 46.1% at 5 years, and 49.7% at 10 years, all higher than in Western patients. [1] The frequency of extraintestinal symptoms in Korean patients with IBD is not known. However, in a recent survey using the health insurance database, the prevalence of 17 extraintestinal symptoms (of the eyes, skin, hepatobiliary pancreas, and musculoskeletal system) was higher in patients with IBD than in the general population. [7]
Risk factor	Although smoking is considered to have an adverse effect, the male-to-female ratio was 1.8:1 among 259 non-smoking patients with CD in the Songpa-Kangdong cohort. [8]

Diagnosis	In the CD subjects, the disease activity included remission (33.3%), mild (25.5%), moderate (30.9%), and severe (6.1%). According to the Montreal Classification, the cases were as follows: CD: terminal ileum (22.4%), colon (9.7%), ileocolon (66.1%), and upper gastrointestinal involvement (27.3%), and perianal fistula/abscess was present in 43.6% of subjects before or at diagnosis. [9]
Treatment	Patients diagnosed with CD between January 2009 and September 2019 were divided into two cohorts according to the year of diagnosis: cohort 1 (diagnosed between 2009 and 2011) versus cohort 2 (between 2012 and 2019). The treatment-free durations for thiopurines ($p<0.001$) and anti-tumor necrosis factor agents ($p=0.018$) of cohort 2 were shorter than those of cohort 1. Early use of thiopurine was associated with a reduced risk of behavioral progression (adjusted hazard ratio [aHR], 0.69; 95% confidence interval [CI], 0.50 to 0.90). One hundred forty-one patients (12.0%) underwent intestinal resection, and the intestinal resection-free survival time was significantly longer in cohort 2 than in cohort 1 ($p=0.003$). The early use of thiopurines (aHR, 0.35; 95% CI, 0.23 to 0.51) was independently associated with a reduced risk of intestinal resection. [10]
Prognosis	Several clinical and environmental predictors of relapse have been reported, including younger age at diagnosis (<25 years), perianal disease, terminal ileal location, disease location in the proximal small bowel/upper gastrointestinal tract, short period of remission before relapse (<6 months), oral contraceptive use and stress. According to the European Crohn's and Colitis Organisation, common factors associated with higher relapse risk following withdrawal of IMS or anti-TNF are smoking, elevated C-reactive protein level, elevated fecal calprotectin, fistularizing perianal disease, and short duration of remission. [11]
Genetic information	East Asian-enriched coding variants implicate many new IBD genes, including ADAP1 and GIT2. Although IBD genetic effects are generally consistent across ancestries, genetics underlying CD appears more ancestry dependent than ulcerative colitis, driven by allele frequency (NOD2) and effect (TNFSF15). [12]
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Cystic Fibrosis

Incidence	NR
Prevalence	Cystic fibrosis (CF) is a common genetic disorder in Caucasians, with a prevalence of 1 in 1353 in Ireland, whereas its prevalence is extremely low in East Asian countries, with an estimated prevalence of 1 in 350,000 in a Japanese study. In Korea, only 23 cases of CF have been reported, and the median age of diagnosis was 4.5 years. [1]
Mortality	Four patients died at 10.6 years, with 4.2 years of post-diagnosis survival. [2]
Gender	NR
Age	A study included 18 pediatric patients with CF diagnosed using sweat chloride test or genetic analysis for 30 years. The median age at diagnosis was 9.2 years. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	Classic CF is diagnosed when patients have a sweat chloride concentration of > 60 mmol/L and one or more phenotypic characteristics (sinopulmonary disease, gastrointestinal or nutritional abnormalities, salt-loss syndrome, and male urogenital abnormalities resulting in obstructive azoospermia). Typically, disease-causing mutations can be identified in each CFTR gene. In contrast, non-classic CF refers to individuals who show CF phenotypes in at least one organ system with normal (< 30 mmol/L) or borderline (30–60 mmol/L) sweat chloride concentration. [1]
Clinical manifestation	All six patients had a classical cystic fibrosis phenotype and presented with chronic steatorrhea and malabsorption from infancy, resulting in growth failure and chronic recurrent respiratory symptoms, including chronic sinusitis, mucus plugging, and bronchiectasis. [3]
Risk factor	NR
Diagnosis	Eleven patients had growth retardation, and 6 had respiratory failure at diagnosis. At diagnosis, the median z scores of forced expiratory volume in one second (FEV1), FEV1/forced vital capacity, and forced expiratory flow at 25%-75% of forced vital capacity were -3.61 (-5.78, 1.78), -3.38 (-4.40, -0.60), and -4.45 (-5.78, 0.54), respectively. [2] *Because of the prevalence of tuberculosis in Korea, the presence of a tree-in-bud pattern in patients with CF may occasionally lead to a misdiagnosis of tuberculosis and the subsequent administration of anti-tuberculosis medications. [1]

Treatment	All patients survived with supportive care. Early diagnosis and management are important for improving the clinical outcomes of patients with cystic fibrosis. [2]
Prognosis	NR
Genetic information	The most common mutation was exon 16-17b deletion (19.4%). Among 11 single nucleotide variants, c.1322T>C (p.Leu441Pro, L441P) was detected in 4 patients. In the functional assay, L441P-CFTR correction was well restored by CFTR correctors compared with ΔF508. [2] Among the six patients, five had at least one allele with a deletion of exons 16-17 b: four had a heterozygous deletion and one had a homozygous deletion. Six of 12 alleles (50%) showed 16-17 b multi-exon deletion. [1]
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Epilepsy

Incidence	The incidence of epilepsy increased from 28.7/100,000 persons in 2009 to 35.4/100,000 persons in 2017. [1]
Prevalence	The worldwide prevalence of epilepsy is 700 in 100,000 people, and it affects over 70 million people. The estimated prevalence of treated epilepsy across age groups in South Korea is 3.84 per 1000. [2]
Mortality	In 2019, 471 deaths were caused by epilepsy, accounting for 0.16% of all deaths in that year. The age-specific mortality rate increased with age, up to 7.01% among individuals aged 80 years and older, while the proportional mortality was the highest (3.80%) among individuals aged 5-14 years, which decreased with age. [3]
Gender	The prevalence and incidence are slightly higher in males across all age groups, but the differences are not statistically significant. [4] According to the 2016 survey data, the prevalence was higher in males (4.2 per 1,000 persons) than in females (3.47 per 1,000 persons). [4]
Age	Among a total of 18,228 incident patients, 6,063 (33.2%) were 65 years or older in 2017. [1]
Regional distribution	The prevalence and incidence vary more by socioeconomic factors than by geographic regions, with higher prevalence observed in middle- and low-income countries (6.68, 95% CI: 5.45–8.10) compared to high-income countries (5.49, 95% CI: 4.16–7.26). [4]
Clinical phenotypes/ Classification	Four different operational definitions were used to identify epilepsy cases in the NHIS database, which are designated as criteria A–D. In 2017, the estimated annual cumulative incidence rates of epilepsy were 35.4/100,000 person-years according to criteria A, 132.9/100,000, 58.1/100,000, and 24.4/100,000 person-years according to criteria B–D, respectively. [1]
Clinical manifestation	10.6% of patients were first diagnosed with epilepsy in 2009, and 53.6% of patients experienced at least one seizure over the course of 2009; 78.1% were classified as having localization-related epilepsy, whereas 7.3% were considered to have generalized epilepsy. Thirty-five percent of patients were thus classified as idiopathic or cryptogenic cases. The most common cause of symptomatic epilepsy was trauma (10.0%), followed by stroke (9.6%), central nervous system infection (5.7%), and hippocampal sclerosis (4.9%). [5]
Risk factor	The increases in the incidence and prevalence of epilepsy in Korea reported here appear to be related to various factors. Ageing of the population is the primary reason. According to resident registration population by census, the proportion of people older

	than 65 years relative to the total population of Korea has gradually increased, to exceed 14% in 2017, indicating that Korea is now an aged society. The Cardiovascular Health Study found that the prevalence of epilepsy increased from 3.7% to 5.4% during a 14-year follow-up period, and confirmed that a history of stroke was associated with a higher risk of developing epilepsy. [1]
Diagnosis	The clinical information of 6,436 patients surveyed in Phase 1 is as follows: 84% of the patients had undergone at least one electroencephalogram (EEG), and 80% had brain imaging (magnetic resonance imaging or computed tomography). Regarding epilepsy syndromes, focal epilepsy accounted for 78.1%, while generalized epilepsy accounted for 7.3%. In 35% of the cases, no specific cause was identified, and in 18%, the information was insufficient to determine the cause. Common identifiable causes included brain trauma, stroke, central nervous system infections, and hippocampal sclerosis, in that order. [6]
Treatment	Initial antiepileptic drugs (AEDs) monotherapy, followed by a second form of alternative monotherapy or an add-on combination therapy, was the preferred treatment strategy. The experts reached consensus for 87.2% of the items. The most commonly selected AEDs for the initial monotherapy for patients with generalized epilepsy were levetiracetam or valproate. For those with focal epilepsy, levetiracetam, oxcarbazepine, or lamotrigine were the most popular selections. Ethosuximide was the treatment of choice only for patients with generalized epilepsy with prominent absence seizures. Levetiracetam was preferred as an add-on therapy for both generalized and focal epilepsy. [7]
Prognosis	Dementia risk was significantly higher in patients with epilepsy compared with that of controls (incidence rate ratio: 3.65; 95% CI: 3.14-4.24), especially within the first 2 years post-diagnosis (aHR: 5.42; 95% CI: 4.30-6.83), peaking between 8 and 10 years (aHR: 8.25; 95% CI: 3.15-21.5). [8] Thirteen patients (14.3%) had ADHD symptoms. Three patients (4.1%) had depressive symptoms, and 9 (12.3%) had anxiety symptoms. Patients with idiopathic generalized epilepsy had significantly lower full-scale intelligence and performance intelligence quotient scores than patients with idiopathic localization-related epilepsy (89.0 ± 17.6 vs. 96.3 ± 14.8; P = 0.030 and 88.9 ± 16.3 vs. 97.0 ± 16.4; P = 0.016, respectively). [9]
Genetic information	The most frequently implicated genes were SCN1A (n = 49), STXBP1 (n = 15), SCN2A (n = 14), KCNQ2 (n = 13), CDKL5 (n = 11), CHD2 (n = 9), SLC2A1 (n = 9), PCDH19 (n = 8), MECP2 (n = 6), SCN8A (n = 6), and PRRT2 (n = 5). The recurrent genetic abnormalities included 15q11.2 deletion/duplication (n = 9), Xq28 duplication (n = 5), PRRT2 deletion (n = 4), MECP2 duplication (n = 3), SCN1A, c.2556+3A>T (n = 3), and 2q24.3 deletion (n = 3). [10]

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Familial Adenomatous Polyposis

Incidence	East Asians and Koreans had a carrier frequency of 0.35% and 0.37% and an estimated incidence of 1 in 330,409 and 1 in 293,304 in Koreans, respectively, which were substantially lower than the global average of 1 in 24,160 and the European (non-Finnish) incidence of 1 in 11,520. [1] *While this estimate pertains to *MUTYH*-associated polyposis rather than classic familial adenomatous polyposis (FAP), and thus cannot be regarded as a direct measure of its incidence, no specific incidence data for classic FAP in the Korean population appear to be currently available.
Prevalence	From June 1985 to April 2005 in a university hospital, familial adenomatous polyposis (FAP) was diagnosed in 40 patients, 0.67% of 5,960 colorectal cancer patients who were diagnosed with colorectal cancer and underwent surgery. [2]
Mortality	The number of confirmed deaths was 13 and the median age at death was 40 years (range, 27 to 85 years). Ten of the deaths (76.9%) were from colorectal cancer. [3]
Gender	Among the 148 patients, 87 (58.8%) were male and 61 (41.2%) were female. [4]
Age	The average age at initial diagnosis of FAP was 34.1 years, with extremes of age ranging from 13 to 77. [4]
Regional distribution	NR
Clinical phenotypes/ Classification	In 23 patients with duodenal adenoma, the Spigelman Classification was: stage I, 8 patients (4 points, 8 patients); stage II, 10 patients (5 points, 7 patients; 6 points, 3 patients); stage III, 5 patients (7 points, 3 patients; 8 points, 2 patients); and stage IV, 0 patient. [4]
Clinical manifestation	Among the 135 patients, initial symptoms included hematochezia (25.2%), diarrhea (17.0%), abdominal pain (10.4%), constipation (5.9%), and abdominal mass (1.5%). No symptoms were reported in 34.8% of patients, and 5.2% had other symptoms. [3]
Risk factor	Classic FAP is inherited in an autosomal dominant manner and results from a germline mutation in the adenomatous polyposis (APC) gene. Most patients (~70%) have a family history of colorectal polyps and cancer. [5]
Diagnosis	Sixty one out of 148 patients (41.2%) had colon cancer at initial diagnosis of FAP. One hundred twenty five patients underwent esophagogastroduodenoscopy (EGD) at initial diagnosis of FAP, but 23 patients did not undergo EGD at that time and underwent it during follow up. The median interval from initial diagnosis of FAP to the first endoscopy was 7.9 years. At the first endoscopy of 148 patients, gastric polyps were observed in 51

	patients (34.5%), and duodenal polyps were detected in 13 patients (8.8%). Seven patients (4.7%) had both gastric polyps and duodenal polyps. One patient (0.7%) had gastric cancer, and one patient (0.7%) had duodenal cancer. [4]
Treatment	Patients were subjected to one of the following procedures: total proctocolectomy with ileal pouch anal anastomosis (TPC/IPAA) with hand sewn or stapled anastomosis, TPC with end ileostomy, and total colectomy with ileorectal anastomosis (TC/IRA). The patients who underwent TPC/IPAA with mucosectomy with hand sewn anastomosis or TPC with end ileostomy did not have any remnant rectal mucosa. By contrast, the TPC/IPAA with stapled anastomosis or TC/IRA procedures left remnant rectal mucosa. [3] The standard prophylactic procedure for the majority of patients with FAP is TPC with IPAA. In selected patients, rectum-preserving surgery might be indicated. We performed TC with IRA in six patients who presented with a few rectal polyps. All of them developed adenomas on remnant rectal mucosa but did not develop any carcinomas. The cumulative risk of rectal cancer after IRA was reported to be about one-fourth of patients after 15-25 years despite surveillance. Therefore continuing endoscopic surveillance is necessary for these patients. The incidence of developing adenomatous polyps after TPC in the anorectal transient zone was reported as 10%-15%. [3]
Prognosis	There were two cases of gastric cancer that developed from benign gastric polyps. There were progressions of duodenal adenomatosis during follow-up, and some degree of relapse occurred after endoscopic resection. Patients with gastric polyps showed a correlation with the occurrence of duodenal neoplasm (odds ratio, 2.814; p=0.024). [4]
Genetic information	The APC mutation testing revealed 23 pathogenic mutations and one likely pathogenic mutation, among which were four novel mutations. The correlation between mutational status and clinical manifestations was investigated. Mutations that could predict poor prognosis were at codon 1309 which located on mutation cluster region, codon 1465 and codon 1507. [3]
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Gaucher Disease

Incidence	The number of newly registered Gaucher's disease (GD) patients by Korean Standard Classification of Diseases (KCD) was 5 in 2022. [1]
Prevalence	The global frequency of GD1 is often estimated at 1:50,000–1:100,000. [2] 36 patients were survived with Gaucher disease. [3]
Mortality	17/56 patients died in 2006. [3]
Gender	Of the 352 patients, 56.53% (N=199) were men. [4]
Age	Of the 352 patients, the mean age was 48.42±15.81 standard deviation (SD) years. [4] The age of type 1 patients at diagnosis ranged from 1 to 32 years. The age of type 2 patients at diagnosis ranged from 14 days to 1 year 2 months. The age of type 3 patients at diagnosis ranged from 7 years to 24 years 9 months in 6 patients with subtype 3A, and 11 months to 7 years 3 months in 8 patients with subtype 3B. [5]
Regional distribution	N/A
Clinical phenotypes/ Classification	GD is classically categorized into 3 major phenotypic subtypes: nonneuronopathic type 1, acute neuronopathic type 2, and subacute neuronopathic type 3. [5] The 20 patients enrolled in the study were classified into three types: nonneuronopathic type (n=11), acute neuronopathic type (n=2), and chronic neuronopathic type (n=7). [6]
Clinical manifestation	The median (range) duration of splenomegaly was 90 (1–15629) days and the mean size of splenomegaly was 14.57±3.40 SD cm. A total of 14.77% (N=52) patients had hepatomegaly. Of 352 patients, 161 patients had a history of bone marrow biopsy, of which 73 (20.74%) patients had a specific abnormality. The most common sign related to GD was splenomegaly (N=352, 100%), followed by thrombocytopenia (N=156, 44.32%) and anemia (N=144, 40.91%). One patient had a family history of GD: this patient was a sibling of another patient. [4]
Risk factor	Gaucher disease is a rare inherited lysosomal storage disorder caused by autosomal recessive inheritance of mutations in the GBA gene encoding the lysosomal enzyme acid β-glucosidase. [2]
Diagnosis	The most common method of diagnosis of splenomegaly was using CT (71.02%), followed by abdominal ultrasound (23.01%) and physical examination (6.53%). [4] The mean hemoglobin was 12.21±2.73 SD g/dL and it was abnormal in 52.01% (N=181) of patients. The mean serum iron was 85.89±62.24 SD μg/dL, serum ferritin was 541.61±1099.10 SD μg/dL, and transferrin was 144.94±123.09 SD mg/dL. Abnormal

	serum iron, serum ferritin, and transferrin were observed in 38.83%, 41.18%, and 46.67% of patients, respectively. [4]
Treatment	All GD patients require regular monitoring, however specific medication is not justified in all cases. Once it has been initiated, treatment must generally be administered for life. There are currently two specific types of treatment for GD: enzyme replacement therapy and substrate reduction therapy. [7] *The following medications are currently covered by the national health insurance in Korea for enzyme replacement therapy: Cerezyme (Sanofi Genzyme), Abcerin (ISU Abxis), and Vpriv (Shire). For substrate reduction therapy, oral agents such as Zavesca and Miglustat have been developed. In Korea, Cerdelga (eliglustat, Sanofi Genzyme), which was approved for reimbursement in 2018, is currently used for adults aged 18 years or older with type 1 Gaucher disease.
Prognosis	The 13 type 1 patients available for follow-up who were treated with enzyme replacement therapy all improved; but 1 patient (case No. 3) died 4 years 9 months after ERT was discontinued at the refusal of her parents. All 8 type 2 patients died within 2 years of age. All 14 type 3 patients treated with ERT showed improvement in nonneurologic symptoms and signs; however, in spite of ERT, 6 patients died with progression of neurologic symptoms. [5]
Genetic information	N370S, the most common mutant allele in Jewish and non-Jewish patient populations, and known to be always associated with type 1 GD, was not detected in our Korean patients. The L444P mutation was the most frequent mutation, seen in 20.8% of our patients, followed by G46E (13.9%), F213I (12.5%), and R257Q (9.7%). Indeed, 5 patients had homozygous mutations of these 4 alleles; 2 patients with L444P/L444P and 1 patient each with G46E/G46E, F213I/F213I, or R257Q/R257Q. [5]
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Hereditary Angioedema

