



Special Article

Cancer Statistics in Korea: Incidence, Mortality, Survival, and Prevalence in 2020

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Purpose The current study provides national cancer statistics and their secular trends in Korea, including incidence, mortality, survival, and prevalence in 2020.

Materials and Methods Incidence, survival, and prevalence rates of cancer were calculated using the Korea National Cancer Incidence Database, from 1999 to 2020, with survival follow-up until December 31, 2021. Deaths from cancer were assessed using causes-of-death data obtained from Statistics Korea.

Results The number of new cancer diagnoses in 2020 decreased by 9,218 cases (3.6%) compared to 2019. In 2020, newly diagnosed cancer cases and deaths from cancer were reported as 247,952 (age-standardized rate [ASR], 262.2 per 100,000) and 82,204 (ASR, 69.9 per 100,000), respectively. The overall cancer incidence rates increased by 3.3% annually from 1999 to 2012, and decreased by 5.0% annually from 2012 to 2015, thereafter, followed by nonsignificant changes. Cancer mortality rates have been decreasing since 2002, with more rapid decline in recent years. The 5-year relative survival between 2016 and 2020 was 71.5%, which contributed to prevalent cases reaching over 2.2 million in 2020.

Conclusion In 2020, the number of newly diagnosed cancer patients decreased due to the coronavirus disease 2019 pandemic, but the overall trend is on the rise. Cancer survival rates have improved over the past decades. As the number of cancer survivors increases, a comprehensive cancer control strategy should be implemented in line with the changing aspects of cancer statistics. The long-term impact of the coronavirus disease 2019 pandemic on cancer statistics needs to be investigated in the future.

Key words Neoplasms, Incidence, Mortality, Survival, Prevalence, Korea

Introduction

Cancer is one of the leading causes of death worldwide, with an estimated 19.3 million new cancer cases and 10 million deaths worldwide in 2020 [1]. In Korea, cancer has been the leading cause of death since 1983 [2]. In response to this public health threat, the National Plan for Cancer Control was implemented in 1996, and the 4th stage is in effect from 2021. As a fundamental part of the Plan, the Korea Central Cancer Registry (KCCR) publishes cancer registration statistics every year. In 2020, there was a negative impact on cancer diagnosis and treatment as medical use declined due to the coronavirus disease 2019 (COVID-19) pandemic. Reduced and delayed access to health care, including decreased cancer screening rates, was a phenomenon that has appeared not only in Korea but globally [3-5]. While short-term decreases in cancer incidence statistics are expected, it will take years to quantify the associations and consequences of these phenomenon, which is beyond the scope of this

article [3]. In this study, we report the most recent nationwide statistics on cancer incidence, survival, prevalence, and mortality, and their temporal trends.

Materials and Methods

1. Data sources

Annual cancer statistics in Korea are calculated using a national and population-based database of cancer occurrence, the Korea National Cancer Incidence Database (KNCI DB). Every year, the KCCR collects information on patients diagnosed with cancer at hospitals across the country during the past year. The data from previous year is backed up with information compiled by central and 11 regional cancer registries, including information on cancer patients missed in hospital-based registrations. Hence, it takes two years to complete and calculate the year's KNCI DB and cancer statistics. The KCCR has reported nationwide statistics since

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1999; other detailed information on the KCCR and KNCI DB is provided in our previous report [6]. Completeness is an important indicator of data quality, and the 2020 KNCI DB was estimated to be 98.3% complete using the method proposed by Ajiki et al. [7].

Annual mid-year population data and recently updated mortality data including causes of death from 1983 were obtained from Statistics Korea [2]. To confirm the validity of individual vital statuses used in survival and prevalence calculation, the KNCI DB was linked to both mortality and population resident registration data, which were obtained from the Ministry of the Interior and Safety.

2. Cancer classification

All cancer cases had been registered in accordance with the *International Classification of Diseases for Oncology, 3rd edition* (ICD-O-3) [8]. The range of cancers to be registered

and used for the national statistics calculation was limited to records with a behavior code of “/2 (carcinoma *in situ*)” or “/3 (malignant),” from the morphology (i.e., histology) codes of ICD-O-3, by which a patient was initially enrolled in the KNCI DB. Similar to previous reports, malignant cancer cases and their statistics were mainly assessed in this article. In addition, the supplementary incidence statistics for carcinoma *in situ* cases were also calculated separately, using 2020 KNCI DB.

For the convenience of classification and reporting, the ICD-O-3 codes were converted to the classification of the *International Classification of Diseases, 10th edition* (ICD-10) [9]. Exceptionally, some hematopoietic diseases (myeloproliferative disorders/myelodysplastic syndromes) are not classified as malignant cancer in ICD-10 classification, therefore their ICD-O-3 codes were used without any conversion. For mortality data, causes of death were coded according to the

Table 1. Cancer incidence, deaths and prevalence by sex in Korea, 2020

Site/Type	New cases			Deaths			Prevalent cases ^{a)}		
	Both sexes	Men	Women	Both sexes	Men	Women	Both sexes	Men	Women
All sites	247,952	130,618	117,334	82,204	50,817	31,387	2,276,792	998,948	1,277,844
Lip, oral cavity, and pharynx	4,064	2,892	1,172	1,283	972	311	31,447	20,948	10,499
Esophagus	2,748	2,451	297	1,564	1,404	160	12,684	11,274	1,410
Stomach	26,662	17,869	8,793	7,510	4,807	2,703	330,217	217,881	112,336
Colon and rectum	27,877	16,485	11,392	8,869	5,029	3,840	292,586	173,285	119,301
Liver	15,152	11,150	4,002	10,565	7,812	2,753	77,958	58,239	19,719
Gallbladder ^{b)}	7,452	4,012	3,440	5,192	2,784	2,408	26,685	13,770	12,915
Pancreas	8,414	4,324	4,090	6,775	3,452	3,323	16,415	8,293	8,122
Larynx	1,203	1,141	62	321	310	11	12,251	11,524	727
Lung	28,949	19,657	9,292	18,673	13,824	4,849	111,208	66,240	44,968
Breast	24,923	117	24,806	2,745	20	2,725	279,965	1,012	278,953
Cervix uteri	2,998	-	2,998	810	-	810	60,467	-	60,467
Corpus uteri	3,492	-	3,492	378	-	378	33,785	-	33,785
Ovary	2,947	-	2,947	1,369	-	1,369	25,683	-	25,683
Prostate	16,815	16,815	-	2,194	2,194	-	120,423	120,423	-
Testis	361	361	-	14	14	-	4,385	4,385	-
Kidney	5,946	4,135	1,811	1,076	764	312	54,652	36,986	17,666
Bladder	4,753	3,826	927	1,593	1,235	358	41,835	34,085	7,750
Brain and CNS	1,970	1,056	914	1,437	784	653	13,411	6,888	6,523
Thyroid	29,180	7,458	21,722	365	128	237	489,688	91,546	398,142
Hodgkin lymphoma	323	214	109	48	30	18	3,657	2,255	1,402
Non-Hodgkin lymphoma	5,636	3,248	2,388	1,926	1,106	820	40,853	23,163	17,690
Multiple myeloma	1,747	961	786	976	514	462	8,307	4,381	3,926
Leukemia	3,605	2,020	1,585	1,825	1,048	777	27,157	15,045	12,112
Other and ill-defined	20,735	10,426	10,309	4,696	2,586	2,110	161,073	77,325	83,748

CNS, central nervous system. ^{a)}Limited-duration prevalent cases on January 1, 2020. These are patients who were diagnosed between January 1, 1999 and December 31, 2020 and who were alive on January 1, 2021. Multiple primary cancer cases were counted multiple times,

^{b)}Includes the gallbladder and other/unspecified parts of the biliary tract.

