

Hospital based cancer registry in Cipto Mangunkusumo hospital Jakarta

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Abstrak

Registrasi kanker berbasis rumah sakit di RSUPN Cipto Mangunkusumo, Fakultas Kedokteran Universitas Indonesia, telah dimulai tahun 1997, bertujuan untuk memberi data bagi program pengendalian kanker dan membantu perencanaan rumah sakit. Maka/ah ini menyajikan registrasi kanker sepanjang tahun 1997-1998. Data dari semua pasien kanker yang baru terdiagnosis dicatat pada Formulir Registrasi Kanker. Yang didata ialah identitas pasien, demografi dan kultur, penilaian tumor dan usia, serta penatalaksanaan. Terdapat 2144 (0.48%) penderita kanker diantara 444.178 pasien baru yang berobat ke RSCM. Perbandingan perempuan dan laki-laki ada/ah 1.7 : 1. Usia terbanyak pada perempuan ada/ah 35-44 tahun, pada /aki-laki 45-54 tahun. Usia rata-rata saat terdiagnosis umumnya lebih muda dibanding senter lainnya. Pada perempuan, kanker terbanyak ada/ah lqnker serviks, disusul o/eh payudara dan nasofaring sedang pada /aki-/aki terbanyak nasofaring, sumsum tu/ang dan hati. Pada anak, terbanyak ada/ah leukemia limfositik akut, leukemia non limfositik akut, retinob/astoma dan nefroblastoma. Pendidikan penderita perempuan /ebih rendah dibanding /aki-laki. Perempuan penderita kanker serviks, kulit, sumsum tu/ang, kelenjar getah bening dan /aki-/aki penderita kanker sumsum tulang, kelenjar getah bening dan mata mempunyai pendidikan yang lebih rendah. Sebanyak 85% diagnosis ditegakkan secara mikroskopik. Jum/ah kanker stadium awa/ lebih rendah dibanding stadium /anjut (47% vs 53%). Pada tahun 1998 terapi awal yang paling banyak diberikan ada/ah berturut-turut radioterapi, bedah dan kemoterapi. Hanya 45% pasien yang mempero/eh terapi da/am 3 bu/an pertama sete/ah diagnosis.

Abstract

The Hospital Based Cancer Registry in Registry in Cipto Mangunkusumo National Center General Hospital (RSCM), the teaching hospital of the Faculty of Medicine University of Indonesia, was set up in 1997. Its aims were to provide information on the magnitude of cancer problems, and data for focussing cancer control programs, to facilitate the follow up and to help plan hospital facilities. This paper presents a summary of the cancer registry data collected during the period of 1997-1998. Data from all newly diagnosed cancer patients was recorded in Cancer Registration Forms by the oncology doctors. The collected items of information were patient's identification, demographic and cultural items, the tumor and its investigations, and the treatment. There were 2144 (0.48%) cancer patients among 444,178 new patients treated in RSCM hospital. The female to male patients ratio was 1.7 : 1. The age peaked in females within 35-44 years, and in males within 45-54 years. In general, the mean age at diagnosis of various cancer was younger compared to other centers. In females, the most common cancers were cervical, breast, and nasopharyngeal, and in males, they were nasopharyngeal, bone marrow, and liver cancers. In children, the most common cancers were acute lymphocytic leukemia, acute non-lymphocytic leukemia, retinoblastoma, and nephroblastoma. Female patients had lower educational

level than males. Females with cervical, skin, bone marrow, lymph nodes cancer and males with bone marrow, lymph nodes and eye malignancy had lower educational level. There were 85% patients diagnosed by microscopic examination. The number of early stage cancer was lower compared to late stage cases (47% vs 53%). In 1998, the most frequent initial treatment was radiotherapy, followed by surgery and chemotherapy, and only 45% patients received treatments within 3 months after diagnosis.

Keywords: Cancer registry, site, age, education, staging, diagnosis, treatment

The incidence of cancer in Indonesia has been observed to increase every year. According to the estimation of the Ministry of Health the incidence rate of cancer was about 100 per 100,000 people. As the people's awareness about this dreaded disease is

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growing, it is of interest to see that several social organization for cancer control have been established such as Nederlands Indische Kanker Instituut in 1933 in Bandung, Cancer foundations in several cities in Indonesia, Wisnuwardhana Cancer Foundation in Surabaya, and Indonesian Cancer Foundation (Yayasan Kanker Indonesia) in 1977 in Jakarta, followed by establishment of its branches in 27 provinces in Indonesia.²

Since 1989 the Ministry of Health has actively participated in Cancer Control and instructed to establish a hospital-based Integrated Cancer Control Team (ICCT) in every big hospital. In 1996, such a team has been established in Cipto Mangunkusumo National Center General Hospital (RSCM) which functions as the teaching hospital of Medical Faculty of University of Indonesia and the top referral hospital in the Western part of Indonesia by the director of the hospital and with the approval of the Dean of Medical Faculty, University of Indonesia. One of the tasks of this team is to perform hospital based cancer registry, which will provide information on the magnitude of cancer problems and data for focussing cancer control, i.e. the total number of patients annually, site of cancers, data on survival of patients, the ratio between localized and advanced cases at the time of diagnosis.³ In addition, to facilitate the follow up of all patients and to furnish information about the demands made by cancer patients on the facilities, equipment and human resources of the hospital.

This paper presents a summary of the cancer registry data collected during the period of 1997-1998. Ten most frequent tumors were given according to gender. The data was analyzed against age, clinical and histopathological diagnosis, extent of diseases and the nature of initial treatment given to cancer patients in 1998. They were also evaluated against demographical data in particular educational background and age.

MATERIALS AND METHODS

The Hospital Based Cancer Registry in Cipto Mangunkusumo Hospital was officially established in 1997. To ensure an easy collection of data from different department which were treating cancer, a Cancer Registration Form (CRF) was developed based on the form issued by the Ministry of Health in 1995.

Data from all newly diagnosed cancer patients who visited Cipto Mangunkusumo Hospital from January 1, 1997 until December 31, 1998 was recorded in

CRF. Table 1 shows the items of information which should be collected.⁴

Table 1. Items of Patients Information which should be collected in the Registration Form

No. Items of Information	No. Items of Information
1. Name of Hospital	15. Type of Patient
2. Code of Hospital	16. Incidence Date
3. Medical Record Number	17. Most Valid Diagnosis
4. Cancer Registry Number	18. Clinical Diagnosis
5. Name of Patient	19. Primary Site: Topography (ICD-0)
6. Number of Identity Card	20. Histological Diagnosis
7. Gender	21. Morphology (ICD-0)
8. Date of Birth	22. Clinical Extent of Disease before Treatment
9. Address	23. Multiple Primary Neoplasm
10. Racial Group	24. Date of Death
11. Religion	25. Cause of Death (!CD)
12. Marital Status	26. Name of Oncologist
13. Education	27. Name of Supervisor
14. Occupation	

The form were sent to cancer treating departments and were filled and completed by the treating medical, surgical or radiation oncology doctors and approved by their supervisors. Then these forms were forwarded to the Hospital Cancer Registry for further processing: coding, verification, analysis and reporting.^{5,6} For the coding of all registered tumors, the second edition of the International Classification of the Diseases for Oncology (ICD-0) was used.⁷

In this study the level of education from all patients was recorded and was used to examine whether there was a differential change in cancer prevalence across educational categories. It was categorized into illiterate (unable to read and write), able to read and write, elementary school graduate (six years of schooling completed), junior high school (9 years of schooling completed), senior high school graduate (twelve years of schooling completed), academy or university graduate (more than 15 years of schooling completed). Beginning from 1998 on, the information about the nature of initial therapy and the data on which therapy commenced were also collected.

RESULTS AND DISCUSSION

A descriptive study was completed from January 1, 1997 until December 31, 1998. There were 444.178 new patients suffered from various diseases who visited Cipto Mangunkusumo Hospital, among them 2144 (0.48%) were cancer patients, consisting of 798 (0.18%) males and 1346 (0.30%) females. Sukardja reported 2.95% cases of the total admitted patients⁹ and according to the study of Partoatmodjo et al,¹⁰ it

was 1.2%. The female to male ratio was 3.4:2 (1346:798), the similar ratio was reported by Sukardja but it was 2:3 in Singapore.¹¹

Age and Site of Malignant Neoplasm

The number of cases by primary site and age in females and males are shown in table i and ii (appendix), respectively. Cancer could be found at any age. The age ranged from several months to over 65 years, with a preponderance of cases between 35 - 64 years, with a peak within 35 - 44 years in females,

while in males the preponderance of cases was more than 45 years of age and a peak within 55 - 64 years (figure 1). The study of Sukardja⁹ showed preponderance of cases between 35 - 64 years and a peak within 45 - 54 years in males as well as in females. These ages were younger than in the developed countries, over 75 years in the Philippine¹² and in Singapore.¹¹ The number of cases occurred in children before 5 years of age were 95 (4.4%) and in the age group of 5 - 14 years were 128 (6%). The number of males was higher than females. These figures were similar to that in Singapore.¹¹