Incidence	NR
Prevalence	The estimated prevalence of hereditary angioedema (HAE) in the general population is one individual per 50,000, with reported ranges from 1:10,000 to 1:150,000, without major sex or ethnic differences. [1] In a 2018 study conducted at 15 tertiary hospitals across Korea, the clinical characteristics and prevalence of hereditary angioedema in the Korean population were investigated. Based on the data from 65 confirmed HAE patients, the prevalence of HAE in Korea was estimated at 1.3 per 1,000,000 population. [2]
Mortality	There was no reported case of death from HAE so far. [3]
Gender	Of the 65 patients, 21 (32.3%) were males and 44(67.7%) were females. [3]
Age	The age at diagnosis was 36.5 ± 15.8 years, with a mean time delay of 7.8 ± 10.5 years. [3]
Regional distribution	NR
Clinical phenotypes/ Classification	Type I HAE accounts for approximately 85% of cases and is characterized by both reduced levels and functional activity of C1 inhibitor (C1-INH). In type II HAE, the C1-INH protein level is normal or elevated, but its functional activity is decreased to less than 50% of normal. [2] A total of 90.8% patients had type I HAE, while the remaining 9.2% patients had type II HAE. While the face (82.3%) and extremities (upper 71.0%, lower 62.9%) were the most frequently involved, the GI tract was affected in 40.5% of Korean HAE patients. [3]
Clinical manifestation	According to a 2018 study that reported the clinical characteristics of 65 Korean patients with hereditary angioedema, the most commonly affected sites were the face (82%) and skin of the extremities (71%). Gastrointestinal involvement was observed in 40.5% of patients, which is lower than the rates reported in Western countries (70%–80%). Hospitalization due to HAE exacerbation occurred in 27.3% of cases, while surgical or invasive procedures for laryngeal edema or intestinal obstruction were required in only 4.6% of patients. No HAE-related deaths were reported. [2]
Risk factor	Minor trauma, including dental procedures, is the most common trigger of acute HAE attacks. Other known triggers include the use of ACE inhibitors, stress, administration of exogenous estrogens, and hormonal changes such as menstruation and pregnancy. [2]
Diagnosis	When type I or II hereditary angioedema is suspected based on medical history, the accuracy of diagnosis can be improved by performing all three of the following tests:

	serum or plasma C1-INH protein level, C1-INH functional activity, and C4 concentration. [2] In one case report, the levels of complement C3 and C4 218 and 7 mg/dL, respectively, when he had visited the emergency room. [4]
Treatment	The treatment of hereditary angioedema is divided into three categories, On-demand treatment: Available options include Berinert, Cinryze, Haegarda, Ruconest, Icatibant, and Ecallantide. Short-term prophylaxis: Available options include Berinert, Cinryze, fresh frozen plasma, and Danazol. Long-term prophylaxis: Available options include Berinert, Cinryze, Lanadelumab, Berotralstat, Danazol, and Tranexamic acid. [2] Medication for long-term prophylaxis was administered in 44 (67.7%) patients. All 44 patients had used danazol, a male hormone. Twenty-five patients (56.8%) were females, and the maintenance dose of danazol was 231.55 ± 131.02 mg/day. [3]
Prognosis	Monitoring disease activity, control status, and the impact on daily life is important in the long-term prophylactic management of HAE. Since disease activity can fluctuate over time, patients are encouraged to consistently document their symptoms. Commonly used tools for this purpose include the Angioedema Activity Score and the Hereditary Angioedema Activity Score. [2]
Genetic information	In 2016, a case of a 24-year-old woman with type 2 hereditary angioedema was reported. She had no family history of angioedema. Although her C4 level was markedly decreased (3.40 mg/dL; normal range: 10-40 mg/dL), she presented with a very high C1-INH level (81.0 mg/dL; normal range: 21.0-39.0 mg/dL) and abnormally low C1-INH activity (less than 25%; normal range: 70%-130%). The SERPING1 gene mutation was confirmed in this patient. [5]
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Hereditary Ataxia

Incidence	NR
Prevalence	The prevalence rate of hereditary cerebellar ataxia patients in Korea is 4.99 patients/100,000 people. [1]
Mortality	NR
Gender	Of the patients who visited in 2023, 3,302 were male and 3,126 were female. [2]
Age	This study included 117 spinocerebellar ataxia (SCA) patients with a median age at onset of 40.6 years. [3] There were 226 patients of age 0–9 years, 149 of age 11–19 years, 202 of age 20–29 years, 272 of age 30–39 years in the hereditary cerebellar ataxia group, which suggested that 849 (35.3%) out of total 2,402 were diagnosed under the age of 40. [4]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 2,584 cases (39.2%), Busan: 401 cases (6.1%), Incheon: 260 cases (3.9%), Daegu: 372 cases (5.6%), Gwangju: 239 cases (3.6%), Daejeon: 172 cases (2.6%), Ulsan: 114 cases (1.7%), Gyeonggi: 1,200 cases (18.2%), Gangwon: 102 cases (1.5%), Chungbuk: 139 cases (1.7%), Chungnam: 91 cases (1.4%), Jeonbuk: 159 cases (2.4%), Jeonnam: 90 cases (1.4%), Gyeongbuk: 131 cases (2.0%), Gyeongnam: 415 cases (6.3%), Jeju: 93 cases (1.4%), Sejong: 25 cases (0.4%). [2]
Clinical phenotypes/ Classification	SCA3 was the most prevalent subtype, and oculomotor abnormalities were the most frequent extracerebellar signs in early-stage SCAs. Saccadic slowing was characteristic of SCA2 and SCA7, and gaze-evoked nystagmus was prominent in SCA6. Parkinsonism was relatively frequent in SCA8 and SCA3. Decreased visual acuity was specific for SCA7. Dementia was not an early manifestation of SCAs. Brain MRI revealed a pattern of pontocerebellar atrophy in SCA2 and SCA7, while SCA6 demonstrated only cerebellar cortical atrophy. [3]
Clinical manifestation	Spinocerebellar ataxia consists of a group of disorders that are clinically and genetically heterogeneous. It is characterized by progressive ataxia of gait, stance, and limbs. In addition, cerebellar dysarthria, oculomotor disturbances of cerebellar and supranuclear origin, retinopathy, optic atrophy, spasticity, extra-pyramidal signs, peripheral neuropathy, sphincter disturbances, cognitive impairment, and epilepsy are noted in varying degrees of severity. [5]
Risk factor	The family history was positive in 71.8% of the patients. [3]

Diagnosis	Out of 638 unrelated patients, 128 (20.1%) tested positive for SCA. SCA1 was diagnosed in 5 patients (3.9%), SCA2 in 38 patients (29.7%), SCA3 in 30 patients (23.4%), SCA6 in 39 patients (30.5%), and SCA7 in 16 patients (12.5%). SCA2, SCA3, and SCA6 were the most prevalent subtypes. [5]
Treatment	There is currently no approved therapy to treat cerebellar motor dysfunction, and no pharmacologic or surgical treatment is routinely used. Various therapies have been studied in clinical trials for the past 40 years, although no consensus has been reached on their effectiveness. [6] A total of 149 patients (hereditary:nonhereditary=86:63) were enrolled. There were significant differences in the change in the Korean version of the Scale for the Assessment and Rating of Ataxia (K-SARA) score at 24 weeks from baseline between the taltirelin group and the control group (-0.51±2.79 versus 0.36±2.62, respectively; p=0.0321). For the K-SARA items, the taltirelin group had significantly lower "Stance" and "Speech disturbance" subscores than the control group (-0.04±0.89 versus 0.23±0.79 and -0.07±0.74 versus 0.18±0.67; p=0.0270 and 0.0130, respectively). [7]
Prognosis	All patients were surveyed with the modified Rankin scale via telephone interviews or home visits to evaluate the severity of cerebellar ataxia. Our results showed that 55.9% of the hereditary cerebellar ataxia patients reported grade 0, 1, or 2 symptoms, but no major disabilities, so they were able to achieve ordinary self-care. There were 11.7% with grade 3 who had moderate disabilities and needed some assistance, but could walk without assistance; 14.7% with grades 4 and 5 had severe disabilities and were in bedridden state. [4]
Genetic information	The healthy CAG repeat number ranges of genes implicated in SCA1, SCA2, SCA3, SCA6, and SCA7 were 6-39 in ATXN1, 14-32 in ATXN2, 12-40 in ATXN3, 7-18 in CACNA1A, and 7-18 in ATXN7, respectively. The mean number of CAG repeats in pathogenic alleles was 45.4±8.5 (range, 38-60) in ATXN1 in patients with SCA1, 42.3±3.1 (36-50) in ATXN2 in patients with SCA2, 72.1±5.4 (54-80) in ATXN3 in patients with SCA3, 23.0±1.5 (21-27) in CACNA1A in patients with SCA6, and 50.1±11.4 (42-80) in ATXN7 in patients with SCA7. [5]
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Huntington's Disease

Incidence	The incidence rate was 0.29±0.32 (range=0.28–0.34) per 100,000 persons. [1]
Prevalence	The annual number of Huntington's disease (HD) cases in South Korea was 152.10±16.37 (mean±SD, range=139–473). [1]
Mortality	The mean age at onset among the 47 patients was 46.1 ± 14.0 years. At the time of data collection, 25 patients had died, and these patients had a mean age at death of 57.8 ± 13.7 years. The Kaplan-Meier estimate of the median survival from onset in the 47 patients was 14.5 years (95% confidence interval: 12.3–16.6). [2]
Gender	According to the NHI database, the mean number of HD patients receiving medical services annually between 2009 and 2013 was 190.60 ± 19.86 (ranges from 171 to 222), with the mean percentage of males being 43.42 ± 4.48%. [3]
Age	The peak age range at diagnosis was 50–59 years old, with 355 cases (23.3%), followed by 60–69 years with 289 (19.0%). The incidence rates were similar in those aged 40–49 and 70–79 years, at 239 (15.7%) and 234 (15.4%), respectively. [1]
Regional distribution	A notable divergence in HD occurrence exists between the Middle East and East Asia; the prevalence and incidence rates in the Middle East closely resemble those in Europe, North America, and Oceania, while rates in East Asia are notably lower. These disparities in HD prevalence across distinct ancestral populations are believed to stem from genetic variations at the HTT locus. Generally, populations with a higher HD prevalence tend to exhibit a greater average length of CAG repeats in the huntingtin (HTT) gene. [4]
Clinical phenotypes/ Classification	Eighty-seven patients were included, comprising 26 with late-onset HD (LoHD) (age at onset ≥60 years) (AAO=68.77±5.91 years, mean±standard deviation; 40.54±1.53 mutant CAG repeats) and 61 with common-onset HD (CoHD) (AAO=44.12±8.61 years, 44.72±4.27 mutant CAG repeats). The ages at death were 77.78±7.46 and 53.72±10.86 years in patients with LoHD and CoHD, respectively ($p<0.001$). The estimated survival time was 15.21±2.49 years for all HD patients, and 10.74±1.95 and 16.15±2.82 years in patients with LoHD and CoHD, respectively. More mutant CAG repeats and higher AAO were associated with shorter survival (hazard ratio [HR]=1.05, 95% confidence interval [CI]=1.01-1.09, p=0.019; and HR=1.17, 95% CI=1.03-1.31, p=0.013; respectively) for all HD patients. [5]
Clinical manifestation	Chorea (n = 41, 60.3%) was the most frequent initial symptom followed by psychiatric symptoms (n = 19), gait disturbance (n = 13), dysarthria (n = 9), cognitive impairment (n = 8), parkinsonism (n = 2), and urinary symptom (n = 1). Causes of hospital visit (chief complaints) were chorea (n = 58, 85.3%), gait disturbance (n = 18), psychiatric symptoms

	(n = 16), cognitive impairment (n = 12), dysarthria (n = 10), parkinsonism (n = 4), tremor (n = 3), limb ataxia (n = 2), dysphagia (n = 1), and dystonia (n = 1). [3]
Risk factor	Positive family history of HD was found in 43 patients (63.2%), with paternal transmission occurring in 26 patients (60.5%) and maternal transmission in 17 patients (39.5%). In 21 patients (30.9%), there was no identifiable family history. [3]
Diagnosis	Diagnosis is based on family history, personal history, neurological and psychiatric examinations, and genetic and any other appropriate testing. Genetic confirmation of HD is based on a CAG expansion of 36 or more repeats in the HTT gene. Full penetrance of HD in mutation carriers is exemplified by > 39 CAG repeats, reduced penetrance is observed between 36–39 repeats, while 35 or fewer repeats are considered normal. [4]
Treatment	During the 10-year follow-up period, tetrabenazine was used in only 8.7% of patients, and 74.0% of prescriptions were from tertiary or general hospitals. Tetrabenazine was used in 18.5% of patients with HD in a German study. In order to present the status of accessibility to HD treatment in South Korea, we analyzed the frequency of tetrabenazine prescription as it had been designated as an orphan drug in South Korea, although it was the only one approved for use in the management of Huntington chorea in South Korea. We demonstrated that tetrabenazine usage in South Korea was still uncommon and had been confined to tertiary or general hospitals. [1] *Currently, AUSTEDO (deutetrabenazine) has also been approved for use in South Korea since 2020, expanding the treatment options available for Huntington's disease.
Prognosis	In addition to disease progression, age at onset is known to be a predictor of survival in HD patients. Patients with juvenile-onset (younger than 20 years) and late-onset (older than 50 years) disease were reported to have shorter disease durations than HD patients with common onset (20–50 years). CAG repeat length was found to predict shorter survival in a study reported in 2022. [4]
Genetic information	The mean (±standard deviation) CAG repeat length in healthy individuals was 17.5 ± 2.0, with a reduced penetrance allele frequency of 0.05 % (1/1882) and intermediate allele frequency of 0.69 % (13/1882). We identified 213 patients with genetically confirmed HD whose CAG repeat length ranged from 39 to 140, with a mean of 45.2 ± 7.9 in the longer allele. Compared with normal CAG repeat alleles, intermediate CAG repeat alleles were significantly related to a higher risk of developing chorea (age of onset range, 63–84 years) in individuals aged ≥55 years. [6]
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Idiopathic Pulmonary Fibrosis