Table 2. Crude and age-standardized cancer incidence rates by sex in Korea, 2020

Site/Type	Crude incidence rate per 100,000			Age-standardized incidence rate per 100,000 ^{a)}		
	Both sexes	Men	Women	Both sexes	Men	Women
All sites	482.9	510.1	455.8	262.2	279.1	257.3
Lip, oral cavity, and pharynx	7.9	11.3	4.6	4.4	6.4	2.6
Esophagus	5.4	9.6	1.2	2.6	4.9	0.5
Stomach	51.9	69.8	34.2	25.7	36.9	15.9
Colon and rectum	54.3	64.4	44.3	27.1	34.8	20.2
Liver	29.5	43.5	15.5	14.5	23.2	6.7
Gallbladder ^{b)}	14.5	15.7	13.4	6.2	7.7	4.9
Pancreas	16.4	16.9	15.9	7.6	8.7	6.7
Larynx	2.3	4.5	0.2	1.1	2.3	0.1
Lung	56.4	76.8	36.1	25.8	38.5	15.9
Breast	48.5	0.5	96.4	30.1	0.2	59.9
Cervix uteri	5.8	-	11.6	3.7	-	7.3
Corpus uteri	6.8	-	13.6	4.2	-	8.4
Ovary	5.7	-	11.4	3.5	-	7.0
Prostate	32.7	65.7	-	14.7	32.5	-
Testis	0.7	1.4	-	0.7	1.4	-
Kidney	11.6	16.1	7.0	6.6	9.4	3.9
Bladder	9.3	14.9	3.6	4.1	7.5	1.4
Brain and CNS	3.8	4.1	3.6	2.8	3.2	2.4
Thyroid	56.8	29.1	84.4	41.3	20.9	62.4
Hodgkin lymphoma	0.6	0.8	0.4	0.5	0.7	0.4
Non-Hodgkin lymphoma	11.0	12.7	9.3	6.6	8.1	5.2
Multiple myeloma	3.4	3.8	3.1	1.6	1.9	1.4
Leukemia	7.0	7.9	6.2	5.4	6.1	4.8
Other and ill-defined	40.4	40.7	40.0	21.4	23.7	19.4

CNS, central nervous system. ^{a)}Age-adjusted using the Segi's world standard population, ^{b)}Includes the gallbladder and other/ unspecified parts of the biliary tract.

ICD-10.

We adopted cancer classifications with 24 and 61 types; the former was a modified classification based on the GLOBOCAN cancer dictionary [10], and the latter was the taxonomy used in "Cancer Incidence in Five Continents" [11], and both of them were provided by the International Association of Cancer Registries. In this article, cancer classification with 24 types of cancer was used for description. The summary staging system developed under the Surveillance, Epidemiology, and End Results (SEER) program (i.e., SEER summary staging) [12] was used to categorize the extent of tumor invasion or metastasis.

3. Statistical analyses

Incidence, mortality, and prevalence rates were expressed as crude rates (CRs) or age-standardized rates (ASRs) per 100,000 people. The CR was defined as the total number of newly diagnosed (for incidence) or deceased (for mortality)

cases in a year divided by the mid-year population. The ASR was defined as the weighted average of the age-specific rates in which the weights represent the proportions of people in the corresponding age groups in a standard population [13]. ASRs were standardized using Segi's world standard population [14]. The cumulative risk of developing cancer from birth to life expectancy during 2020 in Korea were also assessed, assuming no other cause of death (i.e., by simply calculating the sum of the age-specific cancer rates from birth to life expectancy), as follows [13]:

$$\text{Cumulative risk of developing cancer from birth to life expectancy} = 100 \times \left(1 - e^{-\frac{\text{cumulative rate}}{100}} \right)$$

Trends in ASRs were estimated using Joinpoint regression, with a maximum number of two joinpoints. The results were summarized as annual percentage changes with the best model fit, based on a linear model for the natural log-trans-

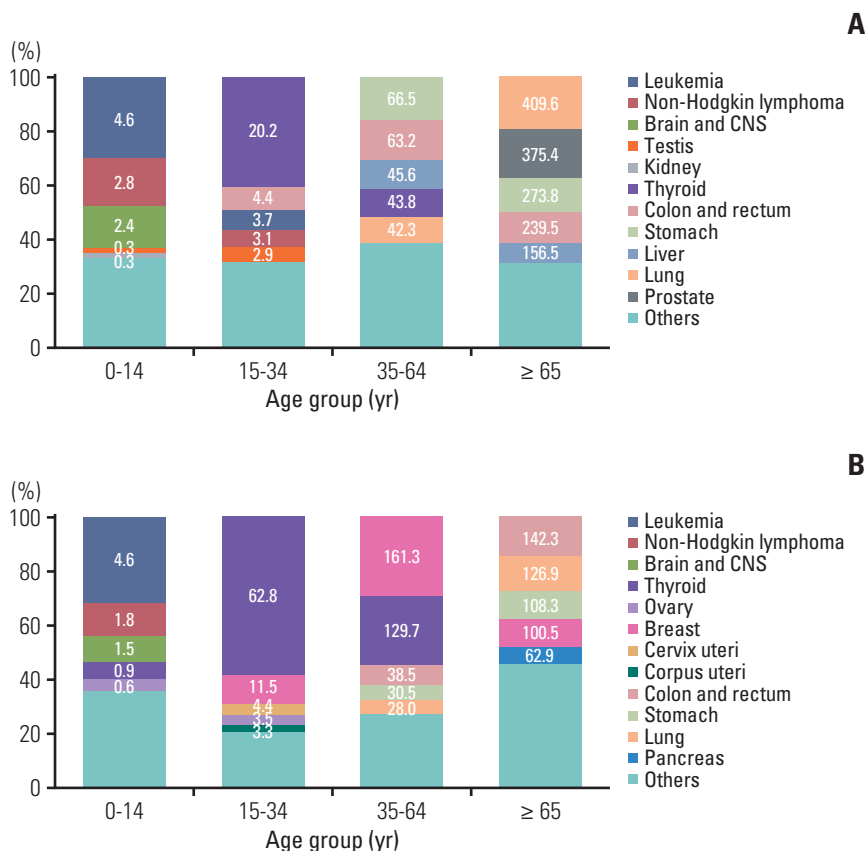


Fig. 1. The five common sites of cancer incidence by age group and sex in Korea, 2020. (A) Men. (B) Women. Numbers in the graph are age-specific incidence rates per 100,000. CNS, central nervous system.

formed ASRs.

The survival rate of cancer patients, diagnosed between 1993 and 2020, was calculated based on the results of follow-up until December 31, 2021. The 5-year relative survival rate was defined as the ratio of observed survival of cancer patients to expected survival in the general population, adjusting the effects of other causes of death using the standard population life table provided by Statistics Korea [2]. Relative survival rates were estimated using the Ederer II method [15] with some minor corrections, based on an algorithm devised by Paul Dickman [16]. Trends in 5-year relative survival rates were evaluated as percent differences in survival rates between 1993-1995 and 2016-2020.

Prevalent cases were defined as the number of cancer patients alive on January 1, 2021 among all the patients diagnosed with cancer between 1999 and 2020. $p < 0.05$ was considered statistically significant. SEER*Stat, Joinpoint 4.7.0.0 (National Cancer Institute, Bethesda, MD), and SAS ver. 9.4 (SAS Institute Inc., Cary, NC) were used for statistical analyses.

Results

1. Incidence

The number of new cancer diagnoses in 2020 decreased by 9,218 cases (3.6%) compared to 2019. In 2020, a total of 247,952 people were newly diagnosed with cancer in Korea, of which 52.7% (130,618 cases) were men and 47.3% (117,334 cases) were women (Table 1). The five most diagnosed cancers in Korea were thyroid, lung, colorectal, stomach, and breast cancers; in men, lung and stomach cancers were followed by prostate, colorectal, and liver cancers, whereas breast and thyroid cancers were followed by colorectal, lung, and stomach cancers in women. These top five cancers in each sex accounted for 62.8% and 64.8% of all cancer cases in men and women, respectively. Among the five most diagnosed cancers, the decrease in new cancer diagnosis in 2020 compared to 2019 was the largest for stomach cancer (3,058 cases, -10.3%), followed by thyroid cancer (1,827 cases, -5.9%), and colorectal cancer (1,549 cases, -5.3%). Thyroid cancer was the most frequent cancer from 2010 to 2014: its ranking fell after the debate on overdiagnosis in 2014, but recently rose