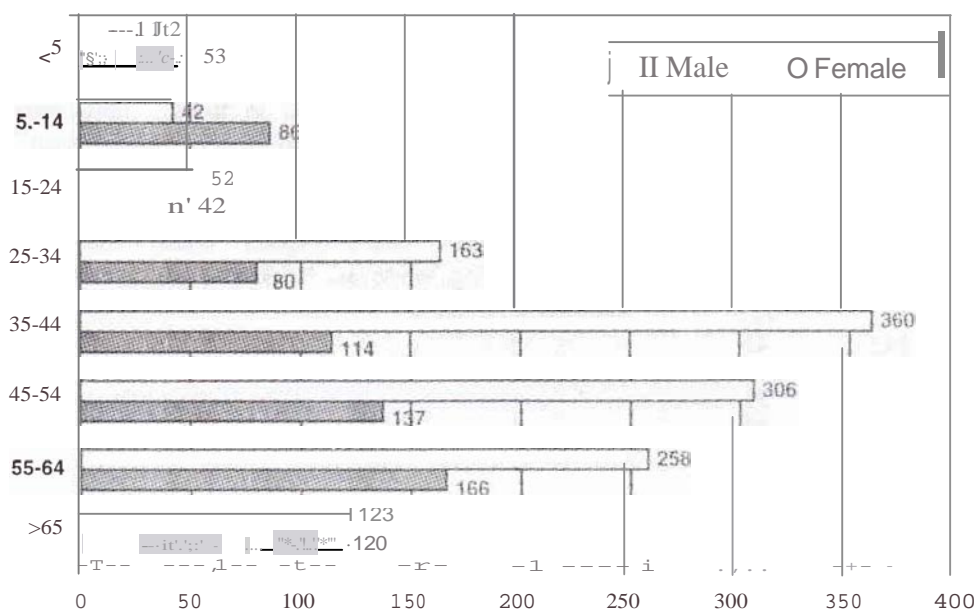


Figure 1. Age distribution of malignant neoplasm in 2144 patients : 798 males and 1346/emales

Table 2. Number of New Cases in Ten Most Frequent Cancers by Age and Site

Topography	Age								Total	Rf*)
	< 5	5-14	15-24	25-34	35-44	45-54	55-64	> 65		
Cervix uteri	0	1	1	33	164	150	94	39	482	22.48
Nasopharynx	0	6	16	23	55	57	27	11	195	9.09
Breast	0	0	2	23	61	41	37	8	172	8.02
Bone marrow	45	64	12	12	13	10	13	2	171	7.98
Colorectal	0	0	5	19	21	21	31	17	114	5.32
Lymph nodes	6	10	7	14	28	16	18	9	108	5.04
Skin	3	1		3	9	12	35	38	102	4.76
Liver	0		0	5	14	20	29	21	90	4.2
Thyroid	0	0	6	22	18	13	13	5	77	3.59
Eye	12	9	1	6	5	13	9	7	62	2.89
Total	66	92	51	160	388	353	306	157	1573	

*) Rf = Relative frequency

The number of ten most frequent cancers was 1573 cases, representing 73% (1573 : 2144) of all cancers (table 2). The most frequent cancer encountered was cervical (22.5%), followed by naso-pharyngeal (9%), breast (8%), bone marrow (8%), colorectal (5.3%), lymph nodes (5%), skin (4.8%), liver (4.2%), thyroid (3.6%) and eye (2.9%). Cervical carcinoma and breast cancers were more frequent in the age group of 35-44 years, nasopharyngeal cancer in 45-54 years, bone marrow in 0-15 years and colorectal in 55-64 years. The data collected by Sukardja in East Java shpwed that the most frequent cancer was cervical cancer, followed by liver and breast cancer.⁹

Table 3. Mean and Median Age at Diagnosis in Ten Most Frequent Cancers

Cancer	Total Cases	Mean	Median
Cervix uteri	482	47.8	47
Nasopharynx	195	42.9	43
Breast	172	45.5	44
Bone marrow	171	18.5	10
Colorectal	114	48.5	49.5
Lymph nodes	110	39.3	42
Skin	102	58.2	60
Liver	90	54.2	57
Thyroid	77	41.6	39
Eye	62	34.9	36.5

*in years

The mean age at diagnosis of cervical caRcer was 47.8 years and breast cancer was 45.5 years (table 3). In USA these cancers were diagnosed at older age,^{14,15} while the mean age of cervical cancer and breast cancer was 54 years and 57 years respectively . According to Ramli,¹⁹ the mean age of breast cancer was 46.9 years. The median age of nasopharyngeal carcinoma was 43 years, younger than the study of Sutjipto et al who found 50 years as the median age.¹⁶

In females the total number of ten most frequent cancers was 1102 (82%), and the most frequent cancer encountered was cervical cancer and the second was breast cancer (table 4). In other countries of Asia like the Philippines breast, cervical and lung cancers were the most common ones, and in India,¹⁷ they were cervical, breast and esophageal cancers. But in Japan¹³ and USA, cancer of the cervix has been steadily decreased. In USA, it only ranked as cancer number eight.¹⁴ In Japan¹³ and Singapore¹¹ breast cancer was also increasing while in USA it was 32% of all cancers in females.¹⁵

Table 4. Number of New Cases in Ten Most Frequent Cancers in Females by Age and Site

Topography	Age								Total	Rf
	<5	5-14	15-24	25-34	35-44	45-54	55-64	> 65		
Cervix uteri	0			33	164	150	94	39	482	35.8
Breast	0	0	2	23	61	41	36	8	171	12.7
Nasopharynx	0		5	7	20	21	7	2	63	4.68
Throid	0	0	4	19	16	11	9	4	63	4.68
Colorectal	0	0	5	7	11	11	17	11	62	4.61
Skin				2	4	5	21	27	62	4.61
Bone marrow	20	13	3	6	6	4	7	0	59	4.38
Ovary	0	2	8	10	18	8	10	3	59	4.38
Lymph nodes	2	2	3	6	16	8	7		45	3.34
Placenta	0	0	7	21	8	0	0	0	36	2.67
Total	23	20	39	134	324	259	208	95	1102	

Table 5. Number of New Cases in Ten Most Frequent Cancers in Males by Age and Site

Topography	Age								Total	Rf
	< 5	5-14	15-24	25-34	35-44	45-54	55-64	> 65		
Nasopharynx	0	5	11	16	35	36	20	9	132	16.5
Bone marrow	25	51	9	6	7	6	6	2	112	14
Liver	0	1	0	4	10	18	18	19	70	8.77
Lymph nodes	4	8	4	8	12	8	11	8	63	7.89
Colorectal	0	0	0	12	10	10	14	6	52	6.52
Skin	2	0	0	1	5	7	14	11	40	5.01
Eye	9	7		0	3	6	7	4	37	4.64
Bladder	0	0	1	3	3	8	14	7	36	4.51
Prostate gland	0	0	0	0	0	2	7	20	29	3.63
Kidney	5		0	3	2	2	3	2	18	2.26
Total	45	73	26	53	87	114	88	88	589	

The number of ten most frequent cancers in males was 589 represented 74% of all cancers in males (table 5). Nasopharyngeal carcinoma (NPC) was the most frequent cancer encountered, followed by bone marrow and liver malignancy. Nasopharyngeal malignancy was more frequent in the age group of 45-54 years, bone marrow in 0-14 years and liver in the age group of >65 years. The number of NPC's cases

in males were 132 and in females were 63 cases. Male to female ratio was 2.1:1. According to the study of Sutjipto et al, the number of NPC in the year of 1980-1981 in our hospital was 219 cases, 154 males and 65 females,¹⁶ but the male to female ratio was similar. This cancer ranks number five in Singapore and number seven in the Philippines but in Indonesia it remains the most frequent cancer in males.

Table 6. Number of New Cases in Four Most Frequent Cancers in Children by Age and Site

ICD-0	Age Site	< 5			5-14			Total		
		F	M	All	F	M	All	P	M	All
CD21	Bone Marrow	20	25	45	13	51	64	33	76	109
	Acute leukemia, NOS	0	0	0	0	1	1	0	1	1
	Acute lymphocytic	12	23	35	8	38	46	20	61	81
	Acute non-lymphocytic	6	2	8	5	10	15	11	12	23
	Chronic lymphocytic	0	0	0	0	0	0	0	0	0
	Chronic myelogenous	2	0	2	0	2	2	2	2	4
C770-779	Lymph nodes	2	4	6	2	8	10	4	12	16
	Burkitt's lymphoma, NOS	0	0	0	1	1	2	1	1	2
	Hodgkin's disease, NOS	0	0	0	0	2	2	0	2	2
	Non Hodgkin's lymphoma	1	4	5	1	4	5	2	8	10
	Carcinoma, undifferentiated	1	0	1	0	0	0	1	0	1
	Squamous cell carcinoma	0	0	0	0	1	1	0	1	1
C690-699	Eye	3	9	12	2	7	9	16	5	21
	Neuroblastoma	0	0	0	0	2	2	0	2	2
	Squamous cell carcinoma	0	0	0	0	0	0	0	0	0
	Rhabdomyosarcoma	0	1	1	0	5	5	1	5	6
	Retinoblastoma	3	8	11	2	0	2	11	2	13
C6-49	Kidney	3	5	8	6	1	7	6	9	15
	Nephroblastoma, NOS	2	5	7	4	1	5	7	5	12
	Neoplasia, malignant	1	0	1	0	0	0	1	0	1
	Carcinoma, NOS	0	0	0	1	0	5	0	1	1
	Clear cell sarcoma of kidney	0	0	0	1	0	1	0	1	1