Incidence	The yearly incidence rate increased from 3.56 to 7.91 per 100,000 person-years over time. [1]
Prevalence	The yearly prevalence rate of idiopathic pulmonary fibrosis (IPF) increased from 7.50 to 23.20 per 100,000 people. [1]
Mortality	The age-standardized mortality rates were 85.66 (95% confidence interval 84.45-86.89) per 1000 person-years. The survival rates of IPF patients 1, 2, 3, 5, and 10 years after IPF diagnosis were 84.5%, 77.4%, 71.9%, 62.9%, and 48.4%, respectively. The standardized mortality ratio of IPF patients compared to that of the normal population was 4.66. [2]
Gender	The prevalence per 100,000 population was 33.97 in men and 12.48 in women. [1]
Age	The age distribution showed that there were 17 patients aged 29 years or younger, 23 in their 30s, 118 in their 40s, and 766 in their 50s. The number of patients increased markedly in older age groups, with 3,473 in their 60s, 5,094 in their 70s, and 2,540 aged 80 years or older. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	IPF patients were classified into two molecular subgroups (C1, C2) via unsupervised clustering. C1 was more enriched in the p53 signaling pathway and ciliated cells and presented a worse prognostic score, while C2 was more enriched for cellular senescence, profibrosing pathways, and alveolar epithelial cells. The p53 signaling pathway was closely correlated with a decline in forced vital capacity and carbon monoxide diffusion capacity and with the activation of cellular senescence. [3]
Clinical manifestation	At the time of diagnosis, 308 patients (14.4%) were asymptomatic. Among those patients with symptoms, the most common symptom was dyspnea (52.0%), followed by cough (50.4%). The mean modified Medical Research Council dyspnea scale was 1.4±1.0. [4]
Risk factor	Smoking history was reported by 71.0% of patients. At the time of diagnosis, 12.9% continued to smoke. A family history of interstitial lung diseases was reported by 3.4% of patients. [4]
Diagnosis	Among initial diagnostic workups, auto-antibody test for connective tissue was performed for 1,092 patients (68.7%). The mean GAP(gender-age-physiology) index was 3.4±1.5. At the time of diagnosis, 56.9%, 32.7%, 10.4% of patients were at GAP stage 1, 2, and 3, respectively. On initial chest CT, honeycombing was the most common finding. It was found in 67.0% of patients. Emphysema was combined in 32.7% of patients. The

	definite radiological usual interstitial pneumonia (UIP) pattern was found in 45.4% of patients. Lung cancer was diagnosed simultaneously with IPF in 3.4% of patients. [4]
Treatment	Pirfenidone was the most frequently prescribed drug initially (31.9%), followed by N-acetylcysteine (27.8%) and corticosteroid (13.7%). Nintedanib, another antifibrotic agent, was prescribed in only 2.2% of patients initially. At first, 187 (8.7%) patients were not treated. [4] Of the 12,943 IPF patients since 2016 in this study, 5449 (42.10%) had been treated with pirfenidone. [1] *This relatively low rate of pirfenidone use may be due to the lack of insurance coverage for this medication prior to October 2015 and/or to our definition of pirfenidone use as treatment with this agent for more than 3 months. [1]
Prognosis	About one-third of patients experienced acute worsening of IPF (n=654, 30.7%). Additionally, 4.2% (n=90) of patients experienced more than three episodes of acute worsening. For initial acute worsening, idiopathic acute exacerbation was the most common cause (n=411, 19.2%), followed by acute exacerbation with pneumonia or non-pulmonary infection (n=112, 5.2%). Heart failure occurred in six patients. No episode of pulmonary embolism was observed. [4]
Genetic information	The allele contrast model (T versus G) for MUC5B rs35705950 revealed statistically significant association of T allele with the risk of IPF [odds ratio (OR) 3.84, 95% confidence interval (CI) 3.20 to 4.61, adjusted p<0.0001), as was the allele contrast model for Asian (OR 2.83, 95% CI 1.51 to 5.32, adjusted p=0.009) and Caucasian (OR 4.11, 95% CI 3.56 to 4.75, adjusted p<0.0001). [5] A study investigated a single-nucleotide polymorphism at exon 1 nucleotide position 29 (T → C) of the TGF-β1 gene. The distribution of genotypes between IPF patients and controls was significantly different (IPF: TT 43.5 % and TC or CC 56.5 %; controls: TT 27.1 % and TC or CC 72.9 %, p = 0.037). TT genotype was significantly associated with decreased PaO2 and increased D(A-a)O2 upon initial diagnosis (p = 0.006 and 0.009, respectively). There was a positive association between TT genotype and IPF development (odds ratio [OR] = 2.1, 95 % confidence interval [CI] = 1.1-4.0, p = 0.028). [6]
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Multiple Sclerosis

Incidence	In our study, in 2016, the incidence of multiple sclerosis (MS) in Korea was 0.50 per 100,000 inhabitants. [1]
Prevalence	From 2010 to 2016, 1952 MS patients were newly diagnosed in Korea. [1]
Mortality	152 deaths under cause of death G35 between 1990 and 2003. According to the search for the 1,352 patients in the MS registry whose personal identifier was available, 54 deaths were identified and eliminated. [2]
Gender	A total of 1,290 patients with MS was identified, with a female to male ratio of 2.4:1. [1]
Age	The male-to-female ratio was 1:2.4, with a higher prevalence observed in females. [3]
Regional distribution	In terms of regional distribution, 81% of all patients were under follow-up in the metropolitan area (Seoul, Gyeonggi, Incheon). [3]
Clinical phenotypes/ Classification	Multiple sclerosis is classified into relapsing-remitting multiple sclerosis (RRMS), characterized by repeated relapses and remissions; primary progressive multiple sclerosis (PPMS), which progresses continuously from the onset without relapses; and secondary progressive multiple sclerosis (SPMS), which initially presents as relapsing-remitting but later progresses without recovery between relapses. [4]
Clinical manifestation	Sensory abnormalities (35%), weakness in one more limb (30%), brainstem symptoms (27%), vision decrease (25%), bladder/bowel dysfunction (9%) and cerebellar symptoms (7%) were chief the complaints. Optic neuritis tended to occur more commonly in younger patients, while motor deficits were more common in older patients. [5]
Risk factor	Vitamin D deficiency was also associated with an increased risk of MS. Activation of autoreactive pro-inflammatory T cells, humoral autoimmunity, and cytokine level were closely related to MS. [6]
Diagnosis	MS can present with a wide range of clinical symptoms and imaging findings, which may vary from patient to patient and can also change over time in a single individual. Therefore, MS cannot be diagnosed based on a single clinical symptom or test alone. A comprehensive evaluation that includes clinical presentation, imaging findings, and various diagnostic tests is essential for diagnosis. In particular, the McDonald criteria were developed for application only in cases presenting with typical features of MS. In cases with atypical symptoms, the criteria should not be applied, and the possibility of alternative diagnoses must be carefully considered. [4]

Treatment	Among the 1,199 patients receiving treatment, 876 (73%) were being treated with moderately effective drugs, such as interferon-beta, glatiramer acetate, dimethyl fumarate, and teriflunomide. A total of 264 patients (22%) were receiving high-efficacy therapies, including fingolimod, cladribine, natalizumab, or alemtuzumab. Additionally, 42 patients (3.5%) were undergoing immunosuppressive treatments not approved for multiple sclerosis—such as azathioprine, mycophenolate mofetil, or rituximab—and 17 patients (1.5%) were participating in clinical trials. [3]
Prognosis	Patients who were initially treated with interferon β (n=152), glatiramer acetate (n=6), or teriflunomide (n=2) were included. The mean disease duration was 8.2 years. Compared to pretreatment, annualized relapse rates were significantly reduced after treatment [from 1.0±0.8 to 0.2±0.4 (mean±standard deviation), p<0.001]. Poor response to first-line treatment was independently associated with a delay in treatment from disease onset (OR=1.238, p=0.049) and 10 or more brain lesions in the initial magnetic resonance imaging (OR=3.648, p=0.047). [7]
Genetic information	In human MS lesions, confocal imaging also demonstrated that the expression of PRDX6 and increased expression in GFAP-positive cells. [8] ICSNPathway analysis identified 9 candidate SNPs and 5 pathways, which provided 5 hypothetical biological mechanisms. The candidate SNPs, namely, rs1802127 (MSH5), rs9277471 (human leukocyte antigen [HLA]-DPB1), rs8084 (HLA-DRA), rs7192 (HLA-DRA), rs2072895 (HLA-F), rs2735059 (HLA-F), rs915669 (HLA-G), rs915668 (HLA-G), and rs1063320 (HLA-G) were all at HLA loci (-log10(P) = 3.301-4.000). The most strongly associated pathway was rs1802127 to MSH5 to meiotic recombination and meiotic cell cycle (nominal P < 0.001, false discovery rate [FDR] < 0.001). [9]
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Myasthenia Gravis

Incidence	The standardized incidence was 1.56/100,000 in 2019, decreasing to 1.21/100,000 in 2021. [1]
Prevalence	In total, 6,888 myasthenia gravis (MG) cases (male: 2,770; female: 4,118) were identified in 2019, and 7,439 MG cases (male: 2,962; female: 4,477) in 2021. [1]
Mortality	The adjusted HRs were 2.49 (95% CI, 1.26–4.94) for all-cause mortality, 3.14 (2.25–4.38) for the myasthenic crisis, 1.54 (1.15–2.06) for hospital admission, 2.69 (1.74–4.15) for pneumonia or sepsis, and 1.81 (1.28–2.56) for emergency department visits in the overall follow-up period. [2]
Gender	Among 7,439 patients, 2,962(39.8%) was men. [1]
Age	The mean age at first diagnosis was 57.3 ± 15.6 years in 2021. [1]
Regional distribution	As of 2021, the standardized incidence rates (per 100,000 population) of myasthenia gravis by region were as follows: Seoul: 1.33, Busan: 1.08, Incheon: 1.27, Daegu: 0.84, Gwangju: 1.39, Daejeon: 1.52, Ulsan: 0.80, Gyeonggi: 1.37, Gangwon: 1.05, Chungbuk: 1.51, Chungnam: 1.33, Jeonbuk: 1.96, Jeonnam: 0.71, Gyeongbuk: 0.92, Gyeongnam: 0.69, Jeju: 0.75, Sejong: 0.28. [1]
Clinical phenotypes/ Classification	We observed distinct demographic and clinical features of refractory patients at the baseline. The patients with refractory MG (rMG) were significantly younger, predominantly female, more frequently associated with thymoma, and received active treatment with ISAs and thymectomy than the patients with non-rMG. In unadjusted and adjusted analyses, we identified significantly higher risks for all-cause mortality, myasthenic crisis, hospital admission, pneumonia or sepsis, and emergency department visits for patients with rMG than for those with non-rMG. [2]
Clinical manifestation	The core clinical manifestation of MG is fatigable muscle weakness, worsened by exertion and improved by rest. The most common presenting symptoms are ocular, with double vision and ptosis. Most patients will develop diplopia and/or ptosis some time during the course of their disease. In addition, up to 80% of patients with ocular onset will go on to develop generalized symptoms, usually within two years of disease onset. [3]
Risk factor	Post-thymectomy MG developed in 4.2% (8/191) of the patients with thymoma between 18 days and 108 mo after surgery. Hazard ratios (HRs) of pre- and postoperative anti-acetylcholine receptor antibody (AChR-Ab) titers were 2.267 ($P = .002$) and 1.506 ($P < .001$), respectively. [4]

Diagnosis	In total, 87 patients were included in the study. Sixty-two patients had a final diagnosis of generalized MG, 8 of ocular MG, 3 of Lambert-Eaton myasthenic syndrome, 5 of motor neuron disease, and 9 of other or uncertain diagnoses. [5]
Treatment	In current treatment guidelines, non-target-specific immunosuppressive drugs, such as corticosteroids or non-steroidal immunosuppressive agents (ISAs), are used as first-line therapy for all patients who have not met treatment goals with acetylcholinesterase inhibitors (AChEIs). The prescription rate of AChEIs was high for both rMG and non-rMG. There were more prescriptions of corticosteroids and ISAs for rMG than for non-rMG, even before the index date (BID). The proportion of patients who used corticosteroids 12 months BID was 87.0% and 52.8% in rMG and non-rMG, respectively; the proportion of patients who used ISAs was 65.2% and 34.6%. After the index date (AID), > 90% of the patients used corticosteroids 3 months AID in both groups but the subsequent downward trend of corticosteroid use was more conspicuous in patients with non-rMG. [2]
Prognosis	Over a median follow-up duration of 5.58 years, the MG group (mean age 53.7 years; 55% women) had higher risk of major osteoporotic fracture compared with controls (incidence rate 13.59 versus 9.74 per 10 000 person-years). [6]
Genetic information	In global study, a correlation coefficient and p-value were calculated to investigate whether the frequency of MG and the prevalence of HLA alleles had a significant association. The results highlighted two HLA alleles, DRB1*04:04 and DRB1*03, to have a significant positive association with the prevalence of MG. [7] In human MS lesions, confocal imaging also demonstrated that the expression of PRDX6 and increased expression in GFAP-positive cells. [8]
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Neuromyelitis Optica Spectrum Disorder (NMOSD)

Incidence	The incidence rate was 0.65 per 100,000 person-years. [1]
Prevalence	In 2016, the overall prevalence rate was 3.36 per 100,000 persons. [1]
Mortality	Although mortality data have not been reported in Korean patients, a study from the USA found that patients with African ancestry had a higher mortality rate (15.4%) compared to the overall mortality rate (7.0%). [2]
Gender	The prevalence and incidence of neuromyelitis optica spectrum disorder (NMOSD) were higher in female individuals than in male individuals (male:female ratio, 1:4.69 in incident cases; 1:4.11 in prevalent cases). [1]
Age	In prevalent cases for 2017, the mean ages were 43.7 (standard deviation [SD], 14.3) years for the male group and 43.1 (SD, 14.1) years for the female group, and there was no significant difference relating to sex (P = 0.53). [1]
Regional distribution	As of 2023, the number of patients by medical institution region was as follows: Seoul: 1,167 cases (42.9%), Busan: 191 cases (7.0%), Incheon: 74 cases (2.7%), Daegu: 181 cases (6.6%), Gwangju: 89 cases (3.3%), Daejeon: 74 cases (2.7%), Ulsan: 16 cases (0.6%), Gyeonggi: 650 cases (23.9%), Gangwon: 16 cases (0.6%), Chungbuk: 15 cases (0.6%), Chungnam: 28 cases (1.0%), Jeonbuk: 43 cases (1.6%), Jeonnam: 14 cases (0.5%), Gyeongbuk: 20 cases (0.7%), Gyeongnam: 115 cases (4.2%), Jeju: 23 cases (0.8%), Sejong: 7 cases (0.3%). [3]
Clinical phenotypes/ Classification	NMOSD encompassing brain syndrome as well as optic neuritis and acute myelitis is now classified into aquaporine-4 (AQP)-antibody-seropositive and aquaporine-4 (AQP)-antibody-seronegative diseases, detecting more patients earlier than before. Seronegative NMOSD includes cases of myelin oligodendrocyte glycoprotein (MOG)-antibody-seropositive disease with its unique clinical spectrum somewhat different from AQP4-antibody-seropositive NMOSD. Pathologically, NMOSD includes AQP4-antibody-seropositive autoimmune astrocytopathic disease and MOG-antibody-seropositive inflammatory demyelinating disease. [4]
Clinical manifestation	Ocular pain was noted in 61 (56%) eyes. Disc swelling was present in 60 (53%) eyes. The initial visual acuity ranged from 20 / 20 to no light perception. Sixty-four (51%) eyes presented with an initial visual acuity of 20 / 200 or worse. [5]
Risk factor	For AQP4-antibody-positive NMOSD, female sex (female-to-male ratio of up to 9:1) and racial groups (more common in East Asians and Blacks than in Caucasians) are the most significant risk factors. [6]

Diagnosis	Of 91 patients, 13 (14%) patients had positive results in the antibodies to aquaporin-4 (called NMO-IgG or AQP4-Ab) test. Among the 49 patients who underwent an NMO-IgG test, 13 (27%) were positive. Of the 42 patients who visited after 2011, when we first started to check NMO-IgG routinely in optic neuritis patients, seven (17%) patients showed positive results, however, seven of the patients did not undergo an NMO-IgG test. [5]
Treatment	The most commonly used drugs were azathioprine (38%) and mycophenolate mofetil (19%). Nine percent of the extracted patients were treated with rituximab, and about 5% of the patients were prescribed other immunosuppressants such as tacrolimus, mitoxantrone, and methotrexate. [1] * According to the medical fee standard of Health Insurance Review & Assessment Service in Korea, patients could be treated with secondary line therapy such as rituximab in refractory cases for first-line therapy. Therefore, most patients had no choice but to use azathioprine or mycofenolate mofetil. [1]
Prognosis	Twenty-seven (30%) patients had optic neuritis in both eyes simultaneously or sequentially during the follow-up period and 19 (21%) patients presented with bilateral and simultaneous involvement at initial presentation. [5] Mean follow-up duration was 3.7 ± 3.3 years (range, 0.5 to 16.0 years). Overall seven relapses occurred in our subjects after intravenous methylprednisolone treatment. All of them had idiopathic ON. Ninety-one (73%) eyes achieved visual acuity of 20 / 40 or better. Twenty-four (19%) eyes attained 20 / 200 or less vision. [5]
Genetic information	The most significant risk allele for AQP4-IgG NMOSD was HLA-DRB1*03:01 (24 patients [19.67%], odds ratio [OR]: 3.997, pc value = 0.0001). Susceptibility of AQP4-IgG NMOSD was significantly associated with the HLA-DRB1*03:01-DQB1*02:01 (23 patients [18.85%], OR: 3.792, pc value = 0.0002) and DRB1*12:02-DQB1*03:01 (23 patients [18.85%], OR: 3.402, pc value = 0.0009) haplotypes. Patients with the DRB1*12:02-DQB1*03:01 haplotype showed more frequent spinal involvement, a higher Expanded Disability Status Scale score at disease-onset nadir, and a shorter time to second attack than patients without this haplotype. [7]
References	[1] Prevalence and Incidence of Neuromyelitis Optica Spectrum Disorder in Korea: Population Based Study. J Korean Med Sci. 2020;35(17):e115. [2] Epidemiology of Neuromyelitis Optica Spectrum Disorder and Its Prevalence and Incidence Worldwide. Front Neurol. 2020;11:501. [3] Korean Classification of Diseases. *Korea Classification of Diseases Statistical System (KOICD)*. https://www.koicd.kr/main.do. 2023. [4] Neuromyelitis optica spectrum disorders: still evolving and broadening. Curr Opin Neurol. 2019;32(3):385-394.