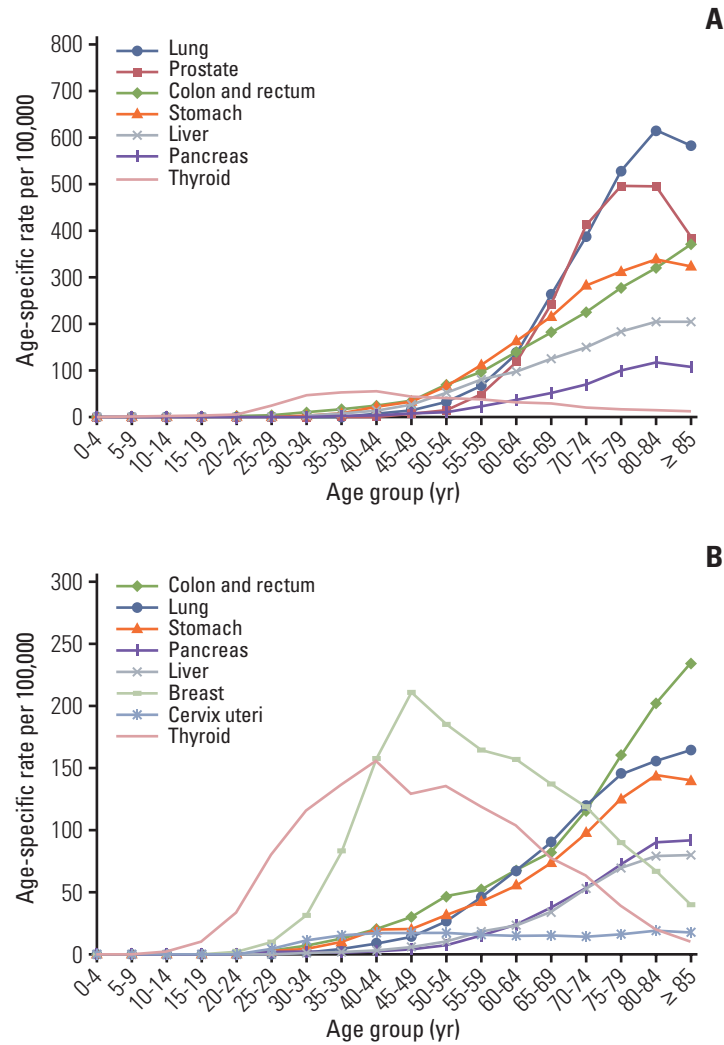


Fig. 2. Age-specific incidence rates of common cancers for 2020 in Korea. (A) Men. (B) Women.

Table 3. The top 10 leading causes of death in Korea, 2020

Rank	Cause of death	No. of deaths	Percentage of all deaths	Age-standardized death rate per 100,000 ^{a)}
	All causes	304,948	100.0	249.4
1	Cancer	82,204	27.0	69.9
2	Heart disease	32,347	10.6	24.2
3	Cerebrovascular disease	21,860	7.2	16.2
4	Pneumonia	22,257	7.3	14.8
5	Intentional self-harm (suicide)	13,195	4.3	17.9
6	Diabetes mellitus	8,456	2.8	6.3
7	Disease of liver	6,979	2.3	7.1
8	Chronic lower respiratory diseases	5,668	1.9	3.8
9	Hypertensive diseases	6,100	2.0	4.0
10	Transport accidents	3,947	1.3	4.6
	Others	101,935	33.4	80.5

Source: Mortality Data, 2020, Statistics Korea [2]. ^{a)}Age-adjusted using the Segi's world standard population.

Table 4. Crude and age-standardized cancer mortality rates by sex in Korea, 2020

Site/Type	Crude mortality rate per 100,000			Age-standardized mortality rate per 100,000 ^{a)}		
	Both sexes	Men	Women	Both sexes	Men	Women
All sites	160.1	198.5	121.9	69.9	99.4	47.8
Lip, oral cavity, and pharynx	2.5	3.8	1.2	1.2	2.0	0.5
Esophagus	3.0	5.5	0.6	1.4	2.7	0.3
Stomach	14.6	18.8	10.5	6.4	9.5	4.1
Colon and rectum	17.3	19.6	14.9	7.2	9.9	5.2
Liver	20.6	30.5	10.7	9.4	15.7	3.9
Gallbladder ^{b)}	10.1	10.9	9.4	4.0	5.2	3.1
Pancreas	13.2	13.5	12.9	5.7	6.8	4.7
Larynx	0.6	1.2	0.0	0.3	0.6	0.0
Lung	36.4	54.0	18.8	14.9	25.9	6.6
Breast	5.3	0.1	10.6	2.9	0.0	5.6
Cervix uteri	1.6	-	3.1	0.8	-	1.5
Corpus uteri	0.7	-	1.5	0.4	-	0.7
Ovary	2.7	-	5.3	1.3	-	2.6
Prostate	4.3	8.6	-	1.5	4.0	-
Testis	0.0	0.1	-	0.0	0.0	-
Kidney	2.1	3.0	1.2	0.9	1.5	0.4
Bladder	3.1	4.8	1.4	1.2	2.3	0.4
Brain and CNS	2.8	3.1	2.5	1.6	1.9	1.3
Thyroid	0.7	0.5	0.9	0.3	0.2	0.3
Hodgkin lymphoma	0.1	0.1	0.1	0.0	0.1	0.0
Non-Hodgkin lymphoma	3.8	4.3	3.2	1.7	2.3	1.2
Multiple myeloma	1.9	2.0	1.8	0.8	1.0	0.6
Leukemia	3.6	4.1	3.0	1.9	2.4	1.5
Other and ill-defined	9.1	10.1	8.2	4.2	5.5	3.2

CNS, central nervous system. ^{a)}Age-adjusted using the Segi's world standard population, ^{b)}Includes the gallbladder and other/ unspecified parts of the biliary tract.

again and regained the first rank since 2019. Table 2 provides the CRs and ASRs of cancer incidence in 2020. The CR and ASR of all cancer incidence were 482.9 per 100,000 (510.1 for men and 455.8 for women) and 262.2 per 100,000 (279.1 for men and 257.3 for women), respectively. The difference between CR and ASR implies that majority of cancer patients in Korea belong to the elderly, as opposed to the world's standard population, which has a higher proportion of young people. The overall lifetime probability of being diagnosed with any cancer was 36.9%, under the condition that one survives to the age that matches the life expectancy of the Korean population. That probability was higher in men (39.0%) than in women (33.9%) (data not shown).

There were marked differences in age-specific incidence rates (Fig. 1). In the childhood population (0-14 years), leukemia, non-Hodgkin lymphoma, and brain and central nervous system (CNS) cancer were the top three cancers in both sexes, accounting for 30.5%, 15.2%, and 12.9% of all cancer cases

diagnosed in this age group, respectively. Thyroid cancer was the most common cancer in both sexes among the adolescent and young adult populations (15-34 years), accounting for 52.3% of all cancers diagnosed. The most common cancers in that age group, excluding thyroid cancer, were colorectal cancer and leukemia in men, and breast and cervical cancer in women. In the 35-64-year age group, men were most commonly diagnosed with stomach, colorectal, liver, and thyroid cancers (collectively accounting for 51.5%), while breast and thyroid cancers were the most common in women (collectively accounting for 54.6%). For those aged 65 years and above, lung and prostate cancers were the most common in men, while colorectal and lung cancers were the most common in women. Most cancers have shown to increase in incidence with age; the exceptions were thyroid cancer in both sexes and breast cancer in women, which showed the highest incidence in those in their 30-40s and 40-50s age groups, respectively (Fig. 2).

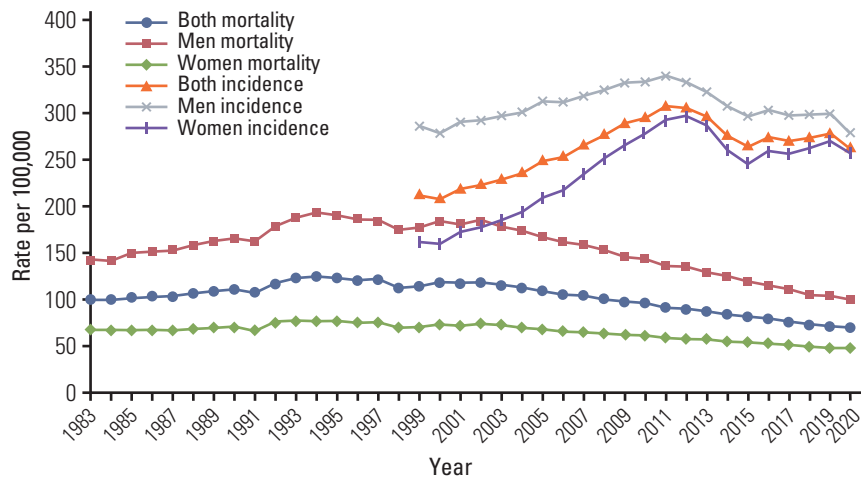


Fig. 3. Annual age-standardized cancer incidence and death rates by sex for all sites from 1983 to 2020 in Korea. Age standardization was based on the Segi's world standard population.