F = Female

M = Male

NOS = Not Otherwise Specified

In children, malignancy of the bone marrow, eye, lymph nodes and kidney were the most common cancers [table 6 and table iii (appendix)]. The male of female ratio was 1.6 : 1. Among 109 cases of bone marrow malignancy, there were 105 (96.3%) cases of acute leukemia consisting of 81 (74.3%) cases of acute lymphocytic leukemia, and 23 (21.1%) cases of acute non-lymphocytic leukemia. There were 4 cases of chronic myelocytic leukemia. Thirty five (35) patients of acute lymphocytic leukemia aged less than 5 years and 48 cases were in the age group of 5- 14 years (table 6). Male to female ratio was 3: 1; the mean age at the time of diagnosis was 6 years (table 7). These figures were similar to data in the Philippines¹² and USA.²⁰ The most common tumor of the eye was retinoblastoma (62%) in which female to male ratio was 5.5:1, and the mean age at the time of diagnosis was 4 years. There were 11 (84.6%) patients aged below 5 years. In Surabaya, the number of retinoblastoma patients were 29.5% of all eye cancers and female to male ratio was 1.5:1.²¹ In USA, the number of females was higher than males, the age peaked at 17 months, and 90% of the cases occurred below 5 years of age.²² The most frequent cancer of the kidney was nephroblastoma (80%), female to male ratio was 1.4:1, the mean age at the time of diagnosis was 3 years, and the age peaked less than 5 years. In USA, the mean age at diagnosis was 2.5 years.²³ Among the malignancy of lymph nodes, non-Hodgkin's lymphoma was the most frequent one (22.2%). The mean age at the time of diagnosis was 5

years and male to female ratio was 4:1. In USA, the age peaked at 9-10 years, and it was 2.5 times greater: in male than in females.¹⁴

Table 7. Mean and Median Age at Diagnosis in Four Most Frequent Cancers

Cancer	Total cases	Mean [■]	Median [■]
Acute lymphocytic	81	6	5
Acute non-lymphocytic	23	6	6
Retinoblastoma	13	4	3
Nephroblastoma, NOS	12	3	3
Non-Hodgkin's lymphoma	10	5	4

* in years

Education

Figure 2 presents the number of new cases according to educational level and gender in 2144 patients, 798 males and 1346 females. There were 280 (35%) male patients who belonged to lower educated group (illiterate-elementary) and 375 (47%) to higher educated group (high school-university), but in females, there were 643 (48%) patients with low level of education and 509 (38%) patients with high level of education. It is clear that the number of male patients in the higher educated group was greater than in the lower, while among female patients the number of lower educated group was greater than the higher one.

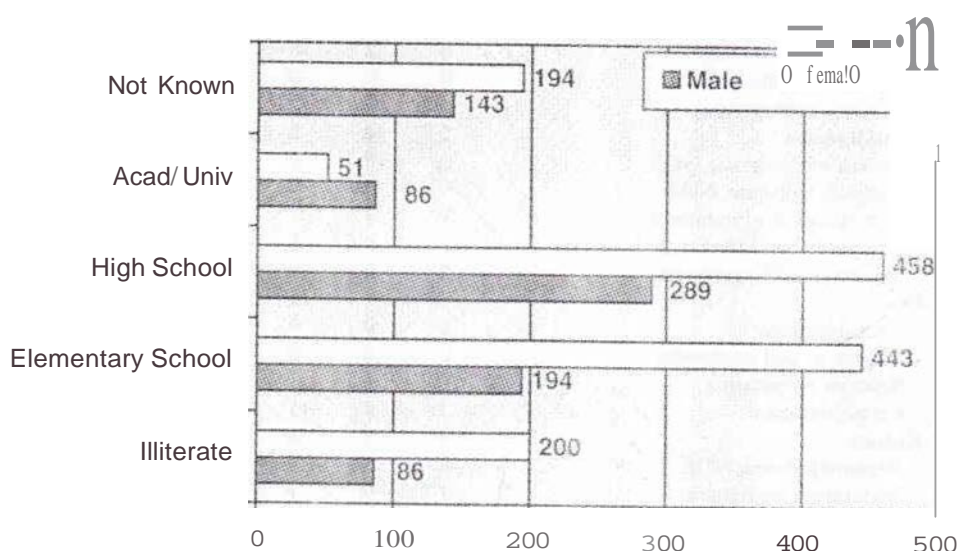


Figure 2. Distribution of New Cancer Cases according to education and gender

Table 8. Education Level in Ten Most Frequent Cancers in Females

Topography	Illiterate	Elementary School	High School	Academy/ University	Not Known	Total
Cervix uteri	73	218	154	10	27	482
Breast	5	30	82	11	43	171
Nasopharynx	4	21	25	2	11	63
Thyroid	4	17	21	4	17	63
Colorectal	8	14	31	5	4	62
Skin	17	23	15	0	7	62
Bone marrow	20	10	6	0	23	59
Ovary	9	22	22	4	2	59
Lymph nodes	1	12	6	1	25	45
Placenta	2	8	23	3	0	36
Total	143	375	385	40	159	1102
Percentage	13	34.0	34.9	3.6	14.4	100

In females, the number of patients with cervical (60%), skin (64%), ovary (52%) and bone marrow (50%) cancer was higher in lower educated group, but more patients with breast, thyroid, nasopharyngeal and colorectal cancers were found in higher educated group (table iv and 8). Figure 3 shows the most frequent cancers in females with low level of education. Low educational level of cancer patients was a significant risk factor for cervical¹⁸ and breast cancers.¹⁹

Table v and table 9 show the number of new cases by primary sites and education in all and ten most

frequent cancers in males respectively. The number of patients with bone marrow, lymph nodes and eye malignancies was higher in lower educated group, while the other numbers were in higher educated group. Most of patients with bone marrow malignancy were acute leukemia (104/112 – 93%) with the mean age at diagnosis was in the preschool period (6 years of age), so they could not be included in lower educated group. The similar fact also occurred in eye malignancy.

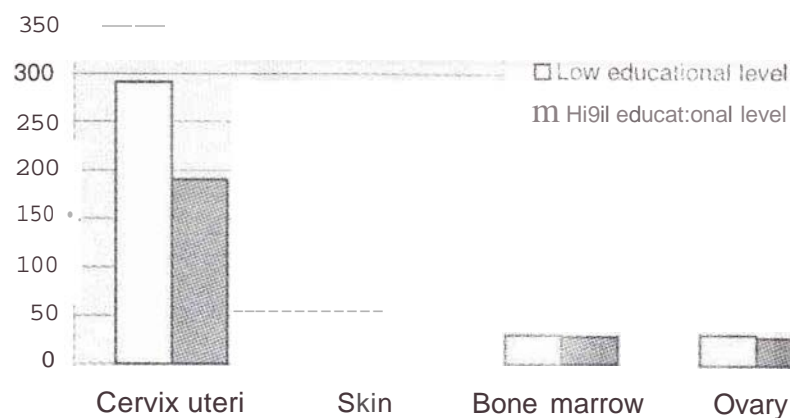


Figure 3. Four most frequent cancers in females with low educational level

Table 9. Education Level in Ten Most Frequent Cancers in Males

Topography	Illiterate	Elementary School	High School	Academy/ University	Not Known	Total
Nasopharynx	5	31	60	14	22	132
Bone marrow	30	36	14		31	112
Liver	4	9	23	10	24	70
Lymph nodes	6	13	14	2	28	63
Colorectal	0	14	30	4	4	52
Skin	4	12	17	5	2	40
Eye	24	2	8	1	2	37
Bladder		11	17	6	1	36
Prostate		10	8	10	0	29
Kidney	4		8	4		18
Total	79	139	199	57	115	589
Percentage	13.4	23.6	33.8	9.7	19.5	100

Clinical Extent of the Disease

Table vi presents the number of 1617 new cases by primary sites and staging. The number of cancer patients with stage 0 (in situ) was 3.46%, stage I (localized) 43.85%, stage II (direct extension) 22.02%, stage III (regional lymph nodes involvement) 21.83% and stage IV (distant metastases) 8.84%. There were 171 cases of bone marrow malignancy consisting of 131 (76.6%) cases of acute leukemia, 24

(14%) cases of chronic leukemia, 1 (0.6%) leukemia NOS, 6 (3.5%) multiple myeloma, 6 (3.5%)

polycythemia vera and 3 (1.8%) others. The data of ten most frequent cancers as presented in table 10 showed two different patterns, namely tumors mostly found in the early stage (stage 0-I) and tumors mostly found in the late stage (stage II-IV). The former one consisted of cervical, skin, thyroid, ovary and eye (figure 4), while the latter were nasopharynx, breast, colorectal, lymph nodes and liver cancers (figure 5).

