(Table 1). We calculated the age-standardized incidence rates of STS using the 2000 US 19 age groups standard population (ASR-US) (7) and World standard population (4).

We used Joinpoint regression analysis, which was developed by the Surveillance, Epidemiology and End Results Program of the US National Cancer Institute, to identify the years, so-called joinpoint, when statistically significant changes in incidence trend occurred. Joinpoint regression analysis software (version 3.5.2) was obtained from the web site of the Statistical Research Applications Branch of the National Cancer Institute, USA (8) The model can estimate the annual percentage change (APC) of each segment between joinpoints and test whether it is significantly different from zero ($P < 0.05$). The logarithmic age-standardized incidence was used as the dependent variable, and the year of diagnoses was used as the independent variable in the model. We set the number of joinpoints in cancer trends to a minimum of 0 and a maximum of 3 to find the best fit model using a permutation test and assumed constancy and uncorrelated errors in the calculation. The 10-year trends of incidence were evaluated using the estimated average APC with a 95% confidence interval (CI) according to sex by fitting a linear term on the logarithmic scale.

RESULTS

We identified a total of 6998 incident cases (male 3315, female 3683) of STS. The ASR-US of STS was 2.7 (male 2.8, female 2.6) and the ASR-W was 2.0 (male 2.1, female 2.0) per 100 000 person-years during 1978–2007. The trend in the incidence for the recent 10-year period (1998–2007) increased significantly, 0.6% (95% CI 0.2, 1.0) per year overall and 1.1 (95% CI 0.6, 1.5) for females by Joinpoint regression analysis, while it was not significant, 0.2 (95% CI −0.4, 0.7), for males (Fig. 1).

About one-third (35.2%) of STS were located in the connective, subcutaneous and other soft tissues, followed by digestive organs (21.9%), and retroperitoneum and peritoneum (13.5%) (Table 2).

In Table 3, we showed the total number of incidence, female-to-male ratio and age distributions according to the histological group. Before using KIT staining, most GISTs had been identified as leiomyoma. So we made a category of leiomyosarcomas in digestive organs and gastrointestinal stromal sarcoma (GISS) (malignant GIST). The most common histological subtype was sarcoma NOS (18.0%), which was followed by leiomyosarcoma in digestive organs and GISS (16.5%), leiomyosarcoma excluding that in digestive organs (11.6%), liposarcoma (9.6%) and malignant fibrous histiocytoma (MFH) (9.0%). Kaposi sarcoma might be a possible factor for increasing incidence rates of STS (12,14); however, we found only 11 cases during this whole study period. The female-to-male ratio was 1.1 for total STS, but 0.8 for leiomyosarcoma in digestive organs and GISS. About 7% of the tumors occurred in children (0–19 years), while majority (54%) occurred in the 20–64 years age group. The remaining 39% occurred in the elderly aged ≥65 years. Sarcoma NOS, leiomyosarcoma in digestive organs and GISS, MFH and angiosarcoma occurred mainly in elder people, while rhabdomyosarcoma and PNET occurred mainly in young people and children.

Figure 2 shows the trends in the number of incidence for leiomyosarcoma, GISS and endometrial stromal sarcoma (ESS) during the last two decades. GISS was registered for the first time in 1988. The number of incidence for leiomyosarcoma in digestive organs has decreased since 1999, while GISS has increased thereafter. GISS might have been diagnosed as leiomyosarcoma in digestive organs before using immunohistochemistry. The number of incidence for leiomyosarcoma in uterus and ESS was almost constant.

Table 1. Histological group by ICD-3 code

Histological group	ICD-3 codes
Sarcoma NOS	M8800–8806, M8000–8004 located in C48.0–49.9
Leiomyosarcoma in digestive organs and GISS	M8890–8896 located in C15–26 and M8936
Leiomyosarcoma excluding in digestive organs	M8890–8896 exclusively located in C15–26
Endometrial stromal sarcoma	M8930–8935
Liposarcoma	M8850–8858
MFH	M8830
Angiosarcoma	M9120–9133, M9150 and M9170
Rhabdomyoma	M8900–8920 and M8991
Fibrosarcoma	M8810–8815
Nerve sheath tumor and MPNST	M9540–9571
Dermatofibrosarcoma	M8832–8833
Other specified soft tissue sarcoma	
Carcinosarcoma, NOS	M8980
Synovial sarcoma	M9040–9043
Mixed tumor, malignant NOS	M8940
PNET, NOS	M9364 and M9473
Granular cell tumors and alveolar soft part sarcoma	M9580–9581
Paragangliomas and glomus tumors	M8680–8711
Malignant mesenchynoma	M8990
Malignant myoepithelioma	M8982
Clear cell sarcoma	M9044
Kaposi sarcoma	M9140
Rhabdoid tumor	M8963
Osteosarcoma and chondrosarcoma	M9180–9243
Myxosarcoma	M8840
Malignant giant cell tumors	M9251