2. Mortality

Since the causes-of-death statistics were published in 1983, cancer has been the number one cause of death in Korea. As of 2020, a total of 82,204 people (61.8% men and 38.2% women) died of cancer, accounting for 27.0% of all deaths in Korea (Tables 1 and 3). The overall CR for cancer deaths was 160.1 per 100,000, and the rate was approximately 1.6 times higher for men than for women (Table 4). Lung cancer was the leading cause of cancer death in both sexes (CR, 54.0 per 100,000 in men and 18.8 per 100,000 in women), followed by liver and colorectal cancers in men, and colorectal and pancreatic cancers in women. When stratified according to the age at the time of death, the most common causes of cancer mortality in both sexes were as follows: leukemia in their 10s and 20s, breast cancer in their 30s, liver cancer in their 40s and 50s, and lung cancer among those 60 years old or older (data not shown).

3. Trends in cancer incidence and mortality

Changes in cancer incidence rates from 1999 to 2020 and mortality rates from 1983 to 2020 are depicted in Fig. 3. Compared to 1999, cancer incidence rates increased about 23.6% and mortality rates decreased about 39.3%, in 2020 (Table 5). The overall cancer incidence rates increased by approximately 3.3% per year until 2012, followed by a decline until 2015 with an annual decrease of 5.0%, and thereafter showed non-significant changes. In contrast, cancer mortality rates demonstrated nonsignificant changes until 2002, and decreased thereafter with an annual decrease of 2.7% until 2013, and a further decrease of 3.3% per year until 2020. These trends were observed similarly in both men and women, although the slopes of change were much more pronounced in wom-

en for incidence, and in men for mortality rates (S1 and S2 Tables).

Since 1999, breast, pancreas, kidney, and hematologic (leukemia and lymphoma) cancers, and that of some male or female reproductive organs (ovary, corpus uteri, prostate, and testis) have been continuously increasing. In both sexes combined, breast (especially for women) and kidney cancers displayed initial rapid increases and then lessened increases after 2008 and 2009, respectively. Prostate cancer demonstrated distinguished increase until 2009, followed by nonsignificant trend until 2015, and regained increasing trend thereafter. The remaining cancers with increasing trend revealed steady increases throughout the entire period. On the other hand, the incidences of colorectal and bladder cancers demonstrated increasing trends that have recently reversed significantly, with decreases starting in 2011 and 2004, respectively. In contrast, stomach and liver cancers demonstrated initial moderate decreasing trends until 2011 and 2010, respectively, followed by more rapid decreases thereafter; and cervical cancer showed marked decrease until 2007, however it showed lessened decrease thereafter until now. Lastly, the incidence of thyroid cancer increased significantly between 1999 and 2011, decreased significantly between 2011 and 2016, and increased again from 2016 without statistical significance (Table 5). These trends were observed similarly in both men and women, except for breast cancer in men and bladder cancer in women that revealed partially different results of trends from those described above. In men, decreasing trend of stomach, lung, and liver cancer throughout the period and colorectal cancer since 2011 were significant while prostate and kidney cancer had an increasing trend. In women, stomach, colorectal, liver, and

Table 5. Trends in cancer incidence and mortality rates from 1999 to 2020 in Korea, both sexes

Site/Type	Incidence						Mortality									
	Trend 1		Trend 2		Trend 3		Trend 1		Trend 2		Trend 3					
	1999	2020	Years	APC	Years	APC	Years	APC	Years	APC	Years	APC				
All sites	212.1	262.2	1999-2012	3.3 ^{a)}	2012-2015	-5.0 ^{a)}	2015-2020	0.3	115.1	69.9	1999-2002	0.9	2002-2013	-2.7 ^{a)}	2013-2020	-3.3 ^{a)}
Lip, oral cavity, and pharynx	3.6	4.4	1999-2020	0.7 ^{a)}	-	-	-	-	1.1	1.2	1999-2020	-1.8 ^{a)}	-	-	-	-
Esophagus	4.1	2.6	1999-2020	-2.0 ^{b)}	-	-	-	-	3.1	1.4	1999-2020	-4.3 ^{a)}	-	-	-	-
Stomach	43.6	25.7	1999-2011	-0.2	2011-2020	-4.8 ^{a)}	-	-	23.9	6.4	1999-2002	-2.5 ^{a)}	2002-2010	-6.4 ^{a)}	2010-2020	-7.2 ^{a)}
Colon and rectum	20.5	27.1	1999-2006	7.3 ^{a)}	2006-2011	2.9 ^{a)}	2011-2020	-3.8 ^{a)}	7.8	7.2	1999-2003	6.5 ^{a)}	2003-2012	-0.5 ^{a)}	2012-2020	-3.6 ^{a)}
Liver	27.9	14.5	1999-2010	-1.7 ^{a)}	2010-2020	-4.3 ^{a)}	-	-	20.6	9.4	1999-2002	0.6	2002-2014	-3.7 ^{a)}	2014-2020	-5.9 ^{a)}
Gallbladder ^{b)}	6.5	6.2	1999-2004	1.4	2004-2018	-0.3	2018-2020	-3.6	5.2	4.0	1999-2001	7.7	2001-2013	-2.9 ^{a)}	2013-2020	-0.7
Pancreas	5.6	7.6	1999-2020	1.6 ^{a)}	-	-	-	-	5.5	5.7	1999-2020	0.1	-	-	-	-
Larynx	2.4	1.1	1999-2020	-3.5 ^{a)}	-	-	-	-	1.6	0.3	1999-2005	-8.1 ^{a)}	2005-2008	-15.5 ^{a)}	2008-2020	-7.2 ^{a)}
Lung	28.5	25.8	1999-2020	-0.3 ^{a)}	-	-	-	-	22.5	14.9	1999-2001	3.6	2001-2013	-1.9 ^{a)}	2013-2020	-3.6 ^{a)}
Breast	11.0	30.1	1999-2008	6.3 ^{a)}	2008-2020	4.1 ^{a)}	-	-	2.3	2.9	1999-2004	2.9 ^{a)}	2004-2020	0.8 ^{a)}	-	-
Cervix uteri	8.6	3.7	1999-2007	-4.6 ^{a)}	2007-2020	-3.2 ^{a)}	-	-	1.4	0.8	1999-2003	10.1 ^{a)}	2003-2008	-7.1 ^{a)}	2008-2020	-4.2 ^{a)}
Corpus uteri	1.4	4.2	1999-2020	5.1 ^{a)}	-	-	-	-	0.1	0.4	1999-2003	36.1 ^{a)}	2003-2020	2.3 ^{a)}	-	-
Ovary	2.7	3.5	1999-2020	1.7 ^{a)}	-	-	-	-	0.9	1.3	1999-2020	0.6 ^{a)}	-	-	-	-
Prostate	3.1	14.7	1999-2009	14.8 ^{a)}	2009-2015	1	2015-2020	5.6 ^{a)}	0.9	1.5	1999-2002	15.0 ^{a)}	2002-2010	1.9 ^{a)}	2010-2020	-1.1 ^{a)}
Testis	0.3	0.7	1999-2020	4.8 ^{a)}	-	-	-	-	0.0	0.0	1999-2020	-2.4 ^{a)}	-	-	-	-
Kidney	3.0	6.6	1999-2009	6.4 ^{a)}	2009-2020	2.2 ^{a)}	-	-	1.1	0.9	1999-2016	-0.2	2016-2020	-4.7 ^{a)}	-	-
Bladder	4.7	4.1	1999-2004	1.9	2004-2020	-1.1 ^{a)}	-	-	1.3	1.2	1999-2002	9.3 ^{a)}	2002-2005	-6.0	2005-2020	-1.5 ^{a)}
Brain and CNS	2.9	2.8	1999-2020	0.1	-	-	-	-	1.9	1.6	1999-2003	4.1 ^{a)}	2003-2008	-4.3 ^{a)}	2008-2020	-0.8 ^{a)}
Thyroid	6.5	41.3	1999-2011	22.4 ^{a)}	2011-2016	-12.1 ^{a)}	2016-2020	4.5	0.4	0.3	1999-2003	7.4 ^{a)}	2003-2020	-4.5 ^{a)}	-	-
Hodgkin lymphoma	0.3	0.5	1999-2011	4.9 ^{a)}	2011-2020	1.6	-	-	0.0	0.0	1999-2004	24.7 ^{a)}	2004-2020	-2.6 ^{a)}	-	-
Non-Hodgkin lymphoma	4.3	6.6	1999-2020	2.3 ^{a)}	-	-	-	-	2.1	1.7	1999-2020	-1.1 ^{a)}	-	-	-	-
Multiple myeloma	1.0	1.6	1999-2013	3.7 ^{a)}	2013-2020	0.3	-	-	0.6	0.8	1999-2003	12.8 ^{a)}	2003-2016	0.8	2016-2020	-6.0 ^{a)}
Leukemia	4.7	5.4	1999-2020	0.9 ^{a)}	-	-	-	-	2.9	1.9	1999-2020	-1.9 ^{a)}	-	-	-	-
Other and ill-defined	15.0	21.4	1999-2018	2.3 ^{a)}	2018-2020	-2.1	-	-	7.8	4.2	1999-2020	-2.7 ^{a)}	-	-	-	-