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Paroxysmal Nocturnal Hemoglobinuria (PNH)

Incidence	NR
Prevalence	NR
Mortality	Standardized mortality ratio analysis indicated that lactic dehydrogenase (LDH)≥ 1.5 × upper limit of normal (P < 0.001), Hb < 8 g/dL (P < 0.001), and Hb ≥ 8 g/dL (P = 0.004) were all risk factors for death; in contrast, patients with LDH < 1.5 × upper limit of normal had similar mortality to the general population. [1]
Gender	48.8% (n = 147) were female. [1]
Age	In total, 301 patients were included in the study, the median (interquartile range, IQR) age at diagnosis was 37.0 (27.0–50.2) years. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	Classic or clinical paroxysmal nocturnal hemoglobinuria (PNH) is characterized by significant intravascular hemolytic anemia with no signs of bone marrow failure, an elevated reticulocyte count, high LDH levels, and large PNH clones (> 50% of glycosylphosphatidylinositol-anchored protein [GPI-AP]–deficient granulocytes). PNH in the setting of a bone marrow disorder is defined by a history of associated bone marrow disease, karyotypic abnormalities typical of bone marrow disorders (i.e., aplastic anemia or myelodysplastic syndrome [MDS]), and < 50% of GPI-AP–deficient granulocytes. Conversely, subclinical PNH is asymptomatic, with no clinical or laboratory evidence of hemolysis and < 10% of GPI-AP–deficient granulocytes. [2]
Clinical manifestation	The most common finding was hemoglobinuria (82.6%) followed by abdominal pain (69.6%), dyspnea (52.2%), renal failure (43.5%), and thromboembolism (41.3%). [3]
Risk factor	plastic anemia is a known risk factor for PNH. In patients with aplastic anemia, the risk of developing clinical PNH is 15%-25%. [2]
Diagnosis	At diagnosis, 52.2% of patients (n = 157) were categorized as having classic PNH, 46.8% (n = 141) as having PNH-cytopenia, and 1.0% (n = 3) had subclinical PNH. In addition to the diagnosis of PNH, bone marrow disorders were reported in 47.8% of patients either before or after diagnosis of PNH. Of these, 41.5% of patients had a history of aplastic anemia and 6.3% of patients had a history of myelodysplastic syndrome. [1]
Treatment	The median patient age was 46 years and median duration of eculizumab treatment was 34 months. Treatment with eculizumab induced rapid inhibition of hemolysis. At 6-month follow-up, LDH decreased to near normal levels in all patients. Transfusion

	independence was achieved by 53.3% of patients within the first 6 months of treatment and by 90.9% after 36 months of treatment. The mean number of RBC units transfused was significantly reduced, from 8.5 units during the 6 months prior to initiation of eculizumab to 1.6 units in the first 6 months of treatment, for the total study population. [3]
Prognosis	In total, 50 patients (16.6%) experienced 74 thromboembolism (TE) events, which occurred at both venous and arterial sites. Most patients (43 [86.0%]) experienced TE events after PNH diagnosis (64 events [86.5%]). Of the 10 events (13.5%) that occurred in 7 patients (14.0%) pre-diagnosis of PNH, 9 (90%) took place within 43 days of the diagnosis. The event that took place 125 days pre-diagnosis was followed by an event 36 days pre-diagnosis in the same patient. Among the 43 patients (14.3%) from the full data set who died during the study, the most common cause of death was sepsis/infection (14 patients [32.6%]). [1]
Genetic information	PIGA mutations were detected in both granulocytes and T lymphocytes of 19 patients (79.2%), with a higher mutation burden in granulocytes. The GPI-AP deficient fractions of granulocytes and T lymphocytes correlated moderately (rs=0.519, P=0.049) and strongly (rs=0.696, P=0.006) with PIGA mutation burden, respectively. PIGA mutations were more frequently observed in patients with clonal rearrangements in TCR genes (P=0.015). The PIGA mutation burden of T lymphocytes was higher in patients with clonal TCRB rearrangement. [4]
References	[1] Impact of Lactate Dehydrogenase and Hemoglobin Levels on Clinical Outcomes in Patients With Paroxysmal Nocturnal Hemoglobinuria: Results From the National Korean PNH Registry. J Korean Med Sci. 2024;39(8):e81. [2] Paroxysmal nocturnal hemoglobinuria: role of the complement system, pathogenesis, and pathophysiology. J Manag Care Spec Pharm. 2020;26(12-b Suppl):S3-S8. [3] Efficacy of eculizumab in paroxysmal nocturnal hemoglobinuria patients with or without aplastic anemia: prospective study of a Korean PNH cohort. Blood Research, 52(3), 207-211. (2017) [4] Clonal Cell Proliferation in Paroxysmal Nocturnal Hemoglobinuria: Evaluation of PIGA Mutations and T-cell Receptor Clonality. Ann Lab Med. 2019;39(5):438-446.

Pemphigus Vulgaris

Incidence	The incidence of pemphigus vulgaris (PV) per 1 000 000 person-years was 2.059 (1.885 for males and 2.234 for females). [1]
Prevalence	NR
Mortality	Compared with patients with PV aged 50–59 years (death rate = 20.015), the increased hazard ratios were 2.789 (95% confidence interval [CI], 1.565–4.97) for those in their 60s, 6.625 (95% CI, 3.86–11.372) for those in their 70s, and 12.268 (95% CI, 6.929–21.72) for those 80 years and older. [1]
Gender	The female-to-male ratio was 1:1 (women 53, men 51). [2]
Age	For the 104 PV patients, the mean age of onset was 47.0 years (range, 19–75 years). [2]
Regional distribution	NR
Clinical phenotypes/ Classification	With regard to the disease severity at the initial visit, 41, 42 and 17% of PV patients had severe, moderate and mild disease severity, respectively. [2]
Clinical manifestation	Usually begins with oral mucosal lesions: buccal and/or gingival painful, persisting erosions which interfere with eating. Less common are non-cicatricial ocular lesions, and nasal, laryngeal, oesophageal, genital and anal erosions are also possible. [3] At initial presentation, skin involvement was observed in 95.2% of patients with pemphigus vulgaris (PV), while oral mucosa involvement was present in 98.1% of cases. [2]
Risk factor	The incidence of PV per 1 000 000 person-years was significantly higher in subjects with diabetes mellitus than in those without this condition (PV, 8.04 vs 1.76). Increased incidence per 1 000 000 person-years was observed in patients with hypertension compared with those without hypertension (PV, 4.679 vs 1.699). Subjects with dyslipidemia had a higher incidence of PV than did those without dyslipidemia (PV, 5.616 vs 1.795). [1]
Diagnosis	The diagnosis of pemphigus is based on four criteria : Clinical presentation, Histopathology, Direct immunofluorescence (DIF) examination of a perilesional skin or mucosal biopsy, Serological detection of autoantibodies against epithelial cell surface by indirect immunofluorescence (IIF) and/or enzyme-linked immunosorbent assay (ELISA Dsg1 and Dsg3). It is recommended to perform the following investigations for the diagnosis: A lesional biopsy for histopathology, A perilesional biopsy for DIF examination, Serology [3]

Treatment	Of the PV patients, 22 and 4% reached complete remission off therapy (56 months) and partial remission off therapy (39 months), respectively. [2] The PV group treated with rituximab (n = 15) achieved complete remission and overall (complete and partial) remission earlier than the PV group treated with conventional therapy (n = 89) (CR, 17 vs. 72 months; p = 0.001; OR, 17 vs. 32 months; p = 0.045). [2] In 2018, The implementation of the rituximab reimbursement policy by the NHI triggered a decrease in the total amount of corticosteroid intake throughout the treatment period. [4]
Prognosis	Complete/partial remission rate for PV was 77% at 5 years and 94% at 10 years after initial diagnosis. [2]
Genetic information	Among Korean patients with pemphigus, a significant increase was found in the frequency of HLA-DRB1*01 allele in PV, while DRB1*01, DQA1*0302 and DQB1*0603 allele subtypes are considered to be susceptibility genotypes in PF in this small-sample study. This allelic distribution/frequency pattern is, to some extent, different from those observed in Jewish, non-Jewish Caucasians and in some Oriental populations. [5]
References	[1] Incidence and death rate of pemphigus vulgaris and pemphigus foliaceus in Korea: A nationwide, population-based study (2006-2015). J Dermatol. 2018;45(12):1396-1402. [2] Long-term prognosis of pemphigus in Korea: retrospective analysis of 199 patients. Dermatology. 2011;223(2):182-188. [3] Updated S2K guidelines on the management of pemphigus vulgaris and foliaceus initiated by the european academy of dermatology and venereology (EADV). J Eur Acad Dermatol Venereol. 2020;34(9):1900-1913. [4] Clinical impact and a prognostic marker of early rituximab treatment after rituximab reimbursement in Korean pemphigus patients. Front Immunol. 2022;13:932909. [5] HLA class II allele associations in Korean patients with pemphigus. Dermatology. 1998;197(4):349-352.

Pulmonary Arterial Hypertension

Incidence	The overall incidence (per million person-years) increased by 12-fold between 2004 (0.5) and 2018 (6.3). [1]
Prevalence	The overall prevalence of pulmonary arterial hypertension (PAH) per million people has risen from 0.4 in 2002 to 29.9 in 2018. [1]
Mortality	The 5-year survival of incident PAH patients ranged from 67.0% to 78.6%, except in 2004 and 2005. During a maximum of 14.9 years of follow-up, the median survival of the overall incident PAH patients was 13.1 years. [1]
Gender	The female to male ratio ranged from 1.6 to 3.1. [1]
Age	Median [interquartile range] age was 50 [37–62] years old. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	The number (proportion) of patients classified as PAH-CHD, PAH-CTD, and IPAH were 893 (41.5%), 416 (19.3%), and 842 (39.1%), respectively. The median age was the highest in the IPAH group (56 years). Female sex was more common than male sex in all etiology groups, the proportion of which was the highest in the PAH-CTD group (86.5%). Patients with IPAH exhibited higher prevalence of comorbidities than those with other subtypes, probably due to their older age. [1] *IPAH = idiopathic pulmonary arterial hypertension; PAH-CHD = pulmonary arterial hypertension related to congenital heart disease; PAH-CTD = pulmonary arterial hypertension related to connective tissue disease
Clinical manifestation	Early symptoms of PAH include exertional dyspnea and fatigue. As the disease progresses, syncope, chest pain, palpitations, and peripheral edema often develop. Severe dyspnea, fatigue, and pain, as well as anxiety, depression, and existential distress are prevalent in advanced disease. [2]
Risk factor	Chronic lung disease is the second most common cause of pulmonary hypertension, affecting ~50% of patients with chronic obstructive pulmonary disease and two-thirds of patients with interstitial lung disease. [3]
Diagnosis	PH is often suggested by findings on transthoracic echocardiography, including an increased tricuspid regurgitant jet velocity >2.8 m/s, elevated systolic pulmonary artery pressure, and dilated right heart chambers. However, accurate hemodynamic measurement during right heart catheterization is essential for proper pulmonary hypertension clinical Classification and thereby informs appropriate treatment. [3]

Treatment	Cumulative data from clinical trials evaluating the efficacy of both sequential add-on or upfront combination PAH therapy demonstrate significantly decreased risk of clinical worsening compared with monotherapy (risk ratio = 0.65; 95% CI = 0.58, 0.72; P < 0.00001), as well as improvement in pulmonary hypertension specific outcomes. [3] In terms of drug regimens, monotherapy had been predominant in the early-mid 2000s, when prostacyclin analogue was the only available PAH-specific drug class in Korea. In 2018, 71% of the patients were given monotherapy, about 70% of whom were on endothelin receptor antagonist. Dual therapy first emerged in 2007, in accordance with the approval of bosentan, and has steadily increased up to 24.5% in 2018. Triple therapy was first observed in 2014, 1 year after the approval of phosphodiesterase-5 inhibitor. Although the number of patients on triple therapy has also continuously grown, it still held a minor proportion in 2018 (4.5%). Overall, the proportion of combination therapy was increased by 2.6-fold in 2018 (29%) compared to 2007 (11.3%). [1]
Prognosis	In a univariable Cox regression model, older age, highest household income quartile, IPAH or PAH-CTD etiology (as compared with PAH-CHD), and the presence of comorbidities were associated with an increased risk of mortality. On the contrary, female sex and the use of combination therapy were predictors of favorable prognosis. [1] After multivariable adjustment, older age, IPAH or PAH-CTD etiology (as compared with PAH-CHD), diabetes, dyslipidemia, and chronic kidney disease remained as predictors of higher mortality. [1]
Genetic information	About 70% of heritable pulmonary arterial hypertension and 10% to 40% of idiopathic pulmonary arterial hypertension patients possess mutations in bone morphogenetic protein receptor, type 2 (BMPR2), which is a type II receptor of TGF-β superfamily. Very rarely, mutations in another receptors of TGF-β superfamily, activin-like kinase-type 1 (ALK1) and endoglin (ENG) are found in pulmonary arterial hypertension patients with hereditary hemorrhagic telangiectasia. [4] Among 73 patients, 16 (22%) had BMPR2 mutations. Mutation carriers were younger (27 vs. 47 years; p = 0.02) and had a higher mean pulmonary arterial pressure (mPAP) than non-carriers (64 vs. 51 mmHg; p<0.05). [5]
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Sarcoidosis

Incidence	The average annual incidence between 2006 and 2017 was 0.82/100 000 person-years. [1]
Prevalence	The sarcoidosis prevalence was 9.37 per 100,000 people and was highest between ages 60–69 years. [2]
Mortality	Compared with the death rate in the total population in Korea, the death rate in sarcoidosis patients (9.25/1000) was high compared to the age- and sex-matched general population with a standardized death ratio of 2.19 (95% confidence interval [CI], 1.91–2.47) ($p < 0.0001$). [1]
Gender	67.3% of them were women (female to male ratio: 2.06). [3]
Age	The mean patient age was 47.4 years. [3]
Regional distribution	As of 2023, the number of patients with sarcoidosis by medical institution region was as follows: Seoul: 1,854 cases (44.3%), Busan: 182 cases (4.3%), Incheon: 189 cases (4.5%), Daegu: 289 cases (6.9%), Gwangju: 138 cases (3.3%), Daejeon: 101 cases (2.4%), Ulsan: 72 cases (1.7%), Gyeonggi: 783 cases (18.7%), Gangwon: 80 cases (1.9%), Chungbuk: 39 cases (0.9%), Chungnam: 52 cases (1.2%), Jeonbuk: 96 cases (2.3%), Jeonnam: 79 cases (1.9%), Gyeongbuk: 27 cases (0.6%), Gyeongnam: 158 cases (3.8%), Jeju: 45 cases (1.1%), Sejong: 5 cases (0.1%). [4]
Clinical phenotypes/ Classification	Although no phenotypic Classification studies have been reported in Korean populations, an overseas study proposed the following Classification: Cluster analysis resulted in 6 sarcoidosis phenotypes. Salient characteristics for each cluster are as follows: Phenotype (1) supranormal lung function and majority Scadding stage 2/3; phenotype (2) supranormal lung function and majority Scadding stage 0/1; phenotype (3) normal lung function and split Scadding stages between 0/1 and 2/3; phenotype (4) obstructive lung function and majority Scadding stage 2/3; phenotype (5) restrictive lung function and majority Scadding stage 2/3; phenotype (6) mixed obstructive and restrictive lung function and mostly Scadding stage 4. Phenotypes 1, 2, 3 have less lung function abnormalities, a lower percentage on immunosuppressive treatment and lower Wasfi severity scores. Phenotypes 4, 5, 6 were characterized by lung function abnormalities, more parenchymal abnormalities, an increased percentage of immunosuppressive treatment and higher Wasfi severity scores. [5]

Clinical manifestation	Sarcoidosis of the lung accounts for 27.23% of all cases followed by lymph node involvement (12.7%) and concurrence of both lung and lymph nodes (9.69%). Sarcoidosis of the skin was shown in 7.27%. [1] *Previously, sarcoidosis-specific and non-specific skin involvement has been reported in 9.6–33% of sarcoidosis patients depending on the population. In Korea and Japan, however, skin manifestations are less common than in Western countries. [1]
Risk factor	The incidence of sarcoidosis was significantly higher in subjects with comorbid metabolic diseases. The incidence of sarcoidosis per 100 000 person-years was significantly higher in subjects with diabetes mellitus than in those without this condition (2.40 vs 0.76). Increased incidence per 100 000 person-years was observed in patients with hypertension compared with those without hypertension (1.81 vs 0.74). Subjects with dyslipidemia had a higher incidence of sarcoidosis than did those without dyslipidemia (2.60 vs 0.74). [1]
Diagnosis	Endorbonchial ultrasound-guided transbronchial needle biopsy (EBUS-TBNB) was the most common diagnostic method (52.0%), followed by surgical lung biopsy (25.6%), extrathoracic lymph node biopsy (9.3%), and skin biopsy (9.0%). Supraclavicular lymph node was the most common biopsy site among the extrathoracic lymph nodes. [3]
Treatment	The use of corticosteroids has been a highly controversial issue in the treatment of sarcoidosis.36 Nevertheless, corticosteroids have been a mainstay treatment due to a lack of other effective treatment modalities. given the side-effects of glucocorticoids including osteoporosis, atherosclerosis, insulin resistance, glucose intolerance, hyperlipidemia, and central obesity, comorbid metabolic diseases in sarcoidosis patients should be carefully checked before treatment, since the use of corticosteroids may develop or aggravate metabolic conditions in individuals with sarcoidosis. [1] Of all patients, 58.9% were treated with systemic steroids. Other immunosuppressants were used by 16.1% of the total patients, and 90% were treated with systemic steroids. [3]
Prognosis	Eleven patients (3.0% of total patients) died during follow-up, and the most common cause was cancer (n = 4; two patients died of gastrointestinal malignancy and one of lung and endometrial cancer). Three patients died of the progression of sarcoidosis (two with liver involvement and one with neurosarcoidosis). Other causes of death were cerebrovascular disease (n = 2), ischemic heart disease (n = 1), and bacterial infection (n = 1). Among all patients, the 5-year survival rate was 99.0%, while the 10-year survival rate was 95.0%. [3]
Genetic information	Variants previously associated with sarcoidosis risk (HLA-C*03:04, HLA-DRB1*12:01, HLA-DRB1*14:54) and a known protective variant HLA-DPB1*04:01, were associated with sarcoidosis in Koreans. Further, study suggested new HLA variants associated with

	sarcoidosis risk (e.g., HLA-DQA1*05:08) and novel protective variants HLA-DQB1*03:02 and HLA-DQA1*01:02 in Koreans. [6]
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Systemic Lupus Erythematosus