Table 10. Primary site and staging in ten most frequent cancers

Extension	St. 0	St. 1	St. 2	St. 3	St. 4	Total
Cervix Uteri	14	234	162	17	8	435
Nasopharynx	0	8	19	141	4	172
Breast	5	73	6	53	24	161
Colorectal	4	42	20	14	17	97
Lymph nodes	0	5	8	93	4	110
Skin	6	60	15	8		90
Liver	0	6	2	81		90
Thyroid gland	0	45	6	18	4	73
Eye	5	23	15	4	5	52
Ovary	4	25	18	2	3	52
Total	38	521	271	71	71	1332
Percentage	2.9	39.1	20.3	5.3	5.3	100

St = Staging

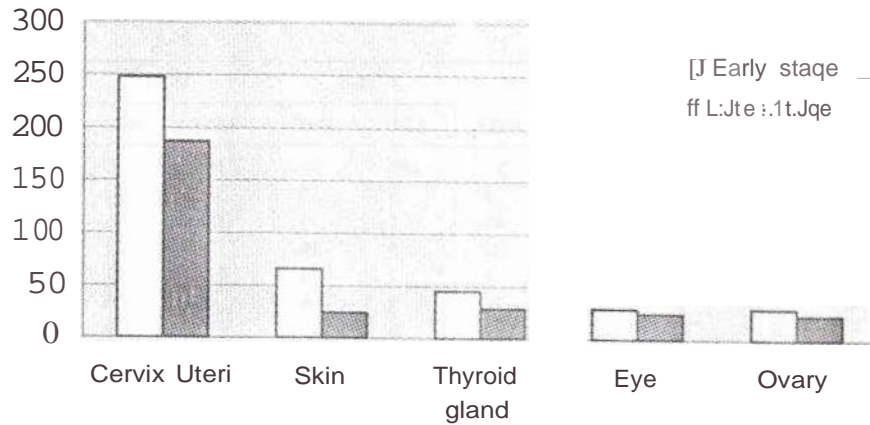


Figure 4. Five most frequent cancers found in the early stage

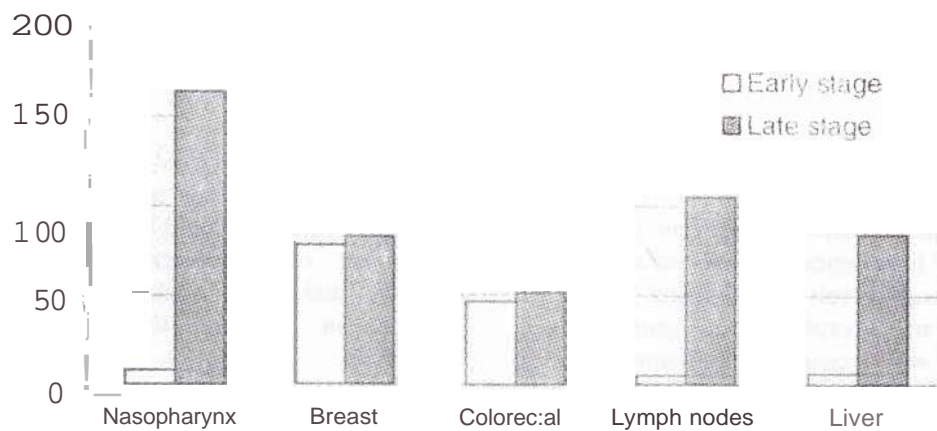


Figure 5. Five most frequent cancers found in the late stage

Table vii shows the number of all cancer patients by sites, education and staging. The number of stage 0 and II cases with low educational level was greater than the high one (3.2% vs 1%, 13% vs 10%), while the number of stage I, III and IV cases were lower in patients with low educated group compared to the high educated one (21% vs 22.9%, 8.7% vs 12%, 4.1% vs 5.6%). Table 11 shows the correlation of low and high educational level and staging in 1015 cases of the nine most frequent cancers. The number of late stage cases (stage II-IV) in cervical cancer was higher in the lower educated group compared to the higher educated group (122 vs 55). The same comparison was found in lymph nodes (20 vs 8), skin (11 vs 10) and eye malignancies (21 vs 3). This condition might be related to the fact that a great number of patients had low level of education. Good education would contribute to a good knowledge about health care and to a greater chance for having a job. On the other hand, low educational level would result in unemploy-

ment and low socio-economical status. Consequently, the health care including cancer screening would be neglected.

The Most Valid Basis of Diagnosis of Cancer

Table viii shows the most valid basis of diagnosis for selected sites, 1366 (63.7%) cases were diagnosed by histopathology of primary tumor, 251 (11.7%) by histopathology of metastases, 265 (12.4%) were diagnosed by cytology/hematology, 72 (3.3%) were diagnosed by clinical only, 173 (8.1%) by clinical investigations (X-ray, USG etc), 11 (0.1 %) by exploratory surgery, and 6 (0.03%) by biochemical or immunological test. Thus, there were 88% cases which were diagnosed by microscopic examinations and, in fact, was higher than in Singapore (76.4%),¹¹ and in the Philippines (52.5% in males and 63.2% in females).

Table 11. Nine most frequent cancers by staging and educational level

ICD-0	Description	St-0		St-I		St-I!		St-III		St-IV		Total
		LEG*	HEG**	LEG	HEG	LEG	HEG	LEG	HEG	LEG	HEG	
C539	Cervix Uteri	7	5	134	91	108	47	10	5	4	3	414
C110-119	Nasopharynx	0	0	2	4	4	12	50	74	1	3	150
C500-509	Breast		3	13	45		4	13	26	4	15	125
C180-218	Colorectal		3	14	27	5	14	2	12	6	10	94
C770-770	Lymph nodes	0	0	3	1	4	4	13	3	3	1	32
C440-449	Skin	4	1	34	21	9	6	2	4	0	0	81
C2200	Liver	0	0	2	4	0	2	0	2	3		14
C739	Thyroid gland	0	0	10	21	4		5	10	3		55
C690-699	Eye	3	2	14	7	13	2	4	0	4		50
	Total	16	14	226	221	148	92	99	136	28	35	1015
	Percentage	1.6	1.4	22.3	22	15	9.1	9.8	13.4	2.8	3.4	100

* LEG = Low educated group (illiterate, able to write and read, elementary)

** HEG = High educated group (junior and senior high school, academy)

Histological Types

Table ix shows the number of cases in ten most frequent cancers by histological type. As the diagnosis of the hepatoma was merely made based on USG examination, it became exceptional and consequently, the ovarian cancer was chosen as tumor number ten. The most frequent histologic subtype of malignancies in cervix the was keratinizing squamous cell carcinoma (60.4%), in nasoprahy was undifferentiated carcinoma (79%), in the breast was invasive ductal carcinoma (58.1%), in the bone marrow was acute lymphoblastic leukemia (50.3%), in the colorectum was adenocarcinoma (68.4%), in the skin was basal cell carcinoma (50%), in the thyroid was papillary carcinoma (63.6%) in eye was squamous cell carcinoma (25.8%), and in the ovary was adenocarcinoma (35.6%). This tabulation data can be used as guides on histological analytical study or for future research purposes. The number of squamous cell carcinoma in cervical cancer was significantly higher than adenocarcinoma of the cervix. In USA, the annual incidence of squamous carcinoma has been declining steadily but adenocarcinoma has not. The decline might be related to the increased utilization of PAP smear, the improvement in vaginal hygiene, and changing sexual practices.²⁵

Initial Treatment

The most frequent initial treatments among 1188 cancer patients was radiotherapy given to 339 (28.5%)

cases, followed by surgical treatment on 326 (27.4%) cases, and chemotherapy on 117 (9.8%) cases (table 12). These findings would bring a great burden to the department of radiotherapy and surgery. Good planning and effort should be made to prevent shortage in operating theaters and radiotherapy equipment.

Table 12. Nature of Initial Treatment on 1188 new cancer patients in 1998

Treatment	Number	Percentage
Radiotherapy	339	28.5
Surgical treatment	326	27.4
Chemotherapy	117	9.8
Hormonal therapy	11	0.9
Combination	8	0.7
Immuno therapy	385	32.4
Total	1188	100

From figure 6, it can be seen than 491 (41%) cases were treated within than 1 month, 29 (2%) cases within 1 month, 11 (1%) cases within 2 months, 3 (0.2%) cases within 3 months and the delayed treatment consisted more than 4 months after diagnosis. There were also 602 (51%) cases which were not known. The delayed treatment group and the not known status might be due to the poor socio-economical condition of the patients, and it would increase the risk of treatment failure.

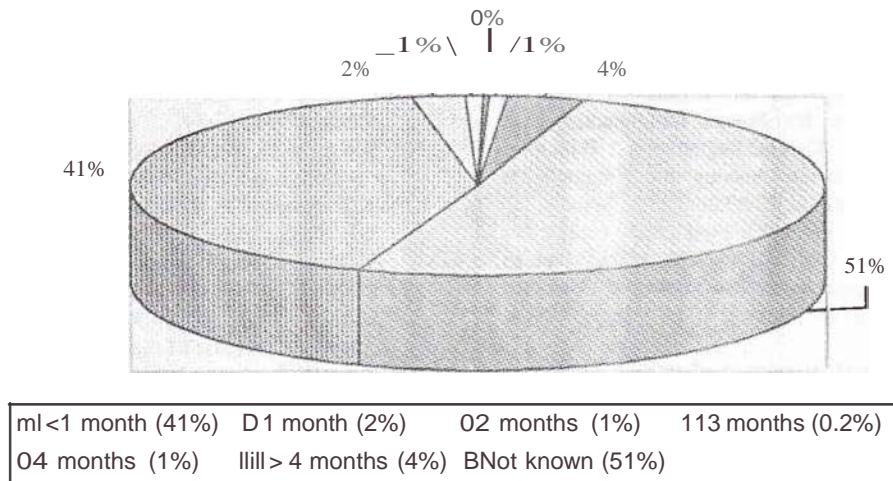


Figure 6. Time between the data of diagnosis and the initiation of cancer therapy

CONCLUSION

1. During the period of 1997-1998 out of 444.178 patients of all patients treated in Cipto Mangunkusumo hospital were 2144 (0.48%) cancer patients. The number of female patients was 1.7 times greater than the males.
2. The age peaked at 35-44 years in females, and at 45-54 years in males. In general, the mean age at diagnosis of various cancers was younger compared to other centers.
3. In females the most common malignancies were cervical, breast and nasopharyngeal cancers, while in males they were nasopharyngeal, bone marrow and liver cancers. In children the most common malignancies were acute lymphocytic leukemia, acute non-lymphocytic leukemia, retinoblastoma, nephroblastoma and non-Hodgkin's lymphoma.
4. The number of female patients with low educational level was greater than the male ones. Female patients with cervical, skin, bone marrow, ovary, lymph nodes malignancies and male patients with bone marrow, lymph nodes and eye malignancies had lower educational level.
5. The number of the late stage cancers in cervical, lymph nodes, skin and eye cancers was higher in lower educated group compared to higher educated group.
6. The majority of patients (85%) was diagnosed by microscopic examination. The number of the early stage cancers was lower compared to the late stage cancers (47% vs 53%).
7. The most frequent initial treatment given to cancer patients was radiotherapy, followed by surgery and chemotherapy.
8. In 1998, only 45% patients received treatments within 3 months after diagnosis.