APC, annual percentage change; CNS, central nervous system. APC was calculated using age-standardized incidence data based on the Segi's world standard population. ^{a)}Significantly different from zero (p < 0.05). ^{b)}Includes the gallbladder and other/unspecified parts of the biliary tract.

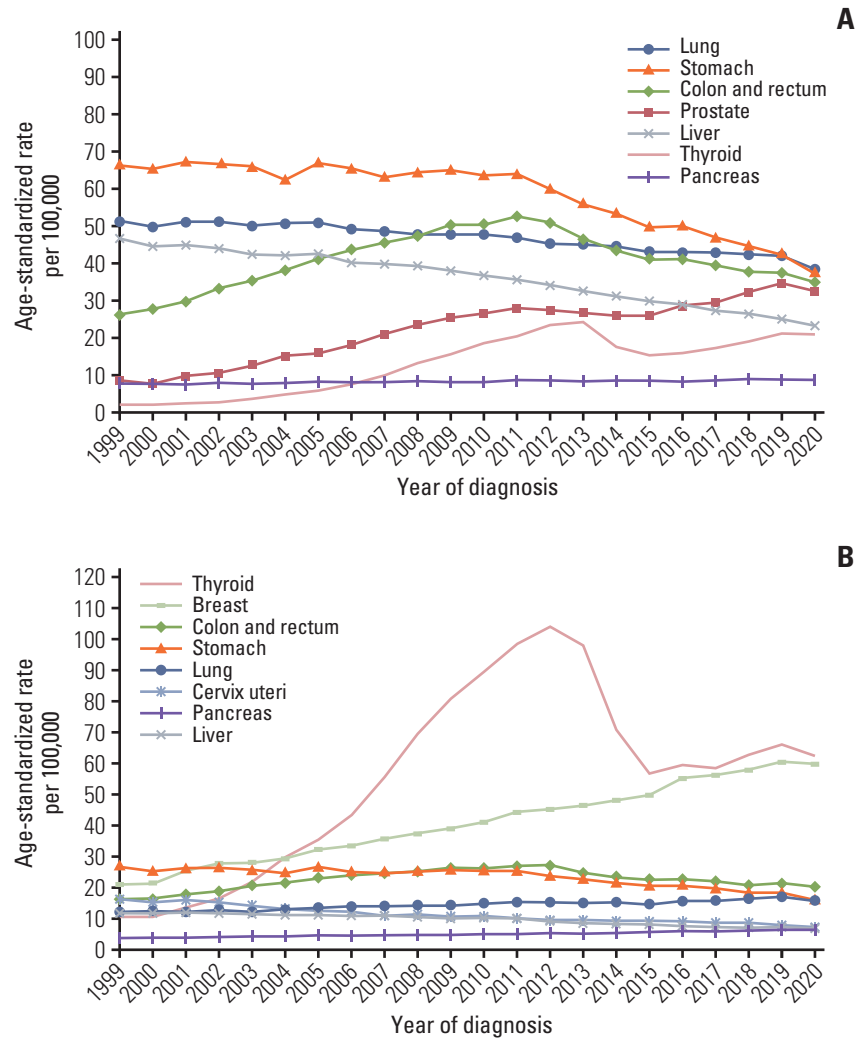


Fig. 4. Trends in age-standardized incidences of selected cancers by sex from 1999 to 2020 in Korea. (A) Men. (B) Women. Age standardization was based on Segi's world standard population.

cervix cancer had decreasing trend while breast and lung cancer revealed an increasing trend. The characteristic trend of thyroid cancer which changed rapidly in a short period of time, was more pronounced in women than in men (Fig. 4, S1 and S2 Tables).

The ASRs for mortality in most cancers have shown decreasing trends in Korea. Stomach cancer revealed continuous decreasing trends throughout the entire observed period for mortality, with more pronounced decreasing slopes in more recent periods. Liver and lung cancer mortality rates began to decrease in 2002 and 2001, respectively, followed by further rapid decreases starting in 2014 and 2013, respectively. On the other hand, the mortality rates of colorectal, cervical, and thyroid cancers initially increased significantly until 2003; since then, the mortality rate from these

cancers significantly decreased (Table 5). These trends were observed similarly in both sexes. However, breast cancer in women displayed significantly increasing mortality trends throughout the entire observed period, with less increasing trend after 2005 (Fig. 5, S1 and S2 Tables).

4. Survival rates

Over the past two decades, when cancer survival statistics have been compiled, the relative survival rates of cancer patients have increased significantly and steadily. The 5-year relative survival rates for all patients diagnosed with cancer in the recent 5 years, from 2016 to 2020 were 71.5% in both sexes; 65.5% in men and 77.8% in women (Table 6). The temporal increasing trends in survival rates, from 42.9% in 1993-1995 to 71.5% in 2016-2020, were maintained even after

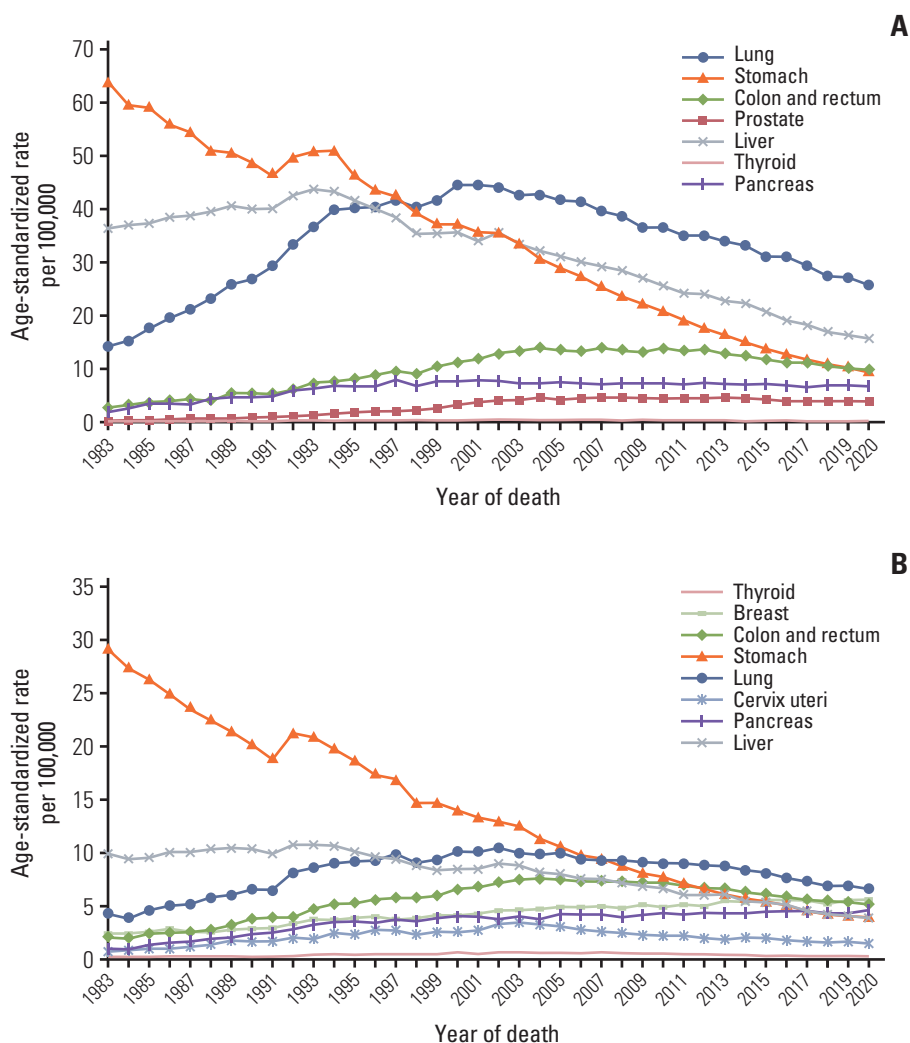


Fig. 5. Trends in age-standardized mortalities of selected cancers by sex from 1983 to 2020 in Korea. (A) Men. (B) Women. Age standardization was based on the Segi's world standard population.

excluding thyroid cancer (from 41.2% in 1993-1995 to 67.3% in 2016-2020), which has an excellent prognosis with a 5-year relative survival rate of 100%.