Incidence	In contrast, the annual incidence of systemic lupus erythematosus (SLE) was 3.6/100,000 person-years in 2015. [1]
Prevalence	The annual prevalence of SLE was 35.45/100,000 people in 2015. [1]
Mortality	Twenty (4.8%) patients died during a median follow-up of 83 months, and the cumulative 5-year and 10-year survival rates were 96.9% and 95.5%, respectively. [2]
Gender	In 2015, the incidence of SLE among women was 6- to 8-fold higher than that among men (women: 1,578/100,000 person-years, men: 276/100,000 person-years). [1]
Age	The mean (±standard deviation) age at diagnosis was 30.9 (±12.9) years. [2]
Regional distribution	In 2015, the lowest incidence occurred in Inchon province (3.87/100,000 person-years) and the highest incidence occurred in Gwangju province (6.98/100,000 person-years). However, in 2005, Gyeongnam province showed the lowest incidence (3.02/100,000 person-years) and Gyeonggi province showed the highest incidence of SLE (6.82/100,000 person-years). [1]
Clinical phenotypes/ Classification	Patients with childhood-onset SLE had a higher proportion of lupus nephritis and malar rash, and lower proportion of lymphopenia than those with adult-onset or late-onset SLE (lupus nephritis, childhood-onset 49.1%, adult-onset 30.1%, late-onset 13.5%, P = .001; malar rash, childhood-onset 63.3%, adult-onset 47%, late-onset 37.8%, P = .032; lymphopenia, childhood-onset 59.6%, adult-onset 76.5%, late-onset 70.3%, P = .026). Patients with late-onset SLE comprised fewer women than those with childhood-onset or adult-onset SLE (late-onset 81.7%, childhood-onset 98.2%, adult-onset 92.2%, P = .011). [2]
Clinical manifestation	The most common clinical manifestation was leukopenia (74.3%), followed by lymphopenia (73.6%), arthritis (59.1%), malar rash (48.4%), thrombocytopenia (46.5%), oral ulcer (35.1%), and biopsy-proven lupus nephritis (31.2%). [2]
Risk factor	Men gender, older age, anti-Sm antibody, Systemic Lupus International Collaborating Clinics/American College of Rheumatology damage index, and corticosteroid dosage were potent predictors for cardiac involvement in patients with SLE in the determination of risk factors for cardiac involvement. [3]
Diagnosis	Anti-nuclear, anti-double-stranded DNA, anti-Smith, and anti-Ro antibodies were positive in 97.8%, 70.1%, 38.4%, and 63% of patients, respectively. [2] * Compared with SLE cohorts in other ethnicities or countries, our patients tended to have a higher frequency of anti-Ro antibodies and hematologic disorders. [2]

Treatment	The most frequently prescribed medication for SLE treatment was glucocorticoids (98.3%), followed by hydroxychloroquine (96.6%), cyclophosphamide (32.4%), mycophenolate mofetil (31.7%), azathioprine (20.6%), methotrexate (20.1%), and tacrolimus (8%). [2]
Prognosis	The major causes of death were infection (50%) and lupus flare-up (50%). Male (hazards ratio [HR] = 7.19, P = .001), pleuritis and/or pericarditis (HR = 3.28, P = .012), childhood-onset (HR = 3.57, P = .012), and late-onset (HR = 4.65, P = .011) were independent risk factors for death. [2]
Genetic information	A novel single-nucleotide polymorphism with SLE association was identified between FCHSD2 and P2RY2 peaking at rs11235667 (P = 1.0×10−8, odds ratio (OR) = 0.59) on a 33kb haplotype upstream to ATG16L2. Within the HLA region, association peaked in the Class II region at rs116727542 with multiple independent effects. Classical HLA allele imputation identified HLA-DRB1*1501 and HLA-DQB1*0602, both highly correlated, as most strongly associated with SLE. We replicated ten previously established SLE risk loci: STAT1-STAT4, TNFSF4, TNFAIP3, IKZF1, HIP1, IRF5, BLK, WDFY4, ETS1 and IRAK1-MECP2. [4]
References	[1] Trend of prevalence and incidence of systemic lupus erythematosus in South Korea, 2005 to 2015: a nationwide population-based study. Korean J Intern Med. 2020;35(3):652-661. [2] Clinical characteristics and survival of 413 patients with systemic lupus erythematosus in southeastern areas of South Korea: A multicenter retrospective cohort study. Int J Rheum Dis. 2020;23(1):92-100. [3] Anti-Sm Antibody, Damage Index, and Corticosteroid Use Are Associated with Cardiac Involvement in Systemic Lupus Erythematosus: Data from a Prospective Registry Study. J Korean Med Sci. 2020 May;35(21):e139. [4] Identification of a Systemic Lupus Erythematosus Risk Locus Spanning ATG16L2, FCHSD2, and P2RY2 in Koreans. Arthritis Rheumatol. 2016;68(5):1197-1209.

Respiratory

Allergic Rhinitis

Incidence	NR
Prevalence	allergic rhinitis (AR) prevalence risied from 5.84% (95% CI, 5.57–6.10) in 1998–2005 to 8.99% (8.09–9.91) in 2021. [1]
Mortality	NR
Gender	The weighted prevalence of allergic rhinitis was 6.36% (95% CI: 5.22–7.50) in males and 11.60% (95% CI: 10.27–12.93) in females in 2021. [1]
Age	In 2021, the weighted prevalence of allergic rhinitis was 10.08% (95% CI: 8.90–11.27) among individuals aged 19 to 59 years, and 6.30% (95% CI: 5.12–7.48) among those aged 60 years and older. [1]
Regional distribution	In 2021, the weighted prevalence of allergic rhinitis was 9.46% (95% CI: 8.44–10.48) in urban areas and 6.52% (95% CI: 4.57–8.47) in rural areas. [1]
Clinical phenotypes/ Classification	According to the ARIA (Allergic Rhinitis and its Impact on Asthma) Classification, the most frequent type of AR was moderate-severe persistent AR (41.2%), followed by mild persistent (27.9%), moderate-severe intermittent (18.9%), and mild intermittent (12.1%). [2]
Clinical manifestation	In patients with AR, nasal obstruction was the most common symptom (86.7%). A significantly larger number of patients complained of sneezing (63.5%) compared to those with NAR. The frequency of rhinorrhea and nasal itching was similar to that in NAR. Multiple symptoms were present in most AR patients; 205 patients (32.2%) complained of all symptoms, including rhinorrhea, sneezing, nasal obstruction, and nasal itching. [2]
Risk factor	One investigation identified several single-nucleotide polymorphisms, inhalant allergens, pollution, tobacco smoke, chemicals, and family affluence as risk factors for allergic rhinitis. In contrast, breastfeeding, older sibling, and microbial diversity were protective factors against allergic rhinitis. This suggests that various genetic and environmental factors might affect the manifestation and presentation of allergic rhinitis complexly. [3]
Diagnosis	If a patient presents with clinical symptoms such as rhinorrhea, sneezing, nasal itching, and nasal obstruction, and nasal examination reveals clear nasal discharge and pale, swollen inferior turbinates, allergic rhinitis can be suspected [2]. Anterior rhinoscopy or nasal endoscopy can help differentiate allergic rhinitis from

	other cuses of nasal symptoms such as nasal foreign bodies, nasal polyps, or deviated nasal septum. A definitive diagnosis of allergic rhinitis is made by identifying the causative allergen through skin prick testing or serum-specific IgE antibody testing. If sinusitis, nasal polyps, or intranasal tumors are suspected, plain radiography or computed tomography may be performed. [4]
Treatment	Korean and international clinical guidelines for allergic rhinitis recommend antihistamines for patients with mild intermittent symptoms, while intranasal corticosteroids are preferred in those with moderate to severe or persistent allergic rhinitis. [5] *Intranasal herbal therapies, including ointments, drops and sprays, are widely used for treating rhinitis in East Asian countries. Biyeom‐go administration was associated with significant improvements in total nasal symptoms scores ($P < .0001$) and mini‐rhinoconjunctivitis quality of life questionnaire scores ($P < .0001$) in a time‐dependent manner. The nasal endoscopy index also significantly improved at weeks 2 ($P = .0049$), 3 ($P < .0001$) and 4 ($P = .0001$) after Biyeom‐go treatment. [6]
Prognosis	As the prevalence of allergic rhinitis increases, studies on its natural course have been conducted, but definitive conclusions have yet to be reached. Reports on the natural course of allergic rhinitis vary by country. In Sweden, a follow-up study of 82 adults diagnosed with allergic rhinitis from 1979 to 1982 found that 1% experienced resolution of symptoms, 39% showed improvement, 39% had no change, and 21% worsened. In Italy, a 32-year follow-up study from 1980 to 2012 involving 46 allergic rhinitis patients reported that 45.7% showed symptom improvement, 26.1% remained unchanged, and 21.7% developed complications thought to be related to allergic rhinitis, such as sinusitis, otitis media, and lower respiratory tract diseases. In addition, asthma developed in 6.5% of the patients. [7]
Genetic information	Three single nucleotide polymorphisms (SNP) were associated with allergic disease at a level of genome-wide suggestive significance ($p<1.0\times10-5$) in the Korean population: rs7275360, located in neural cell adhesion molecule 2; rs698195; and rs3750552, located in family with sequence similarity 189, member A2. These polymorphisms were on chromosomes 21q21.1, 7q31.1, and 9q21.12, respectively. [8]
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Asthma

Incidence	According to the Korea National Health and Nutrition Examination Survey, the prevalence of asthma among Korean adults aged 19 years or older increased steadily from 1.2% in 1998 to 3.1% in 2010, and has since remained around 3% through 2018. [1]
Prevalence	The prevalence of asthma in Korea was 4.74% in 2015. [2]
Mortality	The asthma mortality had a steady rising trend from 16.2 to 28.0 deaths per 100,000 with the highest mortality in severe asthma. [3]
Gender	The female to male prevalence was higher than 1.4; 1.93% (95% CI, 1.928–1.940) in 2002 to 2.75% (95% CI, 2.748–2.761) in 2015 for females, 1.15% (95% CI, 1.149–1.159) in 2002 to 1.67% (95% CI, 1.667–1.677) in 2015 for males. [3]
Age	Of asthmatic patients, 38.7% in 2002 to 44.1% in 2015 were aged ≥ 60 years. [3] Current asthma exhibited a significantly higher prevalence in the population with adult-onset asthma compared to the population with childhood-onset asthma among adults (65.82%±1.84% vs. 20.6%±3.02%; P<0.001). [4]
Regional distribution	The KCHS data showed an increasing trend in overall prevalence, and a regional analysis revealed that Chungnam Province had the highest prevalence of 3.0% in 2013. The annual regional trends of asthma prevalence varied, and the prevalence in Jeju Province increased continuously. [5]
Clinical phenotypes/ Classification	Since the 2000s, clinical trials using biologic agents have confirmed differences in treatment responses according to various asthma phenotypes, which had been suggested even earlier, thereby bringing attention to the heterogeneity of asthma. Accordingly, the 2014 GINA report defined asthma as “a group of diseases with diverse pathophysiologies” and identified “variable symptoms” and “reversible expiratory airflow limitation” as common features of this disease group. Although many researchers have attempted to classify asthma based on its diverse pathophysiologies, a universally accepted Classification system has yet to be established. Therefore, apart from a few distinct phenotypes such as allergic asthma or eosinophilic asthma, the clinical application of asthma phenotyping remains limited. [1] Cluster analysis indicated four asthma subtypes: 1) smoking asthma; 2) severe obstructive asthma; 3) early-onset atopic asthma; and 4) late-onset mild asthma. [6]
Clinical manifestation	Asthma is one of the most common chronic airway diseases, characterized by variable symptoms—such as dyspnea, wheezing, chest tightness, and cough—and reversible expiratory airflow limitation. [1]

Risk factor	Airway hyperresponsiveness and allergen sensitization are themselves products of gene–environment interactions, serving both as characteristic features of asthma and as risk factors for its development. Factors currently known to be associated with the onset and exacerbation of asthma include genetic predisposition, obesity, allergens (antigens), infections, the microbiome, and occupational irritants. [1]
Diagnosis	Asthma is diagnosed by characteristic symptoms and variable expiratory airflow obstruction. Variable airflow obstruction can be confirmed by bronchodilator response or other tests, and should be established prior to the controller medication. In the diagnosis stage of asthma, triggering factors, comorbidities, patient knowledge, device technique, and severity should be assessed. [7]
Treatment	Controller treatment based on inhaled corticosteroid (ICS) should be started as soon as possible after the diagnosis of asthma, and the initial controller therapy can be selected according to the frequency and severity of the patient's symptoms. [7] More than 60% of patients (60.2% in 2002 and 65.0% in 2015) had ≥ 1 prescription for systemic corticosteroids during each year of the study period. inhaled corticosteroid, and a long-acting β agonist (ICS/LABA) inhaler use increased (8.6% in 2002 and 21.8% in 2015), but was used less often than other types of maintenance medications such as corticosteroids and xanthine (51.5% in 2002 and 50.3% in 2015). Oral maintenance medications, such as leukotriene receptor antagonist (11.3% in 2002 to 50.1% in 2015) and xanthine, were commonly prescribed in Korea. [3] *Systemic corticosteroids and xanthine uses were still high, which increased over the study period, even though it was not recommended for the treatment of asthma in the GINA guidelines. [3]
Prognosis	The natural course of asthma is not well understood; however, one report indicated that approximately 16% of recently diagnosed adult asthma patients achieve remission within five years. In contrast, when asthma progresses, the initially reversible expiratory airflow limitation may become fixed and unresponsive to medication, necessitating caution. [1] Along with symptom control, risk factors for future exacerbations (greater or equal to one severe exacerbation in previous year, poor compliance, incorrect inhaler technique, low lung function, smoking, eosinophilia, fixed airflow limitation, and adverse drug reactions) should be assessed. The most useful indicator of future risk is lung function. [7]
Genetic information	A total of 1,386 asthmatic patients and 5,205 controls were analyzed. The single nucleotide polymorphism (SNP) rs1770, located near the human leukocyte antigen (HLA)-DQB1, was the most significant SNP ($P = 4.5 \times 10-10$). [8]

References	[1] Korean guideline for asthma 2021. Seoul: Korean Academy of Asthma, Allergy and Clinical Immunology; 2021. [2] Epidemiology of patients with asthma in Korea: Analysis of the NHISS database 2006-2015. World Allergy Organ J. 2023;16(4):100768. [3] Increasing Prevalence and Mortality of Asthma With Age in Korea, 2002–2015: A Nationwide, Population-Based Study. Allergy Asthma Immunol Res. 2020 May;12(3):467-484. [4] Age of asthma onset and its relevance to adult asthma in the general population. Allergy Asthma Respir Dis. 2025 Jan;13(1):22-29. [5] High Prevalence of Asthma in Elderly Women: Findings From a Korean National Health Database and Adult Asthma Cohort. Allergy Asthma Immunol Res. 2018;10(4):387-396. [6] Identification of asthma clusters in two independent Korean adult asthma cohorts. Eur Respir J. 2013;41(6):1308-1314. [7] Summary of Korean Asthma Guideline, Tuberc Respir Dis. 2023;86(3):158-165. [8] Genome-Wide Association Study of Korean Asthmatics: A Comparison With UK Asthmatics. Allergy Asthma Immunol Res. 2021;13(4):609-622.

Chronic Obstructive Pulmonary Disease (COPD)

Incidence	The overall crude incidence rate per 100,000 person-years was 1,447. The standardized incidence rate corrected for the Korean general population was 1,550. [1]
Prevalence	During the study period(2015–2019), the overall prevalence of chronic obstructive pulmonary disease (COPD) was 12.9%. Over five years, the yearly prevalence of COPD was fairly constant, ranging from 11.5% to 13.6%. [2]
Mortality	Patients were followed-up for a mean ± SD number of 1,073 ± 954 days. During the follow-up period, deaths were reported in 2.0% of patients (n = 69/3,407). Cause of death was available for 38 patients; of these, 39.4% (n = 15) died due to a respiratory cause, while 18.4% (n = 7), 7.9% (n = 3), 5.3% (n = 2), and 28.9% (n = 11) died due to lung cancer, other cancer, heart disease, and other causes, respectively. [3]
Gender	Most patients were male (92.3%). [3]
Age	The mean age of the study population was 68.5 years. [3]
Regional distribution	Prevalence of COPD was 13.3% in Urban, and 14.1% in Rural area. In this study, COPD occurred more frequently in urban areas (compared to rural areas), although this difference was not statistically significant (P=0.22). [4]
Clinical phenotypes/ Classification	The Lancet Commissions on COPD recommended a new Classification based on five main risk factors. Patients were classified according to the etiologies (Type 1: Genetically determined (COPD-G), Type 2: Abnormal lung development (COPD-D), Type 3: Infections (COPD-I), Type 4: Cigarette smoking (COPD-C), Type 5: Biomass and pollution (COPD-P)). The database enrolled 3476 patients. Among 3392 patients, 52 (2 %), 1339 (39 %), 2930 (86 %), and 2221 (65 %) were compatible with type 2 (COPD-D), 3 (COPD-I), 4 (COPD-C), and 5 (COPD-P), respectively. [5]
Clinical manifestation	Hypertension was the most common comorbidity (37.6%), and 32.5% of patients reported depression or anxiety. [3]
Risk factor	In the multivariable analysis, age 70 years or older was the most strong factor associated with COPD (adjusted odds ratio [aOR], 17.86; 95% confidence interval [CI], 14.16–22.52; compared with age 40–49), followed by asthma (aOR, 3.39; 95% CI, 2.44–4.71), male sex (aOR, 2.64; 95% CI, 2.18–3.19), and current smokers (aOR, 2.60; 95% CI, 2.08–3.25). Additionally, ex-smokers, low income, decreased forced expiratory volume in 1 second %pred, and a history of pulmonary tuberculosis were associated with COPD. On the other hand, body mass index (BMI) ≥ 25 kg/m2 (aOR, 0.62; 95% CI, 0.54–0.71; compared with BMI 18.5–24.9 kg/m2) had an inverse association with COPD. [2]

Diagnosis	Most patients had moderate airflow limitation (GOLD grade 2: 54.4%), followed by those with severe or very severe airflow limitation (GOLD grades 3/4: 31.1%). The severity of breathlessness on exertion based on the mMRC dyspnea scale was reported as grade 0 in 16.7% of patients, while 50.0% reported grade 1 and 33.4% reported grade ≥ 2, respectively. One year prior to enrollment, 17.5%, 9.7%, and 19.8% of patients experienced ≥ 1 moderate, severe, or moderate or severe exacerbations, respectively. [3]
Treatment	Long-acting β-agonists (LABA) plus long-acting muscarinic antagonists (LAMA) were the most commonly prescribed medication (30.6%), with 29.5% receiving LABA plus LAMA in a single device. Other commonly prescribed treatments were theophylline (26.5%) and a combination of inhaled corticosteroids (ICS) plus LABA plus LAMA (24.5%; triple therapy), with 21.6% receiving triple therapy in a single device. [3]
Prognosis	The mean number of severe annual exacerbations was 0.2 each for years 1–3, with a mean of 1.1 moderate or severe exacerbations in years 1 and 3 and 0.9 in year 2. Overall, 40.8%, 36.1% and 39.4% of patients experienced ≥ 1 exacerbation during years 1, 2, and 3, respectively. [3]
Genetic information	The single nucleotide polymorphism (SNP) most associated with lung function decline was the rs75679995 SNP on chromosome 7, and those SNPs located within the TAD of the DNAH11 region and the eQTL of rs9991425 revealed a higher expression of MFAP3L and AADAT genes (P = 2.28 × 10−7 and 2.01 × 10−6, respectively). [6] GC2 variants are a risk factor for vitamin D deficiency in COPD patients. [7]
References	[1] Incidence and risk of chronic obstructive pulmonary disease in a Korean community-based cohort. Int J Chron Obstruct Pulmon Dis. 2018;13:509-517. Published 2018 Feb 5. [2] Recent Prevalence of and Factors Associated With Chronic Obstructive Pulmonary Disease in a Rapidly Aging Society: Korea National Health and Nutrition Examination Survey 2015–2019. J Korean Med Sci. 2023 Mar;38(14):e108. [3] Clinical Characteristics and Frequency of Chronic Obstructive Pulmonary Disease Exacerbations in Korean Patients: Findings From the KOCOSS Cohort 2012–2021. J Korean Med Sci. 2024 May;39(19):e164. [4] Prevalence of chronic obstructive lung disease in Korea using data from the fifth Korea national health and nutrition examination survey. Korean J Fam Med. 2015;36(3):128-134. [5] Application of the Lancet Commission COPD Classification to COPD Cohort Population in South Korea. Respir Med. 2024;230:107679. [6] Genome wide interaction study of genetic variants associated with lung function decline. Sci Rep 15, 9824 (2025).