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Appendix

Table ia. Numbers of new cases by primary site and age in females

ICD-0	Description	<5	5-14	15-24	25-34	35-44	45-54	55-64	>65	Total	Rf
C019	Base of tongue	1	0	0		0	0			4	0.3
C020-029	Oau parts of tongue	0	0	0	2	3	6			13	0.97
C041-049	Floor of mouth	0	0		0	0	0	0	0	1	0.07
C050-059	Palate	0			0		2	3	0	8	0.59
C060-069	Oau parts of mouth	0	0		0	0	2	0		4	0.3
C070-079	Parotid gland	0		1	0	2	0	1	0	5	0.37
C080-089	Oau major salivary glands	0	0	0	0	0	0		0		0.07
C090-099	Tonsil	0	1	1	0	0	0		0	3	0.22
C100-109	Oropahrynx	0	0	0	0	0	0	0	0	0	0
C110-119	Nasopharynx	0		5	7	20	21	7	2	63	4.68
C150-159	Esophagus	0	0	0	0	0	0	1		2	0.15
C160-169	Stomach	0	0	2	0	0	0		0	3	0.22
C170-179	Small intestine	0	0	0	0		2		0	4	0.3
C180-218	Colorectal	0	0	5	7	11	11	17	11	62	4.61
C220	Liver	0	0	0	1	4	2	11	2	20	1.49
C239	Gall bladder	0	0	0	0	1	0	0	0		0.07
C241	Arnpulla of Vater	0	0	0	1	0	0	0	0		0.07
C250	Head of pancreas	0	0	0	0	0	1	0	0		0.07
C300	Nasal cavity	0	1	1	0	0	2	0	0	4	0.3
C310	Maxillary sinus	1	0		1	0		2	2	8	0.59
C340	Bronchus and lung	0	0	1	0	0	0		3	5	0.37
C398	Overlap.lesion of resp.syst. and intrathoracal organs	0		0	0	0	0	0	0		0.07
C402	Long bones of lower limb				0	0	0	0	0	3	0.22
C410-419	Bone, joint and articular cartilage of oau sites	0		0		3		1		8	0.59
C421	Bone marrow	20	13	3	6	6	4	7	0	59	4.38
C424	Hematopoietic system	0	0	0	0	0	0	0	0	0	0
C440-449	Skin	1		1	2	4	5	21	27	62	4.61
C480-482	Retroperitoneum and peritoneum	2	0	0	1	0	2	0		6	0.45
C490-499	Connective, subcutaneous and other soft tissues	2	0	0		0		0	0	4	0.3
CS00-509	Breast	0	0	2	23	61	41	36	8	171	12.7
C510-519	Vulva	0	0	0		3	3	3	3	13	0.97
C529	Vagina	0	0	0	1	7	5	6	4	23	1.71
C539	Cervix uteri	0	1		33	164	150	94	39	482	35.8
C541-549	Corpus uteri	0	0	0	2	0	6	9	2	19	1.41
C559	Uterus	0	0	0	2	2	2		1	8	0.59
C569	Ovary	0	2	8	10	18	8	10	3	59	4.38
C589	Placenta	0	0	7	21	8	0	0	0	36	2.67
C649	Kidney	3	6	0	2	0	0	1	0	12	0.89
C679	Bladder	0	0	0	2	4	0	0	2	8	0.59
C690-699	Eye	3	2	0	6	2	7	2	3	25	1.86
C700-709	Meninges	0	0	0	2	0	0	0	0	2	0.15
C710-719	Brain	0	2	1	0	1	2	1	0	7	0.52
C720-729	Spinal cord, cranial nerves, and others parts of CNS	3	2	0	0		0	0	0	6	0.45
C730-739	Thyroid gland	0	0	4	19	16	11	9	4	63	4.68
C750-759	Others endocrine glands and related structures		0			0	0	0	0	3	0.22
C760-768	Other and illdefined sites	2	3	0	1		0		0	8	0.59
C778-779	Lymph nodes	2	2	3	6	16	8	7	1	45	3.34
All sites		42	42	52	163	360	306	258	123	1346	100
Percentage		3.1	3.1	3.9	12.1	26.7	22.7	19.2	9.1	100	

Oau = Others and Unspecified

CNS = Central Nerves System

Rf = Relative frequency

Table ib. Numbers of new cases by primary site and age in males

ICD-0	Description	<5	5-14	15-24	25-34	35-44	45-54	55-64	>65	Total	Rf
C019	Base of tongue		2	0	1				0	5	0.63
C020-029	Oau parts of tongue	0	0	0	0			3	0	6	0.75
C041-049	Floor of mouth	0	0	0	0			0	0	1	0.13
C050-059	Palate	0	0	0	2			0	1	4	0.5
C060-069	Oau parts of mouth	0	0	0	0				2	3	0.38
C070-079	Parotid gland	0	0	0	3			1	2	10	1.25
C080-089	Oau major salivary glands	0	0	0	0			0	0	1	0.13
C090-099	Tonsil	0	0	0	0			1		5	0.63
C100-109	Oropahrynx	0	0	0	0			0		4	0.5
C110-119	Nasopharynx	0	5	11	16			20	9	132	16.5
C150-159	Esophagus	0	0	0	0			2	2	5	0.63
C160-169	Stomach	0	0	0	0			5	0	9	1.13
C170-179	Small intestine	0	0	0				0	1	3	0.38
C180-218	Colorectal	0	0	0	12			14	6	52	6.52
C220	Liver	0	1	0	4			18	19	70	8.77
C239	Gall bladder	0	0	0	0			2	1	3	0.38
C241	Ampulla of Vater	0	0	0	0			0	0	1	0.13
C250	Head of pancreas	0	0		0			4		7	0.88
C300	Nasal cavity	0	0	2	1			3	2	8	
C310	Maxillary sinus	0	0	1	0			2	3	6	0.75
C340	Bronchus and lung	0	0	0	0			6	5	17	2.13
C398	Overlap.lesion of resp. syst. and intrathoracal organs	0	0	0	0				0		0.13
C402	Long bones of lower limb	0	2	1		0		1	0	6	0.75
C410-419	Bone, joint and articular cartilage of oau sites	0		0		0		0	1	4	0.5
C421	Bone marrow	25	51	9	6	7	6	6	2	112	14
C424	Hematopoietic system	0	1	0	0	0	0	0	0	1	0.13
C440-449	Skin	2	0	0		5	7	14	11	40	5.01
C480-482	Retroperitoneum and peritoneum		0	0		1	0	1		5	0.63
C490-499	Connective, subcutaneous and other soft tissues	2	3		2	2	2	4	2	18	2.26
C500-509	Breast	0	0	0	0	0	0	1	0		0.13
C609	Penis	0	0		2	2	3	2	4	14	1.75
C619	Prostate gland	0	0	0	0	0	2	7	20	29	3.63
C629	Descended testis	2		1	5	3	2	0	0	14	1.75
C649	Kidney	5		0	3	2	2	3	2	18	2.26
C679	Bladder	0	0		3	3	8	14	7	36	4.51
C690-699	Eye	9	7	1	0	3	6	7	4	37	4.64
C700-709	Meninges	0	0	0		1	0	0	0	2	0.25
C710-719	Brain	0	1	3	1	0	4	4	0	13	1.63
C720-729	Spinal cord, cranial nerves, and others parts of CNS	0	0	0	0	0	0		0		0.13
C730-739	Thyroid gland	0	0	2	3	2	2	4	1	14	1.75
C750-759	Others endocrine glands and related structures	0		2	1	0		0	0	5	0.63
C760-768	Other and ill defined sites	2	1	1	1		3	2	1	12	1.5
C778-779	Lymph nodes	4	8	4	8	12	8	11	8	63	7.89
	All sites	53	86	42	80	114	137	166	120	798	100
	Percentage	6.6	10.8	5.3	10	14.3	17.2	20.8	15	100	