After thyroid cancer, survival rates were the highest for testis and prostate cancers in men (96.5% and 95.2%, respectively) and breast cancer in women (93.8%). On the contrary, the survival rates were the lowest for cancers of the pancreas (15.2%), and gallbladder plus other and unspecified parts of the biliary tract (29.0%) in both sexes. Stomach cancer (both sexes), prostate cancer (men), lung cancer, and leukemia (women) were associated with outstanding improvements in survival rates over the observed period. In contrast, advances have been slow for cancers of the brain and CNS, pancreas in both sexes.

In terms of stage distribution at diagnosis and recent sur-

vival rates according to the SEER summary stage in each cancer, Fig. 6 shows the top 10 most common cancers for each sex in 2020. In men, kidney, stomach, and bladder cancers revealed the highest proportions of patients who were diagnosed at the localized stage (72.9%, 64.7%, and 71.9%, respectively), accompanied by the 5-year survival rates of 98.4%, 98.2%, and 86.2%, respectively. In contrast, lung and pancreatic cancers demonstrated the highest proportions of patients diagnosed at the distant metastatic stage, which approximated to 50%, with corresponding 5-year survival rates of 8.8% and 2.5%, respectively. In women, 59.1%, 72.1%, and 63.5% of breast, uterine corpus, and stomach cancers, respectively, were diagnosed at the localized stage, with 5-year survival rates of 99.0%, 96.8%, and 96.0%, respectively. However, more than 40% of lung and pancreatic cancers

Table 6. Trends in the 5-year relative survival rates (%) by sex and year of diagnosis from 1993 to 2020 in Korea

Site/Type	Both sexes										Men					Women																												
	1993-1996-2000		2001-2006-2010		2011-2016-2020		Change ^{a)}		1993-1996-2000		2001-2006-2010		2011-2016-2020		Change ^{a)}		1993-1996-2000		2001-2006-2010		2011-2016-2020		Change ^{a)}																					
	1995	2000	2005	2010	2015	2020	1995	2000	2005	2010	2015	2020	1995	2000	2005	2010	2015	2020	1995	2000	2005	2010	2015	2020																				
All sites	42.9	45.2	54.1	65.5	70.7	71.5	28.6	33.2	36.4	45.6	56.9	63.1	65.5	32.3	55.2	56.4	64.3	74.4	78.3	77.8	22.6	41.2	43.4	50.9	59.1	64.3	67.3	26.1	32.7	35.9	44.7	54.6	60.4	63.4	30.7	52.6	53.5	59.1	65.0	69.4	72.2	19.6		
All sites excluding thyroid	42.2	47.4	54.5	61.1	65.5	69.4	27.2	36.6	41.7	49.7	56.9	61.8	66.7	30.1	59.4	64.5	68.1	72.1	74.5	75.8	16.5	14.0	15.7	21.6	30.0	36.6	42.2	28.2	13.0	14.7	20.8	29.4	36.2	41.8	28.7	25.0	25.9	29.8	37.3	39.6	45.6	20.6		
Lip, oral cavity, and pharynx	43.9	47.3	58.0	68.4	75.9	78.0	34.1	44.0	47.6	58.7	69.1	76.8	78.9	35.0	43.7	46.8	56.6	67.0	74.0	76.0	32.3	56.2	58.9	66.9	73.9	76.1	74.3	18.1	56.7	59.8	68.8	75.8	77.8	75.6	19.0	55.7	57.7	64.5	71.1	73.6	72.3	16.7		
Esophagus	11.8	14.1	20.5	28.3	34.4	38.7	26.9	10.8	13.8	20.4	28.3	35.0	39.1	28.2	15.1	15.1	20.9	28.3	32.8	37.6	22.6	18.7	20.7	23.1	26.9	28.8	29.0	10.4	18.0	21.1	23.5	27.8	29.5	29.8	11.7	19.3	20.3	22.7	26.0	28.0	28.2	8.9		
Stomach	10.6	8.7	8.4	8.6	10.9	15.2	4.6	10.0	8.3	8.4	8.3	10.3	14.2	4.2	11.5	9.3	8.4	8.9	11.6	16.2	4.7	61.6	63.3	66.5	73.2	75.3	80.0	18.3	62.2	63.7	67.1	73.5	75.7	80.1	17.9	56.3	58.9	58.7	68.0	69.4	78.3	22.0		
Colon and rectum	12.5	13.7	16.6	20.3	27.6	36.8	24.3	11.6	12.4	15.3	18.0	23.4	30.6	19.0	15.8	17.5	20.2	26.0	37.4	50.3	34.4	79.2	83.6	88.7	91.2	92.8	93.8	14.5	77.1	84.3	87.5	89.9	90.8	92.5	15.4	79.3	83.6	88.7	91.2	92.8	93.8	14.5		
Liver	78.3	80.3	81.5	80.7	80.3	80.1	1.7	-	-	-	-	-	-	-	78.3	80.3	81.5	80.7	80.3	80.1	1.7	82.9	82.0	84.8	86.5	87.7	89.3	6.4	-	-	-	-	-	-	-	82.9	82.0	84.8	86.5	87.7	89.3	6.4		
Gallbladder ^{b)}	60.1	59.4	61.7	61.3	64.9	64.7	4.6	-	-	-	-	-	-	-	60.1	59.4	61.7	61.3	64.9	64.7	4.6	59.1	69.4	81.0	92.0	94.2	95.2	36.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pancreas	59.1	69.4	81.0	92.0	94.2	95.2	36.1	59.1	69.4	81.0	92.0	94.2	95.2	36.1	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0	63.4	65.3	73.0	78.5	82.2	85.8	22.4	65.8	70.3	74.9	78.9	83.4	85.3	19.4		
Larynx	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0	71.6	75.1	77.8	79.3	78.5	78.6	7.0	70.7	73.6	76.0	77.3	76.5	76.5	5.8	39.0	38.7	40.4	41.4	40.4	38.4	-0.6	42.3	41.4	41.9	44.7	43.4	43.0	0.7		
Lung	40.4	39.9	41.1	42.9	41.8	40.5	0.1	39.0	38.7	40.4	41.4	40.4	38.4	-0.6	87.9	89.7	96.0	100.2	100.6	100.3	12.4	94.5	95.0	98.4	100.0	100.0	100.0	5.5	69.4	69.3	74.7	80.8	81.8	87.1	17.6	71.5	77.3	80.7	81.6	83.3	87.2	15.7		
Breast	70.2	71.9	76.7	81.1	82.3	87.1	16.9	69.4	69.3	74.7	80.8	81.8	87.1	17.6	46.8	49.6	55.0	59.2	62.9	65.9	19.1	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	50.7	53.3	57.5	59.7	62.8	64.8	14.1		
Cervix uteri	23.7	21.0	29.7	35.0	41.6	50.7	27.0	23.2	19.1	29.9	35.2	41.2	51.4	28.2	24.1	23.2	29.5	34.7	42.1	49.8	25.7	27.5	34.3	42.0	47.7	52.0	55.2	27.6	27.3	33.3	41.8	46.9	52.2	54.8	27.5	27.9	35.5	42.1	48.7	51.7	55.6	27.7		
Corpus uteri	44.5	48.4	57.9	67.7	72.8	76.4	31.9	39.6	44.7	54.1	63.8	69.4	73.4	33.8	50.1	52.7	62.0	71.6	76.2	79.3	29.2	44.5	48.4	57.9	67.7	72.8	76.4	31.9	39.6	44.7	54.1	63.8	69.4	73.4	33.8	50.1	52.7	62.0	71.6	76.2	79.3	29.2		
Ovary	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1		
Prostate	59.1	69.4	81.0	92.0	94.2	95.2	36.1	59.1	69.4	81.0	92.0	94.2	95.2	36.1	59.1	69.4	81.0	92.0	94.2	95.2	36.1	59.1	69.4	81.0	92.0	94.2	95.2	36.1	59.1	69.4	81.0	92.0	94.2	95.2	36.1	59.1	69.4	81.0	92.0	94.2	95.2	36.1		
Testis	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0	87.4	90.4	90.7	93.2	94.9	96.5	9.0		
Kidney	64.2	67.0	73.7	78.6	82.6	85.7	21.4	63.4	65.3	73.0	78.5	82.2	85.8	22.4	65.8	70.3	74.9	78.9	83.4	85.3	19.4	70.7	73.6	76.0	77.3	76.5	76.5	5.8	71.6	75.1	77.8	79.3	78.5	78.6	7.0	67.2	67.2	69.1	69.2	68.5	68.4	1.2		
Bladder	40.4	39.9	41.1	42.9	41.8	40.5	0.1	39.0	38.7	40.4	41.4	40.4	38.4	-0.6	42.3	41.4	41.9	44.7	43.4	43.0	0.7	94.5	95.0	98.4	100.0	100.0	100.0	5.5	69.4	69.3	74.7	80.8	81.8	87.1	17.6	71.5	77.3	80.7	81.6	83.3	87.2	15.7		
Brain and CNS	70.2	71.9	76.7	81.1	82.3	87.1	16.9	69.4	69.3	74.7	80.8	81.8	87.1	17.6	46.8	49.6	55.0	59.2	62.9	65.9	19.1	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1		
Thyroid	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1		
Hodgkin lymphoma	23.7	21.0	29.7	35.0	41.6	50.7	27.0	23.2	19.1	29.9	35.2	41.2	51.4	28.2	24.1	23.2	29.5	34.7	42.1	49.8	25.7	27.5	34.3	42.0	47.7	52.0	55.2	27.6	27.3	33.3	41.8	46.9	52.2	54.8	27.5	27.9	35.5	42.1	48.7	51.7	55.6	27.7		
Non-Hodgkin lymphoma	44.5	48.4	57.9	67.7	72.8	76.4	31.9	39.6	44.7	54.1	63.8	69.4	73.4	33.8	50.1	52.7	62.0	71.6	76.2	79.3	29.2	44.5	48.4	57.9	67.7	72.8	76.4	31.9	39.6	44.7	54.1	63.8	69.4	73.4	33.8	50.1	52.7	62.0	71.6	76.2	79.3	29.2		
Multiple myeloma	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	48.3	51.1	56.0	59.4	62.9	65.4	17.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1	46.8	49.6	55.0	59.2	62.9	65.9	19.1		
Leukemia	23.7	21.0	29.7	35.0	41.6	50.7	27.0	23.2	19.1	29.9	35.2	41.2	51.4	28.2	24.1	23.2	29.5	34.7	42.1	49.8	25.7	27.5	34.3	42.0	47.7	52.0	55.2	27.6	27.3	33.3	41.8	46.9	52.2	54.8	27.5	27.9	35.5	42.1	48.7	51.7	55.6	27.7		
Other and ill-defined	44.5	48.4	57.9	67.7	72.8	76.4	31.9	39.6	44.7	54.1	63.8	69.4	73.4	33.8	50.1	52.7	62.0	71.6	76.2	79.3	29.2	44.5	48.4	57.9	67.7	72.8	76.4	31.9	39.6	44.7	54.1	63.8	69.4	73.4	33.8	50.1	52.7	62.0	71.6	76.2	79.3	29.2		