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Non-Cystic Fibrosis Bronchiectasis

Incidence	NR
Prevalence	Estimated prevalences of non-cystic fibrosis bronchiectasis in South Korea from 2012 to 2016 were 435, 413, 427, 444, and 441 cases per 100,000 population, respectively. [1]
Mortality	During the follow-up period, mortality risk was 1.15-fold greater (95% confidence interval [CI] 1.09–1.22) for patients in the bronchiectasis cohort than for those in the matched cohort. [2]
Gender	51.7% of the patients were women. [2]
Age	The mean age of the bronchiectasis cohort was 58.7 years. [2]
Regional distribution	NR
Clinical phenotypes/ Classification	NR
Clinical manifestation	The most persistent and often presenting symptom is a chronic productive cough, present in 96% of 103 patients referred to a pulmonary outpatient clinic, with the amount of sputum being among the main determinants of quality of life. Dyspnoea, fatigue and upper respiratory tract symptoms are encountered in 60-70% of patients. About half of the patients describe having specks of blood in their sputum at any time, but haemoptysis resulting in immediate medical consultation is present in a quarter of patients. Pleuritic or musculoskeletal chest pain is present in 25-50% of patients and chest pain is often the reason for repetitive investigations at emergency departments. Physical examination is often unremarkable except for the presence of crackles, mostly bilateral at the lower lobes. [3]
Risk factor	In a study highlighting the causes of bronchiectasis in Korean children and adolescents, the most common cause was pre-existing respiratory infections (55.3%), followed by post-infectious bronchiolitis obliterans (14.3%), pulmonary tuberculosis (12.3%), combined heart diseases (5.6%), primary ciliary dyskinesia (4.5%), primary immunodeficiency (3.3%), recurrent aspiration with or without gastroesophageal reflux (3.0%), neuromuscular diseases (2.8%), congenital lung diseases (2.8%), cystic fibrosis (1.4%), and interstitial lung diseases (1.4%). [4]
Diagnosis	Patients with non-cystic fibrosis bronchiectasis carried higher fibrinogen (3.00 ± 2.31 vs. 1.52 ± 0.74 μg/mL; p = 0.016) and adiponectin (12.3 ± 5.07 vs. 9.17 ± 5.30 μg/mL; p = 0.031) levels compared with healthy controls. The serum level of angiopoietin-2 was

	comparable between the two groups (1.49 ± 0.96 vs. 1.21 ± 0.79 ng/mL, p = 0.277). [5]
Treatment	The study identified randomized controlled trials which elucidated long-term macrolide treatment (≥ 4 weeks) in non-cystic fibrosis bronchiectasis in children aged < 18 years. Long-term macrolide treatment showed a significant decrease in the frequency of exacerbation (odds ratio [OR], 0.30; 95% confidence interval [CI], 0.10-0.87), mean number of exacerbations per patient (mean difference, - 1.40; 95% CI, - 2.26 to - 0.54), and sputum purulence score (mean difference, - 0.78; 95% CI, - 1.32 to - 0.24). However, long-term macrolide treatment was accompanied by an increased carriage of azithromycin-resistant bacteria (OR, 7.13). [6]
Prognosis	A study found that patients with bronchiectasis were at increased risk of mortality compared to an age-, sex-, insurance type-, and Charlson Comorbidity Index-matched population. The risks were highest in elderly patients and men. Bronchiectasis-related comorbidities (asthma, COPD, pneumonia, lung cancer, and cardiovascular diseases) could explain the increased risk of death in the bronchiectasis cohort relative to the matched cohort; however, patients in the bronchiectasis cohort without the comorbidities did not have increased risk of death compared to the matched cohort, except for non-tuberculous mycobacteria infection. [2]
Genetic information	NR
References	[1] Trends in the Prevalence of Non-TB Mycobacterial Infection in Patients With Non-Cystic Fibrosis Bronchiectasis in South Korea, 2012-2016. Chest. 2021;159(3):959-962. [2] Increased mortality in patients with non cystic fibrosis bronchiectasis with respiratory comorbidities. Sci Rep. 2021;11(1):7126. Published 2021 Mar 29. [3] Non-cystic fibrosis bronchiectasis: clinical presentation, diagnosis and treatment, illustrated by data from a Dutch Teaching Hospital. Neth J Med. 2015;73(4):147-154. [4] Evidence-based management guidelines for noncystic fibrosis bronchiectasis in children and adolescents. Clin Exp Pediatr. 2024;67(9):418-426. [5] Serum Fibrinogen as a Biomarker for Disease Severity and Exacerbation in Patients with Non-Cystic Fibrosis Bronchiectasis. J. Clin. Med. 2022, 11, 3948. [6] Long-term macrolide treatment for non-cystic fibrosis bronchiectasis in children: a meta-analysis. Sci Rep. 2021;11(1):24287.

Pneumonia

Incidence	NR
Prevalence	In 2017, the total number of patients was 10,648. [1]
Mortality	The total number of deaths due to pneumonia was 3697. Of these, 3143 were elderly patients with comorbidities, accounting for 85.0% of the total. [1] The mortality of community-acquired pneumonia (CAP) in cases of outpatients is reported to be 1% to 5%, whereas that in CAP necessitating hospitalization is reported to be as high as 25%. [2]
Gender	In all age groups, there were more male patients than female patients ($p < 0.001$). (male weighted percentage: 4.4%; female weighted percentage: 4.1%) ($p < 0.001$). [1]
Age	In 2017, the total number of patients was 10,648: 4668 children, 349 adolescents, 1805 adults, and 3826 seniors. [1]
Regional distribution	The region with the highest number of discharged pneumonia patients per 10,000 persons was Jeju, followed in order by Ulsan, Jeollabuk-do, Gyeongsangnam-do, and Chungcheongnam-do. [1]
Clinical phenotypes/ Classification	The 30-day mortalities of all patients were calculated with their Pneumonia Severity Index (PSI) classes and CURB-65 (confusion, urea, respiratory rate, blood pressure, and age $\geq$65 years) scores. The overall mortality rate was 4.5% (40/883). The mortality rates per CURB-65 score were as follows: score 0, 2.3% (6/260); score 1, 4.0% (12/300); score 2, 6.0% (13/216); score 3, 5.7% (5/88); score 4, 23.5% (4/17); and score 5, 0% (0/2). Mortality rate with PSI risk class were as follows: I, 2.3% (4/174); II, 2.7% (5/182); III, 2.3% (5/213); IV, 4.5% (11/245); and V, 21.7% (15/69). [2]
Clinical manifestation	The pneumonia starts with symptoms similar to those of cold and flu, then a high fever, chills and cough, and sputum follow. Other symptoms include chest pain, tachycardia, nausea and vomiting, headache, muscle pain, confusion or delirium, or skin discoloration and cyanosis. These symptoms may vary depending on the type of pneumonia and other underlying conditions. [3] Regarding clinical symptoms, high fever was present in 59.4% and dyspnea in 19.9% of cases. [4]
Risk factor	The risk of pneumonia increased significantly in groups with a higher number of dental caries and missing teeth, with respective adjusted hazard ratios (HRs) and 95% confidence interval (CI) of 1.265 (1.086–1.473; $p = 0.0025$) and 1.218 (1.113–1.332; $p < 0.0001$). [5]

	Angiotensin-converting enzyme inhibitors (adjusted odds ratio [aOR], 0.660; 95% confidence interval [CI], 0.558–0.781), Angiotensin II receptor blockers (aOR, 0.702; 95% CI, 0.640–0.770), and other antihypertensive drugs (aOR, 0.737; 95% CI, 0.665–0.816) were significantly associated with reduced pneumonia risk. [6]
Diagnosis	A retrospective analysis of children hospitalized for CAP at 4 referral hospitals during 2015-2020 was performed. Pathogens were detected in 49.9% of cases, with viruses in 32.3%, atypical bacteria in 17.8%, and pyogenic bacteria in 2.3% of cases. As single pathogens, M. pneumoniae (16.8%) and respiratory syncytial virus (RSV, 13.7%) were the most common. [4]
Treatment	Etiologic diagnosis is important for choosing appropriate antibiotics to treat pneumonia. Etiologic diagnosis is often difficult even though the development of imaging and microbiologic diagnostic techniques. Antibiotic treatment should be empirically started against pathogens presumed based on clinical manifestations and imaging patterns before microbiologic results are available. [3] For treatment outcome, improvement, which corresponds to complete recovery or symptomatic improvement, was the most common outcome in all age groups. However, the percentage of patients with no improvement and death increased with increasing age ($p < 0.001$). [1]
Prognosis	In terms of the length of stay, 4–7 days was the most common in all age groups except for seniors. Following this, three days or less was common in children and adolescents, and 8–13 days was common in adults ($p < 0.001$). In contrast, in seniors, 8–13 days was the most common, followed by 4–8 days, ≥21 days or more, 14–20 days, and ≤3 days. [1]
Genetic information	The primary outcome was the incidence of aspiration pneumonia. Analysis of the association between genetic polymorphisms and aspiration pneumonia history showed that a minor C rs429358 allele was associated with the occurrence of aspiration pneumonia in the young group, both in the additive and the dominant models (odds ratio: 4.53; 95% CI: 1.60–12.84, $p = 0.004$). [7]
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Others

Androgenetic Alopecia

Incidence	Among 75,471 patients who newly visited the dermatologic clinic in ChungAng University Hospital from 2006 to 2015, 4-8% were diagnosed with alopecia. Of these androgenetic alopecia (AGA) was diagnosed in 68% (n=2,733) of all alopecic patients. [1]
Prevalence	Among 10,132 subjects (5,531 men and 4,601 women) who visited the Health Examination Centre at Kyung Hee University Hospital for regular health examination between December 1997 and July 1999, the prevalence of AGA was 14.1% and 5.6% for men and women, respectively. [2]
Mortality	NR
Gender	The prevalence of AGA was 64.6% (n = 678) in the male subjects and 36.8% (n = 360) in the female subjects. [3]
Age	The mean age of male participants was 55.13 years (55.8 in the AGA group, 53.9 in the control group). The mean age of female participants was 55.69 years (56.7 in the AGA group, 55.1 the control group). [3]
Regional distribution	NR
Clinical phenotypes/ Classification	The Norwood Classification divides the patterns into seven with four subdivisions (I, II, III, III vertex, IIIa, IV, IVa, V, Va, VI, VII) in which the letter 'a' was applied to cases with advanced recession of frontal hairline, and the term 'vertex' to those with an isolated balding patch on the crown. In contrast to findings in caucasians and the Japanese, type III vertex was the most common type in Korean men up to the age of 69 years. [2]
Clinical manifestation	The progressive miniaturization of hair follicles is characteristic, and the hair on the front and top parts of the scalp gradually tapers and the hair line retreats. [2]
Risk factor	The subjects with a family history of AGA had 3.65-fold (95% CI 2.65–5.06) and 3.27-fold (95% CI 2.40–4.44) higher risk of developing AGA among male and female subjects, respectively. Additionally, menopausal women had a 2.60-fold (95% CI 1.86–3.64) higher risk of developing AGA compared to those who continued to have menstrual cycles. [3]
Diagnosis	The study enrolled 240 male patients diagnosed with AGA, classified into 4 groups based on the V stages of the Basic and specific (BASP) Classification: V0 (n = 53), V1 (n = 104), V2 (n = 55), and V3 (n = 28). Average hair thickness decreased with the severity of AGA, with the thickest average hair measurements observed in the V0 group (51-98 μm, mean 70 ± 10 μm) and the thinnest in the V3 group (24-65 μm, mean 38 ± 8 μm). Hair density showed a marginal decrease from V0, with values ranging from 77 to 231 hair/cm2 (mean 149 ± 30 hair/cm2), to V3 where the range was 46 to 208 hair/cm2 (mean 122 ±

	37 hair/cm2). The percentage of thin hair, defined in the paper that first introduced hair diameter diversity as having a diameter of ≤40 μm,6 demonstrated a significant increase with advancing BASP V stages. In the V0 group (control), patients exhibited 0% to 35% thin hair (mean 13 ± 8%), whereas in the V3 group, representing the most advanced stage of AGA, there was a higher range of 18% to 94% thin hair (mean 62 ± 19%). [4]
Treatment	Among patients treated with recommended, on-label dosing exclusively (n=535: dutasteride, n=250; finasteride, n=285), dutasteride-treated patients showed greater improvement in hair growth than finasteride-treated patients, as measured by the BASP basic M Classification (adjusted incidence rate ratio [95% confidence interval]: 2.06 [1.08, 3.95]; p=0.029). Among this same subset, overall occurrence of adverse events during the observation period were not statistically equivalent between groups (dutasteride 7.6%, finasteride 10.5%; p=0.201), although reports of adverse events of special interest were equivalent (p<0.001). [5]
Prognosis	Of the total 126 patients, 108 (85.7%) showed improvement after 5 years of treatment(Finasteride 1 mg). According to the BASP Classification, hair loss of the anterior hair line (basic type), vertex (V type), and frontal area (F type) was improved in 44.4%, 89.7% and 61.2% of patients, respectively. [6]
Genetic information	Genome-wide association studies for the total, male-only, and female-only groups, identifying three novel loci (rs7814359, rs2163085, and rs4793158 of the TSNARE1, FZD1, and GJC1 genes, respectively). [7]
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Anticoagulant (warfarin)-associated Intracranial Hemorrhage

Incidence	The total intracranial hemorrhage rates were 0.7 % and 0.4 % in the warfarin and non-vitamin K antagonist oral anticoagulant (NOAC) groups, respectively. [1]
Prevalence	In the study, the final number of the patients taking warfarin or NOACs was 5,626 and 7,195, respectively, and the number of patients who presented with spontaneous intracranial hemorrhage (ICH) was 3,483. [1]
Mortality	In-hospital mortality was higher in the warfarin-associated ICH (WICH) group than in the NOAC-associated ICH (NICH) group (17.4% versus 0%, respectively). Moreover, mortality at 3 months was significantly higher in the WICH group than in the NICH group (30.4% versus 0%, P = 0.026). [2]
Gender	Of the patients, 31 (67.4%) were men and 15 (32.6%) were women. [1]
Age	The mean age was 69.2 ± 14.2 years. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	The mean Internatinal normalized ratio (INR) was 2.41 in the warfarin group and 1.27 in the NOAC group. Most patients (92.3 %) in NOAC group had INR < 2 (69.2 % patients' INR ≤ 1.2), and, even in patients with sICH, the majority of individuals (47.8 %) in the warfarin group had INR values < 2 (13.0 % patients' INR ≤ 1.2), with same distribution of INR range 2–3 and INR value > 3 (26.1 % each, respectively). [1]
Clinical manifestation	Thirty five patients (5.6%) were taking warfarin at admission. Fourteen patients (40%) took warfarin for heart valve diseases, seven (20%) for atrial fibrillation, seven (20%) for ischemic stroke, four (11%) for PTE, and three (9%) for venous thromboembolism. [3]
Risk factor	The most common underlying disease was hypertension (31.4 % of total patients), and the second most common condition was diabetes mellitus (20.9 %). [1] A history of diabetes mellitus and taking warfarin were significant risk factors of lobar ICH. [3]
Diagnosis	At admission, the median INR value was 2.1 (interquartile range [IQR], 1.2-3.3) in all warfarin associated ICH (WAICH) patients, 2.9 in lobar (IQR, 2.1-3.6), 1.7 in deep (IQR, 1.0-2.9), and 0.9 in posterior fossa (p = 0.202). The number of lobar ICH patients in WAICH whose INR value under 2.0 was three (20%), while that of the lobar patients whose INR value over 2.0 was 10 (52.6%) (p = 0.051). [3]