Oau = Others and Unspecifjed

CNS = Central Nerves System

Table 11. Number of new cancer cases by primary sites and age

ICD-0	Description	<5	5-14	15-24	25-34	35-44	45-54	55-64	>65	Total	Rf
C019	Base of tongue	2	2	0	2	0	0	2	1	9	0.42
C020-029	Oau parts of tongue	0	0	0	2	6	6	4	1	19	0.89
C041-049	Floor of mouth	0	0	1	0	0	1	0	0	2	0.09
C050-059	Palate	0	1	1	2	2	2	3	1	12	0.56
C060-069	Oau parts of mouth	0	0	1	0	0	2	1	3	7	0.33
C070-079	Parotid gland	0	1	1	3	5	1	2	2	15	0.7
C080-089	Oau major salivary glands	0	0	0	0	1	0	1	0	2	0.09
C090-099	Tonsil	0	1	1	0	0	3	2	1	8	0.37
CI00-109	Oropahrynx	0	0	0	0	3	0	0	1	4	0.19
CI 10-119	Nasopharynx	0	6	16	23	55	57	27	11	195	9.09
CI50-159	Esophagus	0	0	0	0	0	1	3	3	7	0.33
C160-169	Stomach	0	0	2	0	2	2	6	0	12	0.56
CI70-179	Small intestine	0	0	0	1	2	2	1	1	7	0.33
CI80-218	Colorectal	0	0	5	19	21	21	31	17	114	5.32
C220	Liver	0	1	0	5	14	20	29	21	90	4.2
C239	Gall bladder	0	0	0	0	1	0	2	1	4	0.19
C241	Ampulla of Vater	0	0	0	1	0	1	0	0	2	0.09
C250	Head of pancreas	0	0	1	0	0	2	4	1	8	0.37
C300	Nasal cavity	0	1	3	1	0	2	3	2	12	0.56
C310	Maxillary sinus	1	0	2	1	0	1	4	5	14	0.65
C340	Bronchus and lung	0	0	1	0	1	5	7	8	22	1.03
C398	Overlap.lesion of resp. syst. and intrathor. organs	0	1	0	0	0	0	0	0	2	0.09
C402	Long bones of lower limb	1	3	2	1	0	1	0	0	9	0.42
C410-419	Bone, joint and articular cartilage of oau sites	0	2	0	2	3	2	1	2	12	0.56
C421	Bone marrow	45	64	12	12	13	10	13	2	171	7.98
C424	Hematopoietic system	0	1	0	0	0	0	0	0	1	0.05
C440-449	Skin	3	1	1	3	9	12	35	38	102	4.76
C480-482	Retroperitoneum and peritoneum	3	0	0	2	1	2	1	2	11	0.51
C490-499	Connective, subcutaneous and other soft tissues	4	3	1	3	2	3	4	2	22	1.03
C500-509	Breast	0	0	2	23	61	41	37	8	172	8.02
C510-519	Vulva	0	0	0	1	3	3	3	3	13	0.61
C529	Vagina	0	0	0	1	7	5	6	4	23	1.07
C539	Cervix uteri	0	1	1	33	164	150	94	39	482	22.48
C541-549	Corpus uteri	0	0	0	2	0	6	9	2	19	0.89
C559	Uterus	0	0	0	2	2	2	1	0	8	0.37
C569	Ovary	0	2	8	10	18	8	10	3	59	2.75
C589	Placenta	0	0	7	21	8	0	0	0	36	1.68
C609	Penis	0	0	1	2	2	3	2	4	14	0.65
C619	Prostate gland	0	0	0	0	0	2	7	20	29	1.35
C629	Descended testis	2	1	1	5	3	2	0	0	14	0.65
C649	Kidney	8	7	0	5	2	2	4	2	30	1.4
C679	Bladder	0	0	1	5	7	8	14	9	44	2.05
C690-699	Eye	12	9	1	6	5	13	9	7	62	2.89
C700-709	Meninges	0	0	0	3	0	0	0	0	4	0.19
C710-719	Brain	0	3	4	1	0	6	5	0	20	0.93
C720-729	Spinal cord, cranial nerves, and others parts of CNS	3	2	0	0	1	0	1	0	7	0.33
C730-739	Thyroid gland	0	0	6	22	18	13	13	5	77	3.59
C750-759	Others endocrine glands and related structures	1	1	3	2	0	1	0	0	8	0.37
C760-768	Other and ill defined sites	4	4	1	2	2	3	3	1	20	0.93
C778-779	Lymph nodes	6	10	7	14	28	16	18	9	108	5.04
	All sites	95	128	94	243	474	443	424	243	2144	100
	Percentage	4.43	5.97	4.38	11.3	22.1	20.7	19.8	11.3	100	

Oau = Others and Unspecified

CNS = Central nervous system

Table iii. Numbers of new cases by primary site and age in children

IC D-O	Age Site	<5			5-14			Total		
		F	M	All	F	M	All	F	M	AU
C019	Base of tongue	1	1	2	0	2	2	3	1	4
C050-059	Palate	0	0	0	1	0	1	0	1	1
C070-079	Parotid gland	0	0	0	1	0	1	0	1	1
C090-099	Tonsil	0	0	0	1	0	1	0	1	1
Cl 10-119	Nasopharynx	0	0	0	1	5	6	5		6
C220	Liver	0	0	0	0	1	1	1	0	
C300	Nasal cavity	0	0	0	1	0	1	0	1	
C310	Maxillary sinus	1	0	1	0	0	0	0	1	
C398	Overlap.lesion of resp. syst. and intrathoracal organs	0	0	0	1	0	1	0		
C402	Long bones of lower limb	1	0	1		2	3	2	2	4
C410-419	Bone, joint and articular cartilage of oau sites	0	0	0		1	2	1	1	2
C421	Bone marrow									
	Acute leukemia, NOS	0	0	0	0	1	1	0	1	1
	Acute lymphocytic	12	23	35	8	38	46	20	61	81
	Acute non lymphocytic	6	2	8	5	10	15	11	12	23
	Chronic lymphocytic	0	0	0	0	0	0	0	0	0
	Chronic myelogenous	2	0	2	0	2	2	2	2	4
C424	Hematopoietic system	0	0	0	0	1	1	1	0	1
C440-449	Skin	1	2	3	1	0	1	2	2	4
C480-482	Retroperitoneum and peritoneum	2	1	3	0	0	0	1	2	3
C490-499	Connective, subcutaneous and other soft tissues	2	2	4	0	3	3	5	2	7
C539	Cervix uteri	0	0	0		0	1	0		1
C569	Ovary	0	0	0	2	0	2	0	2	2
C629	Descended testis	0	2	2	0			3	0	3
C649	Kidney									
	Nephroblastoma, NOS	2	5	7	4	1	5	7	5	12
	Neoplasma, malignant	1	0	1	0	0	0	1	0	1
	Carcinoma, NOS	0	0	0		0	5	0	1	1
	Clear cell sarcoma of kidney	0	0	0		0		0	1	1
C690-699	Eye									
	Neuroblastoma	0	0	0	0	2	2	0	2	2
	Squamous cell carcinoma	0	0	0	0	0	0	0	0	0
	Rhabdomyosarcoma	0	1		0	5	5	1	5	6
	Retinoblastoma	3	8	11	2	0	2	11	2	13
C710-719	Brain	0	0	0	2	1	3	1	2	3
C720-729	Spinal cord, cranial nerves, and others parts of CNS	3	0	3	2	0	2	0	5	5
C750-759	Others endocrine glands and related structures		0		0					2
C760-768	Other and ill defined sites	2	2	4	3		4	3	5	8
C770-779	Lymph nodes									
	Burkitt's lymphoma, NOS	0	0	0	1	1	2	1	1	2
	Hodgkin's disease, NOS	0	0	0	0	2	2	0	2	2
	Non-Hodgkin's lymphoma	1	4	5	1	4	5	2	8	10
	Carcinoma, undifferentiated, NOS	1	0	1	0	0	0	1	0	1
	Squamous cell carcinoma, OS	1	1	2	1	1	2	0	1	1
All sites		42	53	95	42	86	128	84	139	223
Percentage		44	56	100	33	67	100	38	62	100