NOS, not otherwise specified; GISS, gastrointestinal stromal sarcoma; MFH, malignant fibrous histiocytoma; MPNST, malignant peripheral nerve sheath tumor; PNET, primitive neuroectodermal tumor.

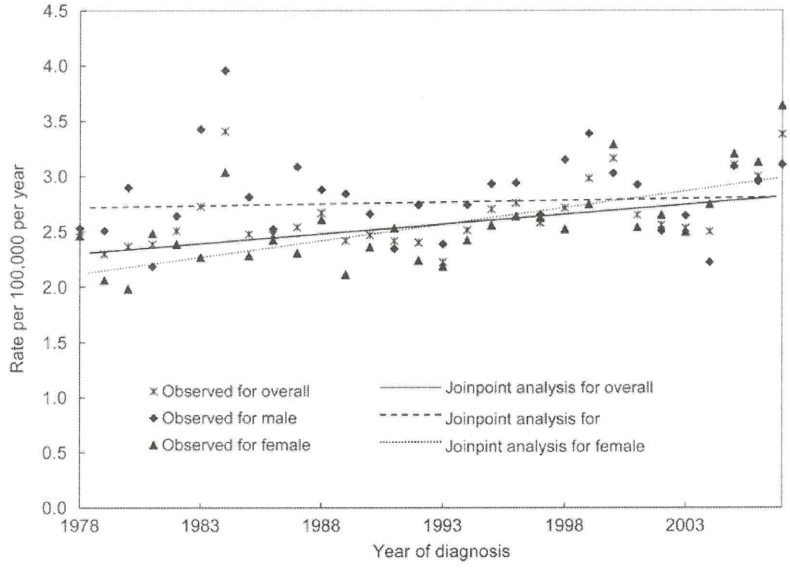

Figure 1. Trends for age-adjusted incidence rates (standard: the 2000 US population) by sex during 1978–2007.

Table 2. Primary sites of all STSs excluding bones and joints, Osaka, 1978–2007

ICD-O		Cases	%	Rate
C49	Connective, subcutaneous and other soft tissues	2461	35.2	0.96
C15–26	Digestive organs	1536	21.9	0.57
C16	Stomach	(730)	(10.4)	(0.27)
C48	Retroperitoneum and peritoneum	948	13.5	0.36
C51–57	Female genital organs	865	12.4	0.32
C53–55	Uterus	(742)	(10.6)	(0.27)
C30–39	Respiratory system and intrathoracic organs	382	5.5	0.14
C44	Skin	160	2.3	0.06
C00–14	Lip, oral cavity and pharynx	154	2.2	0.06
C47	Peripheral nerve and autonomic nerve system	120	1.7	0.04
C64–68	Urinary tract	96	1.4	0.04
C69–72	Eye brain and other parts of the central nervous system	92	1.3	0.04
C50	Breast	80	1.1	0.03
C60–63	Male genital organs	75	1.1	0.03
C73–75	Thyroid and other endocrine glands	15	0.2	0.01
C76,77, 80	Other, ill–defined sites, lymph nodes and unknown primary site	14	0.2	0.01
		6998	100.0	2.65

Rates are per 100 000 person–years and age–adjusted to the 2000 US (19 age groups) standard.