Treatment	According to American Heart Association recommendations, in patients with a very high risk of thromboembolism in whom restarting warfarin is considered, warfarin therapy may be restarted at seven to 10 days since onset of the original hemorrhage. Proper restart of warfarin treatment after anticoagulation associated intracranial hemorrhage was not prescribed for almost half of patients (47.2%, 17/36). The probability of thromboembolic complications after cessation of anticoagulation at 7, 14, and 30 days was 0.00, 10.53, and 38.49%, respectively. [4]
Prognosis	Hematoma expansion (odds ratio [OR]: 50.546; 95% confidence interval [CI]: 2.763-924.748; P = 0.008) and concomitant intraventricular hemorrhage (OR: 9.240; 95% CI: 1.450-58.892; P = 0.019) were independently associated with mortality at three months, after adjustment for confounding variables. [2]
Genetic information	A study identified a haplotype, H2 (TCG), carrying three single nucleotide polymorphisms (SNPs) of ACE (rs1800764, rs4341, and rs4353), which showed a significant relation with bleeding complications. [5]
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Graft-versus-Host Disease (GvHD)

Incidence	In 116 patients with acute myeloid leukemia (AML) or myelodysplastic syndrome (MDS) aged 60 years and older, The estimated incidence of grade II-IV acute graft-versus-host disease (GvHD) at day 100 was 13.7%. The estimated incidence of chronic GvHD at 2 years was 38.8%. [1]
Prevalence	NR
Mortality	Within a median follow-up of 14 months after hematopoietic stem cell transplantation, overall survival was 64% at 1 year and 55% at 2 years, and non-relapse mortality was 20% at 1 year and 28% at 2 years. [1]
Gender	NR
Age	The ratios of males to females for acute and chronic GVHD were 55:45 (Male: 176, Female: 144) and 53:47 (Male: 111, Female: 100), respectively. [2, 3]
Regional distribution	NR
Clinical phenotypes/ Classification	Classic acute GvHD occurs before day 100 and is staged according to the percentage of body surface area with rash, total bilirubin elevation, and volume of diarrhea. Late acute GvHD occurs after day 100 and is defined as signs and symptoms of acute GvHD without chronic GvHD. Late acute GvHD is further subdivided into “persistent” if it is a continuation of classic acute GvHD, “recurrent” if classic acute GvHD resolves then recurs after day 100, or “de novo” if initial onset is after day 100 without any prior acute GvHD. [4]
Clinical manifestation	Acute GvHD mainly affects the skin, gut and liver but can affect almost any part of the body. [5] Approximately 30% of chronic GvHD is de novo without any preceding acute GvHD. At onset, many patients have an inflammatory skin rash, oral sensitivities or dryness, or dry, irritated eyes. [4]
Risk factor	Factors that can increase the likelihood of acute GvHD include older recipient/donor, sex mismatch and specifically a multiparous female donor into a male patient. Furthermore, the intensity of the preparative regimen does appear to correlate with increased incidence of aGvHD. Higher doses of radiation also gives rise to more GvHD. [5] Upon multivariate analysis, previous acute GvHD (≥grade II) had a significant impact on chronic GvHD incidence. [6]
Diagnosis	Acute GvHD refers to the appearance of an allogeneic inflammatory response in exclusively three organs: the skin (inflammatory maculopapular erythematous skin

	rash), the liver (hyperbilirubinemia due to cholestatic jaundice), and the gastro-intestinal (GI) tract (upper and/or lower GI tract manifestations: anorexia with weight loss, nausea, vomiting, diarrhea, severe pain, GI bleeding and/or ileus). Chronic GvHD was originally defined in the early 1980s in a cohort of 20 Seattle patients, as any GvHD present beyond day 100. Chronic GvHD severity was categorized as "limited" (localized skin lesions with or without limited hepatic involvement) or "extensive" (generalized skin involvement, major hepatic complications, or involvement of any other organ). [6]
Treatment	Despite all of the recent advances in the understanding and treatment of GvHD, steroids remain the best and first-line therapy. The mechanism of action of steroids for aGvHD is unclear but most likely relates to the suppression of cytokines such as prevention of synthesis of interleukin-1 by antigen-presenting cells and lymphocyte activities. [5]
Prognosis	Multivariate analysis revealed that male sex and Hematopoietic Cell Transplantation-Specific Comorbidity Index ≥3 were associated with poor overall survival. [1] Fifteen patients (65%) experienced at least one episode of chronic GvHD exacerbation during the period of follow-up, with a median of four exacerbations in the subgroup of patients who experienced such events. Lung GvHD resulted in the highest number of exacerbations per diagnosed patient, followed by oral GvHD. [7]
Genetic information	Genetic polymorphisms of minor histocompatibility antigen genes [8] and SOCS genes [9] were associated with GvHD in the Korean population.
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Intracerebral Hemorrhage

Incidence	In 2016, the crude incidence and age-standardized incidence were calculated as 38.5 per 100000 person-years and 31.3 per 100000 person-years, respectively. [1]
Prevalence	NR
Mortality	The age-adjusted mortality rates for intracerebral hemorrhage (ICH) decreased substantially in both sexes between 2012 and 2020. Concerning ICH, mortality rates decreased from 6.91 deaths per 100,000 inhabitants to 4.75 deaths per 100,000 inhabitants; the average annual percentage change was −0.05 (−0.51 to 0.42). [2]
Gender	The crude incidence in male patients was significantly higher compared with that in female patients (p=0.018). [1]
Age	The ratio of patients older than 60 years among the patients diagnosed with ICH was 64.5% in 2016. [1]
Regional distribution	As of 2023, the number of patients with intracerebral hemorrhage (I61) by medical institution region was as follows: Seoul: 13,817 cases (22.3%), Busan: 5,029 cases (8.1%), Incheon: 3,211 cases (5.2%), Daegu: 4,562 cases (7.4%), Gwangju: 2,431 cases (3.9%), Daejeon: 2,291 cases (3.7%), Ulsan: 1,034 cases (1.7%), Gyeonggi: 12,770 cases (20.6%), Gangwon: 1,901 cases (3.1%), Chungbuk: 1,648 cases (2.7%), Chungnam: 1,874 cases (3.0%), Jeonbuk: 2,494 cases (4.0%), Jeonnam: 1,668 cases (2.7%), Gyeongbuk: 2,828 cases (4.6%), Gyeongnam: 3,595 cases (5.8%), Jeju: 747 cases (1.2%), Sejong: 167 cases (0.3%). [3]
Clinical phenotypes/ Classification	A multinational study was conducted using patient cohorts from Massachusetts General Hospital in Boston, USA, and Inselspital in Bern, Switzerland. In the derivation cohort, a well‐defined ICH subtype could be identified in 74 (65.5%) patients, including 24 (21.2%) with arteriolosclerosis, 23 (20.4%) with cerebral amyloid angiopathy, 18 (15.9%) with mixed small vessel disease, and 9 (8.0%) with a secondary cause. One or more possible causes were identified in 42 (37.2%) patients. [4]
Clinical manifestation	Although some individuals develop ICH during exertion or sudden emotional stress, most ICHs occur during routine activity. The neurologic symptoms usually aggravate over minutes or a few hours. The most common site of ICH is the putamen, and clinical presentations vary by the size and location of ICH. Common ICH symptoms are headache, nausea, and vomiting. Headache is more common in patients with large hematomas, and is attributed to traction on meningeal pain fibers, increased. Intracranial pressure, or blood in the cerebrospinal fluid. Small, deep hematomas are

	rarely associated with headache. Vomiting is reported in about 50% of patients with hemispheric ICH, and more common in patients with cerebellar hemorrhages. [5]
Risk factor	Modifiable risk factors are as follow: Hypertension, current smoking, excessive alcohol consumption, decreased Low-density lipoprotein, cholesterol, low triglycerides, anticoagulation, use the antiplatelet agent, sympathomimetic drugs (Cocaine, heroin, amphetamine, phenylpropanolamine and ephedrine). Non-modifiable risk factors are as follow: Old age, male sex, Asian ethnicity, cerebral amyloid angiopathy, cerebral microbleeds, chronic kidney disease. Other factors suggested to be related the risk are as follow: Multi-parity, poor working conditions (blue-collar occupation, longer working time), long sleep duration. [5]
Diagnosis	Among the 315 patients with intracerebral hemorrhage, the causes were hypertension in 297 patients (94.3%), moyamoya disease in 3 patients (0.9%), and arteriovenous malformation in 15 patients (4.8%). The locations of hemorrhage were the basal ganglia in 120 patients (38.1%), thalamus in 71 patients (22.5%), subcortex in 81 patients (25.7%), cerebellum in 23 patients (7.3%), and brainstem in 20 patients (6.4%). [6]
Treatment	According to this study, the proportion of patients treated for ICH ranged from 14.5% to 17.5% and stereotactic aspiration was slightly superior to conventional craniotomy, in Korea. As a guideline for the treatment of ICH, the usefulness of craniotomy for supratentorial ICH is not well established because randomized clinical trials (RCTs) demonstrated no overall benefit from early surgery. However, a recent meta-analysis reported that minimally invasive surgery is superior to conventional craniotomy and other RCTs showed that minimally invasive surgery with recombinant tissue type plasminogen activator (tPA) is effective for reduction of perihematoma edema with a trend toward improved outcomes. [1]
Prognosis	For patients with hemorrhagic stroke, the modified Rankin Scale (mRS) score at discharge ranged from 0 to 6, with 30.6% showing a favorable outcome (0–2 points) and 69.4% showing an unfavorable outcome (3–6 points). [6] Patients with ICH were estimated to have 7.8 years of EYLL(expected years of life lost). [7]
Genetic information	Although not based on Korean data, the following findings were reported in a Chinese study. So far, investigations have revealed variations in APOE, GPX1, CR1, ITGAV, PRKCH, and 12q21.1 are associated with lobar ICH, while ACE, COL4A2, 1q22, TIMP1, TIMP2, MMP2, MMP9, and TNF are associated with deep ICH. Moreover, variations in APOE, VWF, 17p12, HP, CFH, IL6ST, and COL4A1 are possible genetic contributors to ICH outcome. [8]

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Liver Transplantation

Incidence	The case numbers of deceased donor liver transplantation (DDLT) and living donor liver transplantation (LDLT) in 2020 were 395 and 1,221, respectively. [1] During the 21-year period from 2000 to 2020, the total number of all deceased organ donors was 6,064 and 5,252 cases of DDLT were performed. [1]
Prevalence	NR
Mortality	Post-LT mortality was 4.0% in LDLT recipients and 14.7% in DDLT recipients. [2]
Gender	Among patients, 72.2% were male. [2]
Age	A total of 2,563 adult recipients with LT (LDLT, n=1,956; DDLT, n=607) were included, with mean±standard deviation age of 53.9±8.9 years. [2]
Regional distribution	The five major LT centers performed 974 cases, which accounted for 60.3% of nation-wide LT volume in 2020, including 45.3% of DDLT and 65.1% of LDLT. [1]
Clinical phenotypes/ Classification	Recently, the 1-year survival rate of DDLT has reached 77.9%, and the 1-year survival rate of LDLT has reached 89.9%. The 1-year survival rate of all LT is reported to be good enough to reach 86.9% due to improved surgical technique and patient management, as well as the appropriate use of various immunosuppressants. [3]
Clinical manifestation	Among 2,562 liver transplantation recipients, 51.5% had a Model for End-Stage Liver Disease (MELD) score of less than 15, 38.9% had a score between 15 and 34, and 9.6% had a score of 35 or higher. According to the Child–Turcotte–Pugh (CTP) Classification, 29.0% were classified as class A (score ≤6), 33.6% as class B (score 7–9), and 37.5% as class C (score ≥10). Based on Korean Network Organ Sharing (KONOS) status, 2.2% were categorized as score 1, 6.4% as score 2, 5.9% as score 3, 16.2% as score 4, and 69.3% as score 5. [2]
Risk factor	DDLT and ABO incompatible transplant were prognostic factors for rejection, and hepatocellular carcinoma (HCC) beyond Milan criteria at pre-transplant was a strong predictor of HCC recurrence. [2]
Diagnosis	A common indication for LT is an acute or chronic liver disease in which liver function is deteriorated severely to a point where it does not respond to any other treatments and can only be treated with a LT. Liver cirrhosis caused by viral hepatitis (hepatitis B or C) or alcohol, autoimmune hepatitis, primary sclerosing cholangitis, biliary atresia, Wilson's disease, and HCC are chronic liver diseases requiring LT. Due to the development of surgical technique, postoperative care, and expansion of LDLT, the indications for LT are gradually expanding. [3]

	Hepatitis B and alcoholic liver disease were the two most common underlying liver diseases among LDLT (60.5% and 20.5%) and DDLT (41.0% and 36.4%) recipients. Nearly half (49.2%) of all recipients had liver cancer, and HCC was accountable for majority (97.4%) of the neoplasms. Among recipients with HCC, about two-thirds (64.2% in LDLT and 65.7% in DDLT) had pretransplant HCC within Milan criteria. [2]
Treatment	The individual immunosuppression (IS) agents were tacrolimus in 1,807 patients (86.3%), cyclosporine in 169 patients (8.1%), mycophenolate mofetil (MMF) in 1,310 patients (62.6%), and everolimus in 115 patients (5.5%). The most common IS regimens were tacrolimus-MMF combination and tacrolimus monotherapy, regardless of the posttransplant period. Patients with pretransplant malignancies were administered everolimus more frequently than those without pretransplant malignancies (P<0.001). [4]
Prognosis	In overall cohort, early mortality (<90 days) was 3.47% (US) vs. 4.36% (Korea), while 5-year mortality was 18.89% and 13.69%, respectively (p<0.001). LDLT recipients showed 5-year mortality of 15.41% in US and 11.34% in Korea (p=0.009), indicating superior long-term survival in Korea. Interestingly, early mortality was significantly higher in Korea (11.88%) in DDLT cohort and 5-year mortality of 23.35% compared to 3.55% and 19.07% in US (p<0.001). [5] The post-LT outcomes observed in each LDLT and DDLT recipients were graft loss (5.0% and 16.1%), rejection (7.0% and 12.0%), renal failure (2.7% and 13.8%), new onset of diabetes (12.5% and 15.4%), and hepatocellular carcinoma (HCC) recurrence (both 6.7%). [2]
Genetic information	The patients were categorized into two groups whether D → R one-way HLA MM or not and evaluated the outcomes of LT between the two groups. 18 patients were found to be D → R one-way HLA MM. The incidence of GVHD (0.3% vs. 22.2%, p < 0.001) and mortality rate (11.6% vs. 38.9%, p = 0.003) was much higher in D → R one-way HLA MM group. D → R one-way HLA MM at 3 loci was seemed to be strongly associated with the incidence of GVHD (OR 163.3, p < 0.001), and found to be the strongest risk factor for patient death (HR 12.75, p < 0.001). [6]
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Otitis Media

Incidence	NR
Prevalence	According to data from the Health Insurance Review and Assessment Service (HIRA), a total of 1,370,855 patients received medical treatment for otitis media in 2022. [1] The prevalence rate of Acute otitis media (per 1000 persons) decreased from 152.7 in 2012 to 137.4 in 2017. [2]
Mortality	NR
Gender	According to data from the Health Insurance Review and Assessment Service (HIRA), a total of 1,370,855 patients received medical treatment for otitis media in 2022. [1]
Age	In 2022, the number of patients treated for otitis media was as follows: 623,300 (45.5%) were aged 9 years or younger, 121,688 (8.9%) were in their teens, 82,770 (6.0%) were in their twenties, 105,657 (7.7%) were in their thirties, 106,588 (7.8%) were in their forties, 111,251 (8.1%) were in their fifties, 117,839 (8.6%) were in their sixties, 73,720 (5.4%) were in their seventies, and 37,155 (2.7%) were aged 80 years or older. [1]
Regional distribution	The districts with highest prevalence rate were Sejong (2012), Daejeon (2015) and Busan (2017), while the districts with lowest prevalence rate were Gangwon (2012), Gyeongbuk (2015) and Jeonnam (2017). [2]
Clinical phenotypes/ Classification	COM can be divided into acute otitis media (AOM) and otitis media with effusion (OME). Both are accompanied by middle ear effusion (MEE) resulting from the inflammation of the mucous membranes of the middle ear. [3] Among 683 outpatients who visited seven hospitals in Korea, 18% (n=122) and 82% (n=561) were diagnosed with AOM and OME, respectively. [4] Without appropriate treatment, OM may become chronic, resulting in various complications. COM can be classified based on the involvement of active inflammations associated with cholesteatoma. [5] According to a study of 1,102 outpatients with otorrhea who visited the otorhinolaryngology at six hospitals in Korea, 25% (n=279) and 75% (n=823) had COM with and without cholesteatoma. [6]
Clinical manifestation	Local symptoms include otorrhea or otalgia, while systemic symptoms include crying or irritability, sleep disturbance, decreased normal activity or mobility, loss of appetite, fever, and respiratory symptoms associated with acute otitis media. [7]
Risk factor	In the multivariate analyses, the following factors showed high odds ratios (ORs) for chronic otitis media: pulmonary tuberculosis (adjusted OR, 1.78; 95% confidence interval [CI], 1.06-3.01), chronic rhinosinusitis (adjusted OR, 1.87; 95% CI, 1.17-2.98), mild hearing impairment (adjusted OR, 1.95; 95% CI, 1.34-2.85), moderate hearing

	impairment (adjusted OR, 4.00; 95% CI, 2.21-7.22), tinnitus (adjusted OR, 1.82; 95% CI, 1.34-2.49), increased hearing thresholds in pure tone audiometry in the right ear (adjusted OR, 1.02; 95% CI, 1.01-1.03), and left ear (adjusted OR, 1.03; 95% CI, 1.02-1.04). [8]
Diagnosis	According to the 2014 Korean clinical practice guideline for acute otitis media in young children, the diagnosis is determined based on subjective symptoms and objective signs. Subjective symptoms refer to the presence of local symptoms of the middle ear or related systemic symptoms caused by the sudden onset of acute inflammation. Objective signs include: (1) tympanic membrane findings such as bulging, blister formation, redness, perforation with otorrhea, or middle ear effusion; and (2) observation of a type B or type C tympanogram on tympanometry, or confirmation of middle ear effusion through tympanocentesis. A definite diagnosis is made when subjective symptoms are present along with at least one objective sign, while a probable diagnosis is defined as having subjective symptoms without clear objective signs. [7] *Pneumatic otoscopy is the most cost-effective and recommended method in the United States clinical guideline. The Japanese clinical guideline recommends the use of an operating microscope and an otoendoscope. In Korea, a 2009 survey conducted by the Korean Otological Society found that approximately 50% of respondents preferred an otoendoscope, while only 12–18% were using pneumatic otoscopy, as recommended in the United States clinical guideline. [7]
Treatment	Depending on the patient's age, disease severity, and the possibility of follow-up, symptomatic treatment without antibiotics may be considered in some cases of mild acute otitis media. However, in children aged 2 years or younger, the failure rate of symptomatic treatment is high, and in those aged 6 months or younger, immediate antibiotic therapy is required due to concerns about serious infection. In addition, myringotomy may be performed, if cooperation is possible, to relieve severe otalgia. In such cases, performing bacterial culture and antibiotic susceptibility testing on the middle ear effusion can help guide the choice of antibiotics if initial treatment fails. [7]
Prognosis	Between 2012 and 2015, the recurrence rate of two or more incidents in 0–12 years group declined from 34.0% to 28.2%, and the recurrence rate in the 0–2 years group decreased by 9.4%. The ratio of children suffering from symptoms twice in a year decreased from 22.7% to 14.7%, while that of children with more than three cases increased from 11.3% to 13.5%. The recurrence rate decreased by 11.65% and 4.2% in the 0–2 years and 3–6 years groups, respectively. [2]
Genetic information	Aquaporins (AQPs) 1, 2, 3, 4, 5, 6, 8, and 10 mRNAs were expressed in inflammatory tissues obtained from all 81 patients with COM with or without otorrhea. AQP 5 mRNA was most expressed in, followed in descending order by AQP 3, 1, 10, 6, 8, 2, and 4. [9]