Table iv. Numbers of new cases by primary site and education in females

ICD-0	Description	A	E	JH	SH	Ac	NK	Total	
C019	Base of tongue	1	0	0	I	I	0	I	4
C020-029	Oau parts of tongue	0	1	6	2	3	1	0	13
C041-049	Floor of mouth	0	0	I	0	0	0	0	1
C050-059	Palate	2	1	0	4	1	0	0	8
C060-069	Oau parts of mouth	2	1	0	0	█	0	0	4
C070-079	Parotid gland	0	0	1	2	1	0	1	5
C080-089	Oau major salivary glands	1	0	0	0	0	0	0	█
C090-099	Tonsil	0	0	1	█	1	0	0	3
C100-109	Oropahrynx	0	0	0	0	0	0	0	0
C110-119	Nasopharynx	4	5	16	8	17	2	█	63
C150-159	Esophagus	0	█	0	0	0	0	█	2
C160-169	Stomach	0	0	1	0	2	0	0	3
C170-179	Small intestine	0	0	1	2	█	0	0	4
C180-218	Colorectal	8	2	12	10	21	6	3	62
C220	Liver	3	1	1	2	3	0	10	20
C239	Gall bladder	0	0	0	0	1	0	0	1
C241	Ampulla of Vater	0	0	0	0	0	0	1	█
C250	Head of pancreas	0	1	0	0	0	0	0	1
C300	Nasal cavity	0	0	2	0	0	0	2	4
C310	Maxillary sinus	2	0	2	0	█	0	3	8
C340	Bronchus and lung	0	0	█	0	█	2	█	5
C398	Overlap.lesion of resp. syst. and intrathoracal organs	1	0	0	0	0	0	0	█
C402	Long bones of lower limb	0		1	█	0	0	0	3
C410-419	Bone,joint and artilcular cartilage of oau sites	0		2	0	3	█	1	8
C421	Bone marrow	20	4	6	2	4	0	23	59
C424	Hematopoietic system	0	0	0	0	0	0	0	0
C440-449	Skin	17	6	17	7	8	0	7	62
C480-482	Retroperitoneum and peritoneum	2	█	0	0	3	0	0	6
C490-499	Connective,subcutaneousand other soft tissues	0	1	█	█	█	0	0	4
C500-509	Breast	5	5	25	24	59	11	42	171
C510-519	Vulva	4	█	█	3	2	█	1	13
C529	Vagina	6	3	2	5	5	█	█	23
C539	Cervix uteri	73	89	129	79	75	10	27	482
C541-549	Corpus uteri	█	2	6	4	█	█	4	19
C559	Uterus	1	2	2	█	█	0	█	8
C569	Ovary	9	9	13	8	13	4	3	59
C589	Placenta	2	4	4	9	14	3	0	36
C649	Kidney	7	3	0	█	0	0	1	12
C679	Bladder	0	0	4	█	0	3	0	8
C690-699	Eye	13	█	5	3	█	0	2	25
C700-709	Meninges	0	0	█	0	█	0	.0	2
C710-719	Brain	1	0	2	█	█	1	█	7
C720-729	Spinal cord, cranial nerves, and others parts of CNS	3	█	█	1	0	0	0	6
C730-739	Thyroid gland	4	4	13	3	18	4	17	63
C750-759	Others endocrine glands and related structures	1	0	0	0	2	0	0	3
C760-768	Other and illdefined sites	5	0	1	█	0	0	█	8
C778-779	L).m[!h nodes	█	1	█	2	4	0	26	45
All sites		199	152	292	189	271	51	192	1346
Percentage		15	11.3	21.7	14	20	3.8	14.3	100

█=Illiterate
A=Able to read and write
E=Elementary

IH= Junior High School
SH=Senior High School
AC=Academy/University
NK=Not Known

Table v. Numbers of new cases by primary site and education in males

ICD-0	Description	A	B	JH	SH	Ac	NK	Total
C019	Base of tongue	3	1	0	0	0	0	5
C020-029	Oau parts of tongue	0	0	2	2		0	6
C041-049	Aoor of mouth	0	0	0	0	0	0	
C050-059	Palate	0	0	2	0	2	0	4
C060-069	Oau parts of mouth	0	0	█	█	0	0	3
C070-079	Parotid Gland	0	0	2	0	3	2	10
C080-089	Oau major salivary glands	0	0	0	0	█	0	█
C090-099	Tonsil	0	0	2	1	0	█	5
C100-109	Oropahrynx	0	0	2		█	0	4
C110-119	Nasopharynx	5	4	27	21	39	14	22
C150-159	Esophagus	0	0	0	2		█	5
C160-169	Stomach	0	1	1	0	4	3	0
C170-179	Small intestine	0	0	0		2	0	0
C180-218	Colorectal	0	5	9	12	18	4	4
C220	Liver	4	█	8	7	16	10	24
C239	Gall bladder	0	0	0	0	█	2	0
C241	Ampulla of Yater	0	0	0	0	█	0	█
C250	Head of pancreas	0	0	2		2		7
C300	Nasal cavity	0		5	0	0	█	8
C310	Maxillary sinus	0	0	2	0	2	0	2
C340	Bronchus and lung	0	0	3	0	8	3	3
C398	Overlap.lesion of resp. syst. and intrathoracal organs	0	0	0		0	0	0
C402	Long bones of lower limb	0	0	2	2	2	0	0
C410-419	Bone, joint and artilcular cartilage of oau sites		0	0	0		2	0
C421	Bone marrow	30	14	22	9	5		31
C424	Hematopoietic system	0	0	0	0	0	█	█
C440-449	Skin	4	5	7	6	11	5	2
C480-482	Retroperitoneum and peritoneum				0	1	0	5
C490-499	Connective, subcutaneous and other soft tissues		2	2	2	5		5
C500-509	Breast	0	0	0	0	█	0	0
C609	Penis	0	█	4	3	5	0	█
C619	Prostate gland		2	8	0	8	10	0
C629	Descended testis	2	0	3	3	6	0	0
C649	Kidney	4	0	█	0	8	4	
C679	Bladder		3	8	6	█	6	
C690-699	Eye	17	7	2	4	4		2
C700-709	Meninges	0	0	0	0	0		2
C710-719	Brain	1			3	3		3
C720-729	Spinal cord, cranial nerves, and others parts of CNS	0	0	0	0	█	0	0
C730-739	Thyroid gland		0	0	3	5	3	2
C750-759	Others endocrine glands and related structures		0	0	0	2		5
C760-768	Other and illdefined sites	3	2	2	2			█
C778-779	Lymph nodes	6	2	█	5	9	2	28
	All sites	86	53	142	98	191	87	141
	Percentage	10.8	6.64	18	12	23.9	10.9	17.67

I=Illiterate

A=Able to read and write

E=Elementary

JH= Junior High School

SH=Senior High School

Ac=Academy/U niversity

NK=Not Knowm

Table vi. Numbers of new cases by primary site and staging in 1617 cases

ICD-0	description	St-0	St-1	St-2	St-3	St-4	Total
C019	Base of Tongue	0	3	1	3	0	7
C021-029	Others and unspecified parts of tongue	0	7	3	8	0	18
C041-049	Aoor of mouth	■	0	0	1	0	2
C050-059	Palate	0	3	7	1	0	11
C060-069	Others and unspecified parts of mouth	0	4	2	1	0	7
C079	Parotid gland	1	4	3	4	1	13
C080-089	Others and unspecified major salivary glands	0	1	1	0	0	2
C090-099	Tonsil	0	3	0	5	0	8
C100-109	Oropharynx	0	0	1	3	0	4
C110-119	Nasopharynx	0	8	19	141	4	172
C150-159	Esophagus	0	2	1	2	1	6
C160-169	Stomach	0	7	0	1	2	10
C170-179	Small intestine	0	1	2	2	2	7
C180-218	Colorectal	4	42	20	14	17	97
C220	Liver	0	6	2	■	■	10
C239	Gall bladder	0	2	■	0	■	4
C241	Ampulla of Yater	0	0	0	0	■	1
C250	Head of pancreas	1	2	1	1	2	7
C300	Nasal cavity	0	5	4	2	0	11
C310	Maxillary sinus	1	4	5	2	2	14
C340	Bronchus and lung	0	3	5	7	7	22
C398	Overlapp less of respiratory syst & intrathoracal organs	1	0	1	0	0	2
C402	Long bones of lower limb	3	4	■	0	■	9
C410-419	Bone,joint,artilcular cartilage of oau site	1	4	1	1	2	9
C424	Hematopoietic system	0	0	0	0	1	1
C440-449	Skin	6	60	15	8	1	90
C480-482	Retroperitoneum and peritoneum	0	0	3	1	5	9
C490-499	Connective.Subcutaneous and other soft tissues	0	11	4	2	2	19
CS00-509	Breast	5	73	6	53	24	161
G510-519	Vulva	1	4	5	2	0	12
C529	Vagina	0	6	1	1	0	8
C539	Cervix uteri	14	234	162	17	8	435
C541-549	Corpus uteri	0	8	5	2	1	16
C559	Uterus	0	2	■	0	2	5
C569	Ovary	4	25	18	2	3	52
C589	Placenta	3	21	0	0	2	26
C609	Penis	0	5	2	5	1	13
C619	Prostate gland	0	12	2	0	15	29
C629	Descended testis	1	3	2	4	4	14
C649	Kidney	1	7	8	2	7	25
C679	Bladder	2	21	7	7	3	40
C690-699	Eye	5	23	15	4	5	52
C700-709	Meninges	0	4	0	0	0	4
C?10-719	Brain	0	15	2	0	2	19
C720-729	Spinal cord.cranial nerves and other parts of CNS	1	2	0	0	0	3
C730-739	Thyroid gland	0	45	6	18	4	73
C750-759	Others endocrine glands and related structures	0	5	1	0	2	8
C760-768	Other and ill defined sites	0	3	2	6	3	14
C770-779	LmEh nodes	0	5	8	19	4	36
	All sites	56	709	356	353	143	1617
	Percentage	3.46	43.85	22.02	21.83	8.84	100

St. 0 = in situ

St. 1 = localized

St. 2 = direct extension

St. 3 = regional

St. 4 = distant metastases

Bone marrow was excluded, as it consisted of 131 cases of acute and 24 chronic leukemia, 1 leukemia NOS, 6 cases of multiple myeloma, 6 cases of polycythemia vera, 3 other cases

Tabel vii. Numbers of new cases by primary site, education and staging in 1484 cases