DISCUSSION

In Osaka, Japan, 6998 cases were diagnosed as STS during 1978–2007. They represent 2.5% (male 2.1%, female 3.2%) of total malignant tumors (4,9). The ASR-US of STS was 2.7 (male 2.8, female 2.6), and the ASR-W was 2.0 (male 2.1, female 2.0) per 100 000 person-years during the study period. These rates were lower than the ones in other reports: Toro et al. (10) in the USA (total 5.03/100 000 with ASR-US 2000) and Mastrangelo et al. (11) in three European regions (male 5.12, female 4.58/100 000 with ASR-US 2000) who surveyed the cases of STS except for bones and joints as well as Kaposi sarcomas. Our data were comparable with the report of Wibmer et al. (12): 2.4/100 000 (ASR-W) for both sexes with Austrian National Cancer Registry. But they excluded dermatofibrosarcoma (ICD-O-3: 8832/3) which accounted for 6.2–9.5%. Toro et al. (10) reported that the incidence rates were highest among black women (6.26) and the lowest among white women (4.60). This report suggested that the incidence rate differed among races.

The trends in the incidence for the last 10-year period (1998–2007) increased significantly, 0.6% (95% CI: 0.2, 1.0) and 1.1% (0.6, 1.5) per year overall and for females, respectively. Reporting practices and diagnostic changes are both possible explanations for artificial increase. Reporting practices have been almost constant between 1998 and 2007; however, we must consider changes in the opportunities for diagnostic imaging. According to the reports of Health and Welfare Statistics (13), the number of computed tomography (CT) scans increased rapidly and widely from 107 in 1978 to 511 in 1990 in Osaka. Thereafter, imaging diagnostic

Table 3. Characteristics of STSs by histological group, Osaka, 1978–2007

Histological group	Total		Male	Ratio	Age at diagnosis (%)		
	n	%	*n*	Female/male	0–19 (%)	20–64 (%)	65 (%)
Sarcoma NOS	1262	18.0	565	1.2	4.0	45.2	50.8
Leiomyosarcoma in digestive organs and GISS	1158	16.5	655	0.8	0.3	54.3	45.4
Leiomyosarcoma excluding in digestive organs	815	11.6	238	2.4	1.1	66.3	32.6
Endometrial stromal sarcoma	117	1.7	6	18.5	0.9	77.8	21.4
Liposarcoma	670	9.6	331	1.0	1.9	59.0	39.1
MFH	629	9.0	366	0.7	1.6	51.7	46.7
Angiosarcoma	433	6.2	243	0.8	6.7	40.9	52.4
Rhabdomyoma	418	6.0	231	0.8	49.3	31.1	19.6
Fibrosarcoma	275	3.9	140	1.0	12.0	59.6	28.4
Nerve sheath tumor and MPNST	247	3.5	133	0.9	5.7	67.6	26.7
Dermatofibrosarcoma	161	2.3	79	1.0	8.1	77.6	14.3
Other specified soft tissue sarcoma							
Carcinosarcoma, NOS	370	5.3	96	2.9	0.0	52.2	47.8
Synovial sarcoma	132	1.9	69	0.9	21.2	65.9	12.9
Mixed tumor, malignant NOS	82	1.2	39	1.1	0.0	72.0	28.0
PNET, NOS	56	0.8	30	0.9	66.1	33.9	0.0
Granular cell tumors and alveolar soft part sarcoma	36	0.5	13	1.8	19.4	69.4	11.1
Paragangliomas and glomus tumors	34	0.5	21	0.6	8.8	79.4	11.8
Malignant mesenchynoma	26	0.4	13	1.0	3.8	57.7	38.5
Malignant myoepithelioma	23	0.3	14	0.6	0.0	47.8	52.2
Clear cell sarcoma	19	0.3	11	0.7	5.3	84.2	10.5
Kaposi sarcoma	11	0.2	10	0.1	9.1	54.5	36.4
Rhabdoid tumor	9	0.1	5	0.8	77.8	22.2%	0.0
Osteosarcoma and chondrosarcoma	7	0.1	2	2.5	0.0	57.1	42.9
Myxosarcoma	4	0.1	3	0.3	0.0	25.0	75.0
Malignant giant cell tumors	4	0.1	2	1.0	0.0	50.0	50.0
	6998		3315	1.1	6.7	54.0	39.3

techniques such as CT and magnetic resonance imaging (MRI) have been introduced and widely used. Thus, we analyzed the trends in the incidence during 1998–2007, so the improvement in diagnostics had a little influence on the trends. Some reports from the USA (14) and the European region (12) showed that AIDS-related KS was a major factor for increased incidence of STS. HHV-8 (15), known as KS-associated herpes virus, is the important oncogenic factor with cytokine-induced growth and it might cause the difference in the incidence among areas. We found only 11 cases of Kaposi sarcoma (KS) during this whole study period. The increase observed in OCR cannot be readily explained, but we have to monitor the future trend.