CNS, central nervous system. ^{a)}Absolute percentage change in 5-year relative survival from 1993 to 1995 and 2016 to 2020. ^{b)}Includes the gallbladder and other/ unspecified parts of the biliary tract.

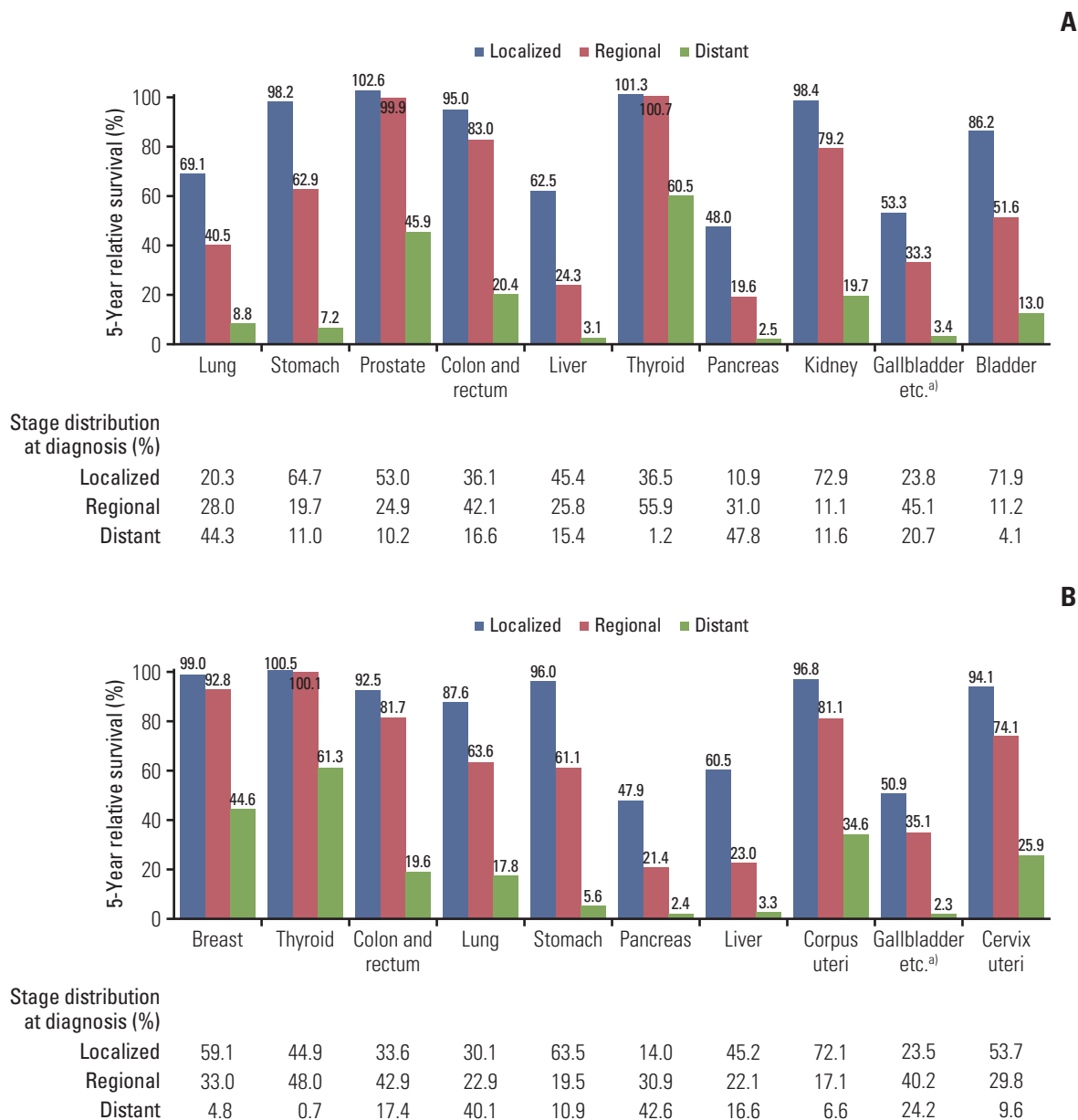


Fig. 6. Five-year relative survival rates by stage at diagnosis and stage distribution of selected cancers by sex in Korea, 2016-2020. (A) Men. (B) Women. Staging according to the Surveillance, Epidemiology, and End Results (SEER) stage categories. For each cancer type, stage categories do not total 100% because sufficient information was not available to stage all cases. ^{a)}Includes the gallbladder and other/unspecified parts of the biliary tract.

were diagnosed at the distant metastatic stage, with 5-year survival rates of 17.8% and 2.4%, respectively.