	Expression of the C/EBP-homologous protein (CHOP) was higher in the otitis-prone group than in the non-otitis-prone group ($p < 0.05$). The most common type of fluid was mucoid, and inositol-requiring enzyme 1α expression was higher in serous fluid than in mucoid, mucopurulent, or purulent fluid ($p < 0.05$). [10]
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Primary Immunodeficiency

Incidence	NR
Prevalence	Based on 2017 Health Insurance Review and Assessment Service (HIRA) datas, a total of 398 primary immunodeficiency disease patients were identified in Korea. [1]
Mortality	Between January 2001 and December 2005, 15 (9.8%) of 152 patients died due to pneumonia (n=8), sepsis (n=4), bleeding (n=2), and lymphoma (n=1). [2]
Gender	Of 152 patients, 119 were boys, resulting in a 3.6:1 sex ratio of boys to girls. [2]
Age	Age distribution of patients with primary immunodeficiency disease (including agammaglobulinemia, other antibody deficiencies, and common variable immunodeficiency) was as follows. 0–9 years: 122 patients, 10–19 years: 92, 20–29 years: 87, 30–39 years: 70, 40–49 years: 62, 50–59 years: 65, 60–69 years: 58, 70–79 years: 37, ≥80 years: 9. [1]
Regional distribution	Seoul (n=41/152), Gyeonggi (n=33/152), Jeolla (n=22/152), Gyeongsang (n=21/152), Jeju (n=15/152), Chungcheong (n=14/152), and Gangwon (n=6/152). [2]
Clinical phenotypes/ Classification	A total of 398 primary immunodeficiency disease patients were identified from 101 reports. Immunodeficiencies affecting cellular and humoral immunity were reported in 11 patients, combined immunodeficiency with associated or syndromic features in 40, predominantly antibody deficiencies in 144, diseases of immune dysregulation in 58, congenital defects of phagocytes in 104, defects in the intrinsic and innate immunity in 1, auto-inflammatory disorders in 4, complement deficiencies in 36, and phenocopies of primary immunodeficiency diseases in none. [1]
Clinical manifestation	Overall, the most common initial manifestation in primary immunodeficiency patients was pneumonia. - Among those with antibody deficiencies: pneumonia and otitis media were the initial manifestations in 53.1% and 11.1% of patients, respectively. - Among those with T cell deficiencies, the initial manifestations included tetany (71.4%) and congenital anomalies of the heart and great vessels (three patients). - Among those with phagocytic disorders, the initial manifestations included lymphadenitis (27.3%), perianal abscess (22.7%), and pneumonia (15.9%). [2]
Risk factor	In this study, 23% of patients had one more family member with proven suspected immunodeficiency. Most often a pair of siblings/cousins was affected. [2]

Diagnosis	Primary immunodeficiency diseases have been diagnosed based on clinical manifestations and hematological/biochemical laboratory tests. The clinical phenotypes of patients are heterogeneous; therefore, the accurate identification of an underlying primary immunodeficiency may not always be possible. [3] Accordingly, initial screening for primary immunodeficiency includes initial tests such as chest radiograph for thymus size, white blood cell count with differential, total lymphocyte count, immunoglobulin levels (total and quantitative), and delayed sensitivity skin test to antigens. Definitive tests include B-cell levels, T-cell levels (total and quantitative), morphology response to antigen, and level of specific antibody after immunization. [2]
Treatment	Based on 2017 HIRA data, Treatment was delivered for 8,166 and 6,149 days for outpatients and inpatients, respectively: 1,249 (15.3%) and 1,357 (22.1%) for patients with functional defect of neutrophils, 3,175 (38.8%) and 672 (37.3%) in patients with predominantly antibody deficiency, 225 (2.7%) and 21 (4.5%) in patients with combined immunodeficiency, 2,188 (26.8%) and 118 (21.1%) in patients with immunodeficiency associated with other major defects, 496 (6.0%) and 68 (7.5%) in patients with common variable immunodeficiency, and 855 (10.4%) and 80 (7.5%) in patients with Others, respectively. [1]
Prognosis	The frequent complications among 136 patients with primary immunodeficiency included short stature (9.9%), bronchiectasis (5.3%), respiratory failure (3.9%), and decreased renal function (3.3%) [5]
Genetic information	In patients with Severe combined immunodeficiencies, IL2RG gene mutations indicating γc deficiency were identified, while in XLA cases, BTK mutations were confirmed, including TTTG deletion in intron 15. Some patients showed markedly or moderately reduced BTK protein expression. [3] Among 93 patients with acute lymphoblastic leukemia, pathogenic or likely pathogenic heterozygous variants associated with primary immunodeficiency disorders were identified in 9 patients (9.7%). [4]
References	[1] Systematic review of literature and analysis of big data from the National Health Insurance System on primary immunodeficiencies in Korea. Clin Exp Pediatr. 2021 Apr;64(4):141-148. [2] Prevalence of primary immunodeficiency in Korea. Journal of Korean Medical Science (2012) 27: 788-793 [3] Flow Cytometry for the Diagnosis of Primary Immunodeficiency Diseases: A Single Center Experience. Allergy Asthma Immunol Res. 2020 Mar;12(2):292-305. [4] Recurrent somatic mutations and low germline predisposition mutations in Korean ALL patients. Sci Rep. 2021 Apr 26;11(1):8893.

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Sleep Apnea Syndromes

Incidence	NR
Prevalence	The prevalence of Obstructive Sleep Apnea (OSA) in Korea was up to 15.8% in 2020. [1]
Mortality	The adjusted hazard ratio [HR] for all-cause mortality in the severe OSA group (apnea-hypopnea index [AHI] ≥ 30) vs. reference group (5 <AHI) was 2.47 (95% CI: 1.09-5.57), while the adjusted HR for cardiovascular mortality was 4.66 (95% CI: 1.03-21.08). After adjusting for treatment status, the HRs for all-cause and cardiovascular mortality in the severe OSA vs. reference groups were 2.14 (P=0.079) and 4.19 (P=0.076), respectively. [2]
Gender	Male patients accounted for 83.06%. [1]
Age	The mean age in the OSA group and the control group were 58.36±14.12 years and 57.25±20.31 years, respectively. [1]
Regional distribution	NR
Clinical phenotypes/ Classification	An apnea–hypopnea index (AHI) of 5 to 15 events per hour is classified as mild OSA, 15 to 30 events per hour as moderate OSA, and more than 30 events per hour as severe OSA. [3]
Clinical manifestation	In clinical practice, the most common symptom suggesting OSA is snoring. In addition, bed partners may observe repeated episodes of apnea, during which breathing stops and then resumes. Approximately one-quarter of patients with OSA report excessive daytime sleepiness. Other symptoms and signs may include sleep arousals due to choking or gasping, nocturia, morning headache, impaired concentration, irritability, depressive mood, insomnia, and erectile dysfunction. [3]
Risk factor	Previous studies analyzing the prevalence of risk factors for OSA have identified age, male gender and obesity, waist circumference, and high triglyceride levels. Other lifestyle factors such as smoking, alcohol consumption, diet, and physical activity also relate to severe OSA. [4]
Diagnosis	The standard diagnostic test for obstructive sleep apnea is polysomnography. Among these, level I polysomnography conducted under the supervision of a technician is considered the most reliable diagnostic method. In Korea, since July 2018, insurance coverage has been applied only to level I polysomnography when patients present with symptoms suggestive of OSA such as snoring, and either have comorbid cardiovascular or cerebrovascular disease or meet specific physical examination criteria such as the modified Mallampati score or Friedman stage. According to the third edition of the

	International Classification of Sleep Disorders (ICSD-3), OSA can be diagnosed under the following conditions: At least five respiratory events per hour on sleep testing, accompanied by clinical symptoms or comorbid conditions such as cardiovascular disease. At least fifteen respiratory events per hour on sleep testing, regardless of accompanying symptoms. [3]
Treatment	To date, the primary treatment for OSA has been continuous positive airway pressure (CPAP) therapy. Diagnosis and severity of OSA are based on the apnea–hypopnea index (AHI) obtained from polysomnography, and CPAP has been recommended as the first-line treatment regardless of severity. Since July 2018, in Korea, CPAP or auto-adjusting positive airway pressure (APAP) therapy has been reimbursed for patients diagnosed with OSA through polysomnography, thereby lowering the barrier to treatment. [3] Oral appliances may be considered when CPAP therapy fails, such as in patients who cannot tolerate CPAP or prefer an alternative treatment. In clinical practice, patients are usually referred to dental specialists for oral appliance therapy. Overweight status, defined as a body mass index (BMI) greater than 25 kg/m^2, accounts for approximately 58% of moderate-to-severe OSA cases. Therefore, weight reduction is an important therapeutic goal. A decrease in BMI of about 17% has been reported to reduce upper airway collapsibility. [3]
Prognosis	The proportion of patients diagnosed with hypertension was significantly higher in the OSA group than in the non-OSA group (48.1% vs. 10.5%, $P < 0.001$). The prevalence of uncontrolled hypertension was significantly higher in the OSA group, both among those with diagnosed hypertension (45.5% vs. 32.6%, $P = 0.003$) and those taking antihypertensive medication (39.8% vs. 30.1%, $P = 0.024$). [5]
Genetic information	Among 1,763 participants, we found that the presence of the NRG1 polymorphism is inversely associated with OSA (P value < 0.01) even after taking into account potential risk factors; the multivariate odds ratio (95% confidence interval) for the mutant alleles was 0.57 (0.39-0.82) compared with the wild-type. [6]
References	[1] Obstructive Sleep Apnea and Medical Comorbidities in the Asian Population: Evidence From a Nationwide Healthcare System Data in South Korea, Psychiatry Investig. 2024;21(9):987-993. [2] Mortality of Patients with Obstructive Sleep Apnea in Korea. J Clin Sleep Med. (2013), 9(10): 997-1002 [3] Updates of Diagnosis and Treatment of Sleep-Related Breathing Disorders-Focusing on Obstructive Sleep Apnea. J Korean Neuropsychiatr Assoc. 2020 Feb;59(1):20-24. [4] Association between health-related behaviors and obstructive sleep apnea among Korean adults. Sci Rep 14, 21244 (2024).

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Subarachnoid Hemorrhage

Incidence	The number of patients remained stable throughout the 21-year period, with 6,203 patients in 2002 and 6,478 in 2022. However, the age-standardized incidence rate decreased from 22.0 per 100,000 in 2002 to 12.5 per 100,000 in 2022. [1]
Prevalence	NR
Mortality	Fatality rates varied by sex and age group, with females exhibiting a higher 90-day fatality rate (24.5%) than males did (23.2%) and elderly patients (≥ 80 years) showing higher fatality rates (50.3%) than younger patients (< 40 years, 15.0%) in 2022. [1]
Gender	Among the cohort, 87,707 patients (61.8%) were female. [1]
Age	Among the cohort, 100,537 patients (70.9%) were aged 50 years or older. [1] The mean age of the patients was 59.3 years (SD, 14.6). [2]
Regional distribution	The highest patient populations were in Gyeonggi (29,833, 21.0%) and Seoul (26,484, 18.7%). While admissions to tertiary hospitals decreased from 3,796 in 2002 to 2,793 in 2022 (average annual percent change of −1.5%, 95% confidence interval [CI], −1.9, −1.2), admissions to secondary hospitals increased from 2,199 in 2002 to 3,924 in 2022 (AAPC of 2.7%, 95% CI, 2.1, 3.1). Since 2016, admissions to secondary hospitals have exceeded those to tertiary hospitals in noncapital areas, whereas the capital area has consistently recorded higher numbers in secondary hospitals. [1]
Clinical phenotypes/ Classification	In the Mann-Kendal estimates for the analysis of the trend, there was no statistically significant grade throughout the HH and modified Fisher grades. Similarly, there was no improvement throughout all grades in the modified Fisher grade over time. [2]
Clinical manifestation	Consistent with the rapid spread of blood, the symptoms of subarachnoid hemorrhage (SAH) typically begin abruptly, occurring at night in 30 percent of cases. The premier symptom is a sudden, severe headache (97 percent of cases) classically described as the "worst headache of my life." The headache is lateralized in 30 percent of patients, predominantly to the side of the aneurysm. The onset of the headache may or may not be associated with a brief loss of consciousness, seizure, nausea, vomiting, or meningismus. [3]
Risk factor	Patient characteristics such as age, sex, hypertension, and smoking were also risk factors for aneurysm rupture. Among these risk factors, aneurysm size, location, age, and history of hypertension have been demonstrated as risk factors for SAH outcomes. [2]

Diagnosis	The mean aneurysm size was 6.9 mm (SD, 4.6 mm). The most frequent aneurysm location was the anterior communicating artery (ACOM, 28.7%). The next most frequent locations were the middle cerebral artery bifurcation (MCAB, 22.1%) and the posterior communicating artery (PCOM, 20.8%). [2]
Treatment	Emergency room (ER) visits increased from 85.2% in 2002 to 91.4% in 2022, whereas the percentage of patients treated in the intensive care unit (ICU) declined after 2007, potentially due to policy changes and revisions in hospital construction guidelines introduced under the updated Medical Service Act of January 26, 2007. [1] The utilization of coiling, burr-hole trephination and extraventricular drainage (BHT/EVD), and vasospasm therapy increased over time, whereas the use of decompressive craniectomy (DC) remained stable. Among patients with spontaneous subarachnoid hemorrhage treated within 48 hours of admission between 2002 and 2022, coiling was performed in 3,674 cases (62.5%), clipping in 866 cases (14.7%), BHT/EVD in 1,361 cases (23.1%), and DC in 375 cases (6.4%). [1]
Prognosis	A total of 338 patients with aneurysmal SAH (mean [SD] age, 56.3 [13.0] years; 207 female [61.2%]) were included. Among survivors of aneurysmal SAH at 7 days, the 5-year mortality rate was 8.3% (28 participants). The distribution of modified Rankin scale significantly improved until 4 years and then plateaued, with 180 (53.3%) and 77 (22.8%) patients reporting an mRS score of 0 and 1, respectively. Functional Independence Measure showed a significant improvement up to 4 years (mean [SD] score, 118.9 [18.7]) and then plateaued. [4]
Genetic information	Patients with SAH had significantly higher levels of methylation intensity of distal intergenic region upstream of ITPR3 than those without delayed cerebral ischemia (median, 0.941 [interquartile range (IQR): 0.857–0.984]). [5]
References	[1] Trends in Incidences, Treatments and Outcomes of Spontaneous Subarachnoid Hemorrhage in Korea Between 2002 and 2022. J Korean Med Sci. 2025 Jun;40(29):e171. [2] Initial severity of aneurysmal subarachnoid hemorrhage (SAH): Trend over time. J Cerebrovasc Endovasc Neurosurg. 2022 Dec;24(4):349-355. [3] The Clinical Aspects of Subarachnoid Hemorrhage. Neurointervention. 2009;4(2):67-73. [4] Five-Year Functional Outcomes Among Patients Surviving Aneurysmal Subarachnoid Hemorrhage. JAMA Netw Open. 2025 Mar 3;8(3):e251678. [5] Correlation Between Altered DNA Methylation of Intergenic Regions of ITPR3 and Development of Delayed Cerebral Ischemia in Patients with Subarachnoid Hemorrhage. World Neurosurg. (2019) S1878- 8750(19)31665-1

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