Recently, technical methods for diagnosis of STSs progressed remarkably, especially for GISS (16–18). In 1998, Hirota et al. (1) reported that most GISTs expressed KIT, a receptor tyrosine kinase encoded by a proto-oncogene c-kit. These findings have led to the development of a highly specific and effective, targeted therapy with imatib methylate, representing a paradigm shift in therapy for malignant disease.

GISS was registered for the first time in 1988 in OCR, and thereafter, only 0–2 cases per year were registered till 1998. The number of incidence for leiomyosarcoma in digestive organs decreased since 1999, while GISS increased rapidly thereafter. Leiomyosarcoma in digestive organs was almost diminishing, and became only four cases in 2007. This implies that sarcomas in digestive organs have been diagnosed actively using immunohistochemistry, and have had effective therapies widely since 1999 in Osaka. While the number of incidence for leiomyosarcoma in uterus and ESS was almost constant by year (Fig. 2). Goettsch et al. (19) also reported that the increased incidence of GISTs during 1995–2003 was related to an increase in the understanding of GIST pathology

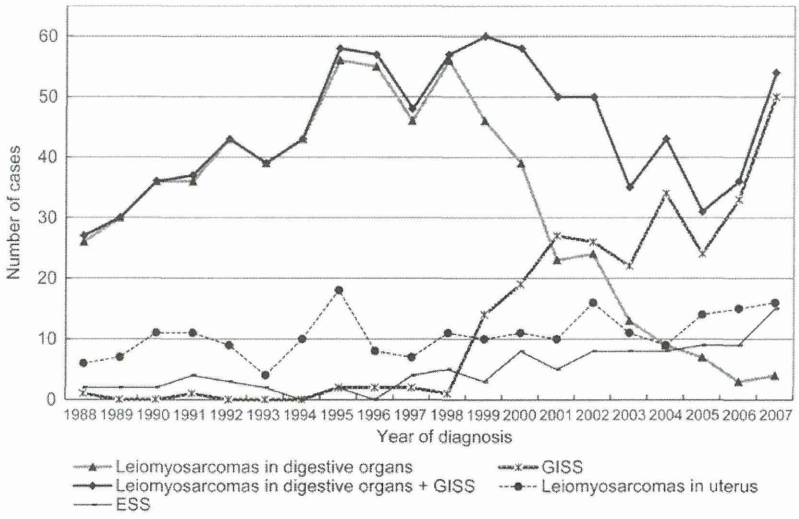

Figure 2. Number of cases of leiomyosarcoma, gastrointestinal stromal sarcoma (GISS) and edometrial stromal sarcoma (ESS) by year of diagnosis, Osaka, 1988–2007.

and the routine availability of the diagnostic immunohistochemical antibody directed to the CD117 antigen.

This study was the first description on the overall incidence of STS in Japan, and would help in understanding the trends of STS by histological group. In the last two decades, great efforts have been made to understand the oncogenic mechanism of STS and led to the development of alternative treatment. We should keep monitoring how the diagnostic procedures and the change in the histological classification will affect the future trends of STS.

Conflict of interest statement

None declared.

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JJCO Japanese Journal of Clinical Oncology

Epidemiology Note

Jpn J Clin Oncol 2013;43(3)328–336
doi:10.1093/jjco/hys233
Advance Access Publication 7 January 2013

Cancer Incidence and Incidence Rates in Japan in 2007: A Study of 21 Population-based Cancer Registries for the Monitoring of Cancer Incidence in Japan (MCIJ) Project

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Received November 8, 2012; accepted December 13, 2012

The Japan Cancer Surveillance Research Group aimed to estimate the cancer incidence in Japan in 2007 based on data collected from 21 out of 33 population-based cancer registries as part of the Monitoring of Cancer Incidence in Japan (MCIJ) project. The total number of incidences in Japan for 2007 was estimated to be 704 090 (C00–C96). Stomach cancer and breast cancer were the leading types of cancer in males and females, respectively.