ICD-0 Description	Stage 0					Stage I					Stage II					Stage III					Total										
	A	E	J	S	Ac	A	E	J	S	Ac	A	E	J	S	Ac	A	E	J	S	Ac											
C019 Base of tongue	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	6						
C021-029 Oau parts of tongue	0	0	0	0	0	0	0	0	3	1	3	0	0	0	0	0	1	0	1	0	0	0	0	0	0	18					
C041-049 Floor of mouth	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2						
C050-059 Palate	0	0	0	0	0	0	0	1	2	0	2	0	1	2	2	0	0	0	1	0	0	0	0	0	11						
C060-069 Oau parts of mouth	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7						
C079 Parotid gland	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	1	0	0	0	2	1	1	0	11						
C080-089 Oau maj. salivary gl.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
C090-99 Tonsil	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	3	0	1	0	0	0	7						
C100-109 Oropahrynx	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	4						
C110-119 Nasopharynx	0	0	0	0	0	0	2	1	2	1	2	1	4	5	3	8	7	35	21	42	11	0	0	0	150						
C150-159 Esophagus	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	4						
C160-169 Stomach	0	0	0	0	0	0	0	1	0	4	2	0	0	0	0	0	0	1	0	0	0	0	0	1	10						
C170-179 Small intestine	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	7						
C180-218 Colorectal	0	1	0	2	1	0	5	4	5	9	14	4	2	0	3	2	12	0	0	2	3	6	3	0	94						
C220 Liver	0	0	0	0	0	1	0	1	2	2	0	0	0	0	0	2	0	0	0	1	1	1	1	1	14						
C239 Gall bladder	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
C241 Ampulla of Yater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1						
C250 Head of pancreas	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	6						
CJ00 Nasal cavity	0	0	0	0	0	1	4	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	8						
C310 Maxillary sinus	0	0	0	0	0	1	0	2	0	0	0	1	0	3	0	1	0	0	0	0	0	0	0	1	9						
C340 Bronchus and lung	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	1	0	0	1	0	4	1	0	18						
C398 Overlappless of respir syst	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2						
C402 L. bones of low.limb	0	1	0	0	0	0	0	1	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	1	8						
C410 Bone, joint, and art. cartilage of oau site	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	1	0	0	0	0	0	0	0	1	9						
C421 Bone marrow	8	5	3	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	21						
C424 Hematopoietic system.NOS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
C440-449 Skin	3	0	1	1	0	0	8	8	18	6	12	3	0	0	3	4	2	0	1	1	0	0	3	1	81						
C480-482 Retroperitoneum and pentoneum	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9						
C490-499 Connective,SubcuLan and other softtissues	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	15						
C500-509 Breast	0	0	0	0	3	0	1	11	5	34	6	0	0	1	1	0	3	2	8	13	11	2	1	0	125						
C510-519 Vulva	0	0	0	0	0	1	2	0	0	1	0	0	1	1	2	0	1	1	0	0	0	0	0	0	8						
C539 Vagina	0	0	0	0	0	0	2	0	3	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	8						
C539 Cervix Uteri	2	4	1	1	4	0	0	0	0	0	4	28	27	53	22	20	5	4	0	6	2	3	0	0	414						
C541-549 Coff>USuteri	0	0	0	0	0	0	0	4	2	0	1	0	1	2	0	0	1	0	0	1	0	0	0	0	13						
C559 Uterus	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4						
C569 Ovary	0	2	0	1	1	0	2	4	5	6	6	2	5	0	5	2	3	2	1	0	0	0	1	0	51						
C589 Placenta	0	0	1	1	1	0	2	0	6	9	3	0	0	0	0	0	0	0	0	0	1	0	0	0	26						
C609 Penis.NOS	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	3	2	0	0	0	12						
C619 Prostate gland	0	0	0	0	0	1	2	0	2	4	0	0	0	0	2	0	0	0	0	0	0	0	0	5	29						
C629 Descended testis	1	0	0	0	0	0	0	2	0	0	1	0	1	0	0	0	0	1	2	0	0	0	0	4	14						
C649 Kidney	1	0	0	0	0	6	0	0	0	0	1	1	1	1	0	3	0	0	0	1	0	2	0	0	23						
C679 Bladd r	0	0	0	0	1	1	4	7	5	0	2	2	1	1	0	0	3	0	2	1	0	0	0	1	39						
C690-699 Eye	0	0	1	1	0	11	2	3	3	1	9	3	1	2	0	0	2	1	1	0	0	0	3	1	50						
C700 Meninges	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
C710-719 Brain	0	0	0	0	0	0	3	2	5	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	15						
C720-729 Spinal cord, cran.n. and oth parts of CNS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3						
C7W Thyroid gland	0	0	0	0	0	3	1	6	5	12	4	1	1	2	0	0	0	2	3	1	6	3	0	2	55						
C750-759 Others endocrine gl and rel structures	0	0	0	0	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7						
C760-768 Others and ill defined sites	0	()	()	()	0	0	2	0	0	0	0	0	0	0	0	0	2	2	0	2	0	0	0	()	13						
C770-779 Lvmph nodes	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3	0	2	2	9	0	3	0	2	()	32						
All sites	18	14	12	7	13	2	87	77	145	113	172	49	61	41	90	52	72	18	26	18	55	55	97	27	16	11	28	18	42	21	1484
Percentage	1.2	1.0	0.8	0.5	0.9	0.16	5.2	4.8	9.8	7.6	11.6	3.3	4.1	2.8	6.1	3.4	4.5	1.2	1.8	1.2	3.7	3.7	6.5	1.8	1.1	2.0	1.2	3.0	1.4	100	

S1.0 - in situ, SL 1 = localized, SL 2 = direct extension, St. 3 = regional lymph nodes involvement, St. 4 = distant metastases
 I=illiterat. A=Able to read and write. E=Elementary. JH=Junior High School, SH=Senior High School, Ac= Academy/University
 Cases with unknown education level (159) as well as cases with unknown clinical extent of disease (501) were excluded

Table ix. Numbers of histologically confirmed new cases in ten most frequent cancers by histologic type

ICD-0	Site	Morphology	No	%
C 539	Cervix (n=482)	Carcinoma, Nos•	19	3.9
		Squamous cell carcinoma, keratinizing	291	60.4
		Adenocarcinoma	84	17.4
		Squamous cell carcinoma, non keratinizing	68	14.1
		Others	20	4.1
C 110-119	Nasopharynx (n=195)	Undifferentiated carcinoma	154	79
		Carcinoma, NOS	21	10.8
		Lymphoma malignant	3	1.5
		Squamous cell carcinoma, keratinizing	2	1
		Squamous cell carcinoma, non keratinizing	2	1
		Others	13	6.7
C 500-509	Breast (n=172)	Non Invasive Intraductal carcinoma	6	3.5
		Invasive Invasive ductal carcinoma	100	58.1
		Invasive lobular carcinoma	10	5.8
		Squamous cell carcinoma	2	1.2
		Mucinous carcinoma	1	0.6
		Papillary carcinoma	1	0.6
		Adenoid cystic carcinoma	1	0.6
		Carcinoma, NOS	35	20.3
		Paget's disease of the nipple	3	4.2
		Cystosarcoma phylloides	3	4.2
		Others	10	5.8
C 421	Bone marrow (n=171)	Acute lymphoblastic leukemia	86	50.3
		Acute myeloid leukemia	16	9.4
		Acute monocytic leukemia	13	7.6
		Acute leukemia, NOS	7	4
		Acute myelomonocytic leukemia	6	3.5
		Acute promyelocytic leukemia	2	1.2
		Acute prolymphocytic leukemia	1	0.6
		Chronic myeloid leukemia	22	12.9
		Chronic lymphocytic leukemia	1	0.6
		Chronic myelomonocytic leukemia	1	0.6
		Leukemia, NOS	1	0.6
		Multiple myeloma	6	3.5
		Polycythemia vera	6	3.5
		Others	3	1.8
C 180-209	Colorectal (n=115)	Adenocarcinoma	78	68.4
		Mucinous adenocarcinoma	10	8.8
		Follicular adenocarcinoma	8	7
		Carcinoma, NOS	2	1.7
		Signet ring cell carcinoma	5	4.4
		Malignant carcinoid	1	0.9
		Adenosquamous carcinoma	1	0.9
		Others	9	8

C 778-779	Lymph nodes (n=108)	Non Hodgkin's lymphoma	95	86.4
		Hodgkin's disease	5	4.5
		Burkitt's lymphoma	4	3.6
		Others	4	4
C 440-449	Skin (n=102)	Basal cell carcinoma	51	50
		Squamous cell carcinoma	29	28.4
		Malignant melanoma	8	7.8
		Sebaceous adenocarcinoma	3	2.9
		Dermatofibrosarcoma	2	2
		Others	9	8.8
C 739	Thyroid (n=77)	Papillary carcinoma	49	63.6
		Follicular carcinoma	12	15.6
		Carcinoma anaplastic, NOS	9	11.7
		Others	7	9.1
C 690-699	Eye (n=62)	Squamous cell carcinoma	16	25.8
		Retinoblastoma	13	21
		Embryonal rhabdomyosarcoma	8	12.9
		Adenocarcinoma	5	8.1
		Basal cell carcinoma	4	6.5
		Malignant melanoma	3	4.8
		Neuroblastoma	2	3.2
		Transitional cell carcinoma	2	3.2
		Others	9	14.5
C 569	Ovary (n=60)	Adenocarcinoma NOS	21	35.6
		Papillary cystadenocarcinoma	11	18.6
		Mucinous cystadenocarcinoma	5	8.5
		Dysgerminoma	4	6.8
		Endometrioid carcinoma	3	5.1
		Serous cystadenocarcinoma	2	3.4
		Granulosa cell tumor	1	1.7
		Clear cell adenocarcinoma	1	1.7
Others	7	11.7		

NOS = Not Otherwise Specified