5. Prevalence rates

The total prevalent cancer cases in 2020 (identified as survivor at the time of January 1, 2021) were 2,276,792, surpassing 2 million since 2018 (Table 1). It suggested that one in 23 people (4.4% of the entire Korean population; 3.9% of men

and 5.0% of women) has a history of being diagnosed with cancer. Of these, 1,090,322 (47.9% of all prevalent cases) were aged ≥ 65 years, indicating that one in seven people in that age group (16.8% of, or one in six, men and 10.8% of, or one in nine, women) would have experienced cancer (data not shown).

Table 7 provides the CRs and ASRs of prevalence for all cancers combined and for specific cancers. In total, the can-

Table 7. Crude and age-standardized rates of cancer prevalence by sex on January 1, 2020 in Korea

Site/Type	Crude prevalence rate per 100,000 ^{a)}			Age-standardized prevalence rate per 100,000 ^{b)}		
	Both sexes	Men	Women	Both sexes	Men	Women
All sites	4,433.9	3,901.2	4,963.8	2,373.6	2,121.4	2,708.5
Lip, oral cavity, and pharynx	61.2	81.8	40.8	33.4	45.8	22.3
Esophagus	24.7	44.0	5.5	11.4	22.1	2.4
Stomach	643.1	850.9	436.4	304.5	436.8	194.1
Colon and rectum	569.8	676.7	463.4	267.5	350.3	199.5
Liver	151.8	227.4	76.6	77.2	122.3	36.0
Gallbladder ^{c)}	52.0	53.8	50.2	22.9	27.0	19.7
Pancreas	32.0	32.4	31.6	16.3	17.4	15.6
Larynx	23.9	45.0	2.8	10.9	22.6	1.2
Lung	216.6	258.7	174.7	101.5	131.0	78.8
Breast	545.2	4.0	1,083.6	307.6	2.1	606.2
Cervix uteri	117.8	-	234.9	65.2	-	128.0
Corpus uteri	65.8	-	131.2	37.1	-	73.2
Ovary	50.0	-	99.8	30.8	-	61.4
Prostate	234.5	470.3	-	96.5	223.9	-
Testis	8.5	17.1	-	7.6	14.8	-
Kidney	106.4	144.4	68.6	57.9	82.0	35.8
Bladder	81.5	133.1	30.1	35.7	66.5	11.6
Brain and CNS	26.1	26.9	25.3	21.2	22.5	19.9
Thyroid	953.6	357.5	1,546.6	587.8	226.8	947.2
Hodgkin lymphoma	7.1	8.8	5.4	5.7	6.8	4.6
Non-Hodgkin lymphoma	79.6	90.5	68.7	50.5	60.4	41.1
Multiple myeloma	16.2	17.1	15.3	7.9	9.0	7.0
Leukemia	52.9	58.8	47.0	46.0	51.4	40.6
Other and ill-defined	313.7	302.0	325.3	170.4	180.1	162.4

CNS, central nervous system. ^{a)}Crude prevalence rate: number of prevalent cases divided by the corresponding person-years of observation. Prevalent cases were defined as patients who were diagnosed between January 1, 1999 and December 31, 2020 and who were alive on January 1, 2021. Multiple primary cancer cases were counted multiple times. ^{b)}Age-adjusted using the Segi's world standard population. ^{c)}Includes the gallbladder and other/unspecified parts of the biliary tract.

cer prevalence rate for 2020 in Korea was 4,433.9 per 100,000 people. Thyroid cancer had the highest prevalence (CR, 953.6 per 100,000; 357.5 per 100,000 for men and 1,546.6 per 100,000 for women), followed by stomach cancer (CR, 643.1 per 100,000) and colorectal cancer (CR, 569.8 per 100,000). Prostate cancer in men and breast cancer in women revealed the highest prevalence rates (CR, 470.3 and 1,083.6 per 100,000, respectively).

The number of prevalent cases for common cancers, according to the time since cancer diagnosis, are described in Fig. 7. In total, 1,368,140 (60.1% of all prevalent cases) had survived > 5 years after cancer diagnosis, majority of them being survivors of thyroid, stomach, colorectal, and breast cancers. Another 487,192 (21.4% of all prevalent cases) have been alive 2-5 years after their cancer diagnosis, in which period they need regular follow-up; and the rest were 421,460

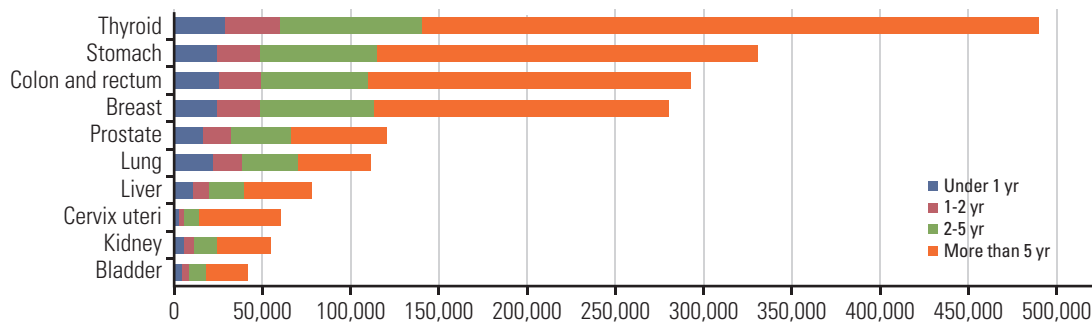
(18.5% of all prevalent cases) for whom it had been < 2 years since their cancer diagnosis, in which period they still need active cancer treatment.

6. Carcinoma *in situ* incidence

A summary of carcinoma *in situ* cases in 2020 is provided as a Supplementary Material (S3-S6 Tables, S7-S9 Figs.).

Conclusion

Compared to 2019, the number of new cancer diagnoses in 2020 decreased due to the impact of the COVID-19 pandemic. Except for 2020, the number of new cancer patients in Korea has been increasing since 2015, but the ASRs of incidence did not reveal a significant change. During the



Time since diagnosis	Thyroid	Stomach	Colon and rectum	Breast	Prostate	Lung	Liver	Cervix uteri	Kidney	Bladder	All cancers
Under 1 yr	29,041	24,160	25,384	24,621	16,421	22,048	11,273	2,868	5,567	4,356	220,230
1-2 yr	30,699	24,260	24,134	24,332	15,964	16,773	8,706	2,914	5,407	4,019	201,230
2-5 yr	80,991	66,626	60,559	64,015	34,116	31,157	19,141	8,602	13,126	9,475	487,192
More than 5 yr	348,957	215,171	182,509	166,997	53,922	41,230	38,838	46,083	30,552	23,985	1,368,140
Total	489,688	330,217	292,586	279,965	120,423	111,208	77,958	60,467	54,652	41,835	2,276,792

Fig. 7. Prevalent cases of common cancers by time since cancer diagnosis. Prevalent cases were defined as the number of cancer patients alive on January 1, 2021 among all cancer patients diagnosed between 1999 and 2020.

past decade, the incidence of stomach, colorectal, liver, and cervical cancer has been declining while that of prostate and breast cancer have been on the rise since 1999. Thyroid cancer, which has decreased since 2012, has shown an increasing trend since 2015. The 5-year relative survival rate of cancer patients diagnosed in the past 5 years was 71.5%, which is steadily improving. Since 2018, the number of cancer survivors has exceeded 2 million, of which 60.1% are those who survived over 5 years. As the number of newly diagnosed cancer patients, cancer survival rates and cancer prevalence continue to increase, national cancer control strategies must be planned and implemented to keep pace with these changing cancer statistics. In addition, the impact of the COVID-19 pandemic on cancer diagnosis and treatment should be evaluated in further studies.

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Electronic Supplementary Material

Supplementary materials are available at Cancer Research and Treatment website (<https://www.e-crt.org>).

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Conflicts of Interest

Conflict of interest relevant to this article was not reported.

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