Key words: cancer incidence – incidence estimates – extent of disease – cancer registry – Japan

INTRODUCTION

The Japan Cancer Surveillance Research Group has been involved in cancer monitoring in Japan since 2000 (1–7). This group aimed to estimate the cancer incidence in Japan in 2007 based on data collected from 21 out of 33 population-based cancer registries, as part of the Monitoring of Cancer Incidence in Japan (MCIJ) project. The selected registries were as follows: Iwate, Miyagi, Akita, Yamagata, Ibaraki, Tochigi, Gunma, Chiba, Kanagawa, Niigata, Toyama, Fukui, Aichi, Shiga, Kyoto, Tottori, Okayama, Hiroshima, Saga, Nagasaki and Kumamoto.

If data from all 33 registries were used, then this would have led to a large underestimation of the national cancer incidence due to incompleteness of registration in the non-selected registries. The methods of registry selection, estimation of incidence and the limitations of these methods have been previously described elsewhere (8–10). Briefly, we maintained the same methodology used in the MCIJ project since 2003, where we invited all 33 population-based cancer registries in Japan to participate in this study. From these registries, we selected 21 cancer registries that had high-quality data, which cover 41.6% of the total population in Japan, to estimate the national incidence in 2007.

Registries that meet the following standards were considered to be a 'high-quality' data area: (i) DCO% (death certificate only: proportion of patients reported by death certificate only) of $<25\%$, or DCN% (death certificate notification: proportion of patients first notified via death certificate) of $<30\%$; and (ii) M/I (mortality to incidence ratio) of <0.67.

In estimating cancer incidence, to remove the effects caused by the size of the registry population, an arithmetic mean of incidence rates of all eligible registries (by primary site) was used, instead of dividing the total incidence by the total population.

Cancer mortality in Japan was estimated by using the same methodology employed for the estimation of incidence, by taking mortality data from the vital statistics of the same

Table 1. Incidence (only invasive), completeness of reporting and accuracy of diagnosis in Japan, according to sex and primary site, 2007

Primary sites	ICD-10th	Estimated incidence	Crude rate[a]	Age-standardized rate[a]		Quality and completeness of reporting		Accuracy of diagnosis
				World population[b]	Japanese 1985 model population[b]	DCO/I[b] (%)	M/I	MV/I[b] (%)
Male								
All sites	C00–C96	41 0659	659.1	285.9	405.3	14.4	0.49	74.8
Lip, oral cavity and pharynx	C00–C14	10 217	16.4	8.1	10.9	11.4	0.45	83.4
Esophagus	C15	17 004	27.3	12.3	17.1	12.7	0.58	81.0
Stomach	C16	80 211	128.7	55.3	78.9	12.8	0.41	82.8
Colon and rectum	C18–C20	63 182	101.4	45.1	63.4	10.8	0.36	83.1
Colon	C18	38 580	61.9	26.6	37.9	11.2	0.36	82.4
Rectum	C19–C20	24 602	39.5	18.5	25.5	10.1	0.36	84.3
Liver	C22	30 190	48.5	21.0	29.8	22.1	0.74	30.4
Gallbladder, etc.	C23–C24	9875	15.8	6.1	9.1	22.6	0.80	51.9
Pancreas	C25	15 602	25.0	10.5	15.1	22.6	0.83	38.1
Larynx	C32	4026	6.5	2.9	4.0	7.5	0.24	87.7
Trachea, bronchus and lung	C33–C34	65 257	104.7	41.6	61.6	19.8	0.73	70.5
Skin, including melanoma	C43–C44	5425	8.7	3.7	5.3	4.6	0.11	94.2
Prostate	C61	47 318	75.9	29.4	43.5	8.4	0.21	85.4
Bladder	C67	13 287	21.3	8.6	12.5	10.3	0.32	83.6
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	11 713	18.8	8.7	12.2	11.5	0.37	74.9
Brain and nervous system	C70–C72	2425	3.9	2.6	3.0	18.8	0.37	70.4
Thyroid	C73	2336	3.7	2.2	2.8	6.5	0.22	89.4
Malignant lymphoma	C81–85, C96	10 511	16.9	8.4	11.3	13.4	0.50	87.1
Multiple myeloma	C88, C90	2613	4.2	1.7	2.5	21.9	0.76	75.6
All leukemias	C91–C95	6043	9.7	5.9	7.0	20.7	0.75	90.6
Female								
All sites	C00–C96	29 3431	448.3	196.7	263.8	15.0	0.46	73.6
Lip, oral cavity and pharynx	C00–C14	3943	6.0	2.4	3.3	13.6	0.46	80.5
Esophagus	C15	2990	4.6	1.7	2.3	18.8	0.59	73.3
Stomach	C16	37 109	56.7	20.3	28.6	15.9	0.47	78.9
Colon and rectum	C18–C20	45 958	70.2	25.6	35.9	13.9	0.41	78.4
Colon	C18	32 614	49.8	17.3	24.5	15.0	0.43	76.9
Rectum	C19–C20	13 344	20.4	8.3	11.4	11.2	0.38	82.4
Liver	C22	15 177	23.2	7.3	10.6	27.4	0.75	25.4
Gallbladder, etc.	C23–C24	10 859	16.6	4.4	6.6	27.9	0.82	41.1
Pancreas	C25	13 423	20.5	6.4	9.3	27.5	0.86	32.1
Larynx	C32	258	0.4	0.2	0.2	5.4	0.31	81.4
Trachea, bronchus and lung	C33–C34	28 145	43.0	14.9	21.1	21.1	0.64	67.5
Skin, including melanoma	C43–C44	5937	9.1	2.9	4.1	5.7	0.11	92.3
Breast	C50	56 289	86.0	52.0	67.1	5.1	0.20	89.7
Uterus	C53–C55	18 974	29.0	17.8	22.8	7.7	0.30	87.5

Continued

Table 1. *Continued*

Primary sites	ICD-10th	Estimated incidence	Crude rate[a]	Age-standardized rate[a]		Quality and completeness of reporting		Accuracy of diagnosis
				World population[b]	Japanese 1985 model population[b]	DCO/I[b] (%)	M/I	MV/I[b] (%)
Cervix uteri	C53	8867	13.5	9.2	11.7	5.3	0.28	89.7
Corpus uteri	C54	9104	13.9	8.1	10.5	4.3	0.18	91.9
Ovary	C56	8631	13.2	7.9	10.0	12.1	0.52	78.7
Bladder	C67	4174	6.4	1.8	2.7	17.4	0.46	74.3
Kidney, renal pelvis, ureter, etc.	C64–C66 C68	5223	8.0	3.0	4.2	16.7	0.47	69.5
Brain and nervous system	C70–C72	2526	3.9	2.5	2.8	17.0	0.27	66.8
Thyroid	C73	8420	12.9	7.9	10.1	4.5	0.12	91.3
Malignant lymphoma	C81–85 C96	8265	12.6	5.7	7.4	13.8	0.48	85.5
Multiple myeloma	C88, C90	2592	4.0	1.3	1.8	26.7	0.78	70.1
All leukemias	C91–C95	4168	6.4	3.9	4.4	19.3	0.73	90.0

ICD-10th, International Classification of Disease, 10th Revision; DCO/I, proportion of cases with the death certificate only to incident cases; M/I, number of mortality/number of incidence; MV/I, proportion of microscopically verified cases to incident cases; CIS, carcinoma *in situ*.
[a]Per 100 000 population.
[b]Arithmetic mean of proportion in the 21 cancer registries with high-quality data.

eligible registries (1–7). The extent of disease were evaluated by using staging criteria (i.e. cancer *in situ*, localized, regional lymph node metastases, direct extension to adjacent organs/tissues and distant metastasis), which were developed in Japan based on the SEER (11) to categorize properly according to the purpose in population-based cancer registry. We consider these staging criteria are suited for population-based cancer registry, because it is vital to observe cancer incidence over time, and across primary sites.

In 2007, the registries that were added as new high-quality data areas since the last estimation in 2006 were Iwate, Ibaraki, Gunma, Toyama, Shiga and Kyoto.

The incidence, crude rate, age-standardized rate and completeness and accuracy of the registries in 2007 are presented in Tables 1 (only invasive cancers) and 2 [cancers, including carcinoma *in situ* (CIS)]. The incidence in Japan in 2007 was estimated to be 704 090 (C00–C96). In males, the incidence was 410 659 and in females, it was 293 431. The age-standardized incidence rate (world population) for males and females was 285.9 and 196.7, respectively (Japanese 1985 model population: the incidence rate for males was 405.3 and females was 263.8). Table 2 shows the estimated incidence of cancer including CIS. CIS was observed predominantly in females with breast and cervical cancer. In particular, the incidence of cancer including CIS was double that of cancer without CIS in the cervix.

The distribution of cancer by the extent of disease at diagnosis is presented in Table 3. Pancreatic and lung cancers were generally more likely to be diagnosed at distant metastasis, compared with other cancers in both males and females. In the cervix, CIS accounted for a large part of the extent of disease at diagnosis (48.9%). The proportion of unknown tumor characteristics varied by the primary site. The proportion was comparatively higher for liver, gallbladder and prostate cancers, while it was lower in rectal and cervical cancers. We have to notice that these data are primarily influenced by the different methods of diagnosis and the prevalence of staging if an accurate diagnosis is not considered in some of the primary sites, for example, one primary site is more often diagnosed by tissue diagnosis than the other primary sites. In the data quality, distribution of the extent of disease might be affected by the different proportion of DCO cases which have no extent information in most cases.

The incidence according to the leading cancer types by sex is presented in Fig. 1. Among males, in 2007, the leading cancer site was in the stomach (19.5%), followed by the lung (15.9%) and the colon and rectum (15.4%), whereas in 2006, each respective cancer site accounted for 20.4%, 15.4% and 16.0% of population (7). Therefore, with respect to greater incidence, lung cancer was replaced by cancer in the colon and rectum in 2007. In 2007, the leading cancer

Table 2. Incidence (including CIS), completeness of reporting and accuracy of diagnosis in Japan, according to sex and primary site, 2007

Primary sites	ICD-10th	Estimated incidence	Crude rate[a]	Age-standardized rate[a]		Quality and completeness of reporting		Accuracy of diagnosis
				World population[b]	Japanese 1985 model population[b]	DCO/*I*[b] (%)	*M*/*I*	MV/*I*[b] (%)
Male								
All sites	C00–C96, D00–D09	427 949	686.8	298.8	423.2	13.9	0.47	75.7
Esophagus	C15, D001	17 711	28.4	12.9	17.8	12.3	0.56	81.7
Colon and rectum	C18–C20, D010–D012	73 560	118.1	53.0	74.2	9.5	0.31	84.9
Trachea, bronchus and lung	C33–C34, D021–D022	65 297	104.8	41.6	61.6	19.8	0.73	70.6
Skin, including melanoma	C43–C44, D030–D049	6269	10.1	4.3	6.1	4.0	0.10	94.7
Bladder	C67, D090	17 074	27.4	11.2	16.3	8.4	0.25	86.5
Female								
All sites	C00–C96, D00–D09	315 715	482.3	219.8	292.7	14.1	0.42	75.2
Esophagus	C15, D001	3129	4.8	1.7	2.4	18.2	0.56	74.2
Colon and rectum	C18–C20, D010–D012	51 457	78.6	29.4	41.0	12.7	0.37	80.1
Trachea, bronchus and lung	C33–C34, D021–D022	28 161	43.0	14.9	21.1	21.1	0.64	67.5
Skin, including melanoma	C43–C44, D030–D049	7425	11.3	3.6	5.1	4.6	0.09	93.4
Breast	C50, D05	60 986	93.2	56.9	73.4	4.7	0.19	90.3
Uterus	C53–C55, D06	27 822	42.5	30.3	37.6	5.5	0.20	90.6
Cervix uteri	C53, D06	17 715	27.1	21.7	26.5	3.0	0.14	93.7
Bladder	C67, D090	5095	7.8	2.3	3.4	14.9	0.37	77.9

[a]Per 100 000 population.
[b]Arithmetic mean of proportion in the 21 cancer registries with high-quality data.

Table 3. Distribution of extent of disease at diagnosis for the 21 selected cancer registries, 2007

Primary sites	ICD-10th	Incidence in the 21 registries (except DCO)	Carcinoma *in situ*		Localized		Regional lymph node metastases, direct extension to adjacent organs/tissues		Distant metastasis		Unknown, other	
			n	%	*n*	%	*n*	%	*n*	%	*n*	%
Male												
All sites	C00–C96, D00–D09	142 903	7027	4.9	54 336	38.0	29 865	20.9	24 589	17.2	27 086	19.0
Lip, oral cavity and pharynx	C00–C14	3359	—	—	1054	31.4	1576	46.9	166	4.9	563	16.8
Esophagus	C15, D001	5902	258	4.4	1551	26.3	2017	34.2	1096	18.6	980	16.6
Stomach	C16	27 033	—	—	13 335	49.3	5565	20.6	4493	16.6	3640	13.5
Colon and rectum	C18–C20, D010–D012	25 117	3997	15.9	9279	36.9	5374	21.4	3506	14.0	2961	11.8
Colon	C18	13 046	—	—	5769	44.2	3116	23.9	2191	16.8	1970	15.1
Rectum	C19–C20	8257	—	—	3503	42.4	2252	27.3	1315	15.9	1187	14.4
Liver	C22	8520	—	—	4253	49.9	1291	15.2	806	9.5	2170	25.5
Gallbladder, etc.	C23–C24	3150	—	—	628	19.9	1149	36.5	652	20.7	721	22.9
Pancreas	C25	4618	—	—	279	6.0	1420	30.7	2093	45.3	826	17.9
Larynx	C32	1483	—	—	911	61.4	315	21.2	26	1.8	231	15.6
Trachea, bronchus and lung	C33–C34, D021–D022	20 470	16	0.1	4548	22.2	5795	28.3	6920	33.8	3191	15.6
Skin, including melanoma	C43–C44, D030–D049	2467	407	16.5	1419	57.5	189	7.7	49	2.0	403	16.3
Prostate	C61	17 151	—	—	9290	54.2	2323	13.5	1871	10.9	3667	21.4
Bladder	C67, D090	6572	1566	23.8	3229	49.1	497	7.6	193	2.9	1087	16.5
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	4004	—	—	2068	51.6	660	16.5	644	16.1	632	15.8
Thyroid	C73	879	—	—	264	30.0	431	49.0	63	7.2	121	13.8
Female												
All sites	C00–C96, D00–D09	104 186	8395	8.1	39 246	37.7	23 596	22.7	14 275	13.7	18 674	17.9
Lip, oral cavity and pharynx	C00–C14	1337	—	—	539	40.3	521	39.0	43	3.2	234	17.5
Esophagus	C15, D001	929	51	5.5	227	24.4	320	34.5	161	17.3	170	18.3
Stomach	C16	12 201			5608	46.0	2642	21.7	2044	16.8	1907	15.6
Colon and rectum	C18–C20, D010–D012	17 794	2169	12.2	6215	34.9	4391	24.7	2809	15.8	2210	12.4
Colon	C18	11 134	—	—	4390	39.4	3053	27.4	2076	18.6	1615	14.5
Rectum	C19–C20	4583	—	—	1815	39.6	1333	29.1	732	16.0	703	15.4
Liver	C22	3897	—	—	2064	53.0	477	12.2	346	8.9	1010	25.9
Gallbladder, etc.	C23–C24	3057	—	—	525	17.2	1038	34.0	771	25.2	723	23.7
Pancreas	C25	3701	—	—	253	6.8	1218	32.9	1506	40.7	724	19.6

Larynx	C32	97	—	—	55	56.7	25	25.8	3	3.1	14	14.4
Trachea, Bronchus and lung	C33–C34, D021–D022	8212	6	0.1	2709	33.0	1726	21.0	2486	30.3	1285	15.7
Skin including melanoma	C43–C44, D030–D049	2539	567	22.3	1429	56.3	120	4.7	37	1.5	386	15.2
Breast	C50, D05	22 011	1767	8.0	10 922	49.6	5579	25.4	938	4.3	2805	12.7
Uterus	C53–C55 D06	9894	3036	30.7	3553	35.9	1745	17.6	525	5.3	1035	10.5
Cervix uteri	C53, D06	6196	3027	48.9	1429	23.1	1009	16.3	222	3.6	509	8.2
Corpus uteri	C54	3553	—	—	2106	59.3	715	20.1	274	7.7	458	12.9
Ovary	C56	3010	—	—	835	27.7	1114	37.0	488	16.2	573	19.0
Bladder	C67, D090	1805	384	21.3	814	45.1	189	10.5	92	5.1	326	18.1
Kidney, renal pelvis, ureter, etc.	C64–C66, C68	1814	—	—	898	49.5	334	18.4	289	15.9	293	16.2
Thyroid	C73	2786	—	—	1087	39.0	1231	44.2	129	4.6	339	12.2