

Cancer in elderly: A study of hospital-based cancer registry in the Western Turkey

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Abstract

Aim: The aim of the study is to evaluate the data of cases who were 65 years and older among cancer records from the data of Izmir Cancer Registry (ICR), in Izmir Atatürk Research Training Hospital (IAEAH), according to topography, histology, sex and having multiple tumors and to compare them with the data of cases younger than 65 years.

Material and Methods: Twenty thousands eight hundred and thirty (20,830) cases (7148 cases are ≥ 65 years) recorded during the period of 1993-2005 by office of ICR, located in IAEA, were analyzed. Assessment of data was carried out by SPSS 10.0 for Windows package program. For statistical analysis Pearson's Chi-Square Test and Yates' corrections were performed.

Results: Of 20,830 cases with cancer, recorded in the hospital data-base during 1993-2005, 34.3% were diagnosed at the age of 65 years and older. The most frequent tumor localizations in the cases younger than 65 years were breast, larynx, digestive system, skin and hematopoietic-reticuloendothelial system whereas the tumors in the, skin, digestive system and the urogenital system were more common in cases older than 65 years. When histological diagnoses were taken into consideration, basal cell carcinomas and squamous and transitional cell carcinoma were seen more frequent in the group of cases 65 years or older. The incidence of synchronous and metachronous tumors were not different in the cases younger or older than 65 years.

Conclusion: There is a strong need to establish a communication between national and international database systems, which would yield an opportunity in the comparison of the incidence of the diseases. Hippokratia. 2012; 16 (1): 57-60

Key words: cancer in elderly, topography, histology

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Cancer frequencies vary by age as well as by the type of cancer. Analysis of the data aspect of the elderly cancer patients is important for future approaches. There have been few studies of cancers in the elderly, though over 50 percent of all cancers occur within this age group. The knowledge of different frequency of different cancer types with increasing age in elderly may contribute to the development of new treatment strategies¹.

Hospital and population based cancer registry system has a critical role in providing the incidence, treatment and survival data correctly. Population based cancer follow-up and the risk factors have important roles in preventing, screening and treatment administrations².

Unfortunately, the data of the real cancer incidence for a defined population within Turkey have never been available. Furthermore, the mortality data of Turkey are incomplete. Izmir Cancer Registry (ICR), which is an important population-based cancer registry organized in Turkey in 1992, is a member of the European Network of Cancer Registries (ENCR)³.

In this study we aimed to investigate the data of cases

who were 65 years and older among 20,830 cancer records and who were related within ICR, in IAEA, according to topography, gender and having multiple tumors and to compare them with the data of cases younger than 65 years.

Material and Methods

The data of 20,830 cases with cancer (7148 patients are ≥ 65 years) diagnosed during 1993-2005 by office of ICR located in IAEA, were analyzed. The cancer registry has been created by CANREG-3, software which was developed by International Agency of Cancer Registry (IACR).

The histological and topographic classification of multiple primary tumors were carried out according to International Rules for Multiple Primary Cancers (International Classification of Diseases for Oncology, third edition) and the International Code of Disease- Oncology Third Edition (ICD-O 3.vs)^{4,5}.

As there is a chest diseases training and research hospital in Izmir, the frequency of the lung cancer in our data seem to be lower than the ones in international data. Since it is the first study about this subject, the patients

Table 1: Gender of the cases

	<65 years		≥65 years		Total	p
	n	%	n	%		
Gender						
Male	7105	(51.9)	4213	(58.9)	11318	
Female	6577	(48.1)	2935	(41.1)	9512	<0.001 *

Table 2: Location of the tumors

Location	<65 years old				≥65 years old				P value
	MALE		FEMALE		MALE		FEMALE		
	N	%	N	%	N	%	N	%	<65yr vs ≥65
Lip, Oral Cavity, Pharynx	418	4.5	198	4.5	231	4.5	92	4.5	0,957
Esophagus	160	1.8	86	1.8	93	1.8	38	1.8	0,858
Stomach	605	6.6	300	6.6	376	6.6	174	7.7	0,004*
Small Intestine, Colorectal, Anus	574	7.4	434	7.4	381	7.4	283	9.3	0,000*
Liver	116	1.3	56	1.3	81	1.3	42	1.7	0,007*
Pancreas	238	2.7	138	2.7	140	2.7	137	3.9	0,000*
Respiratory system	38	0.4	18	0.4	20	0.4	11	0.4	0,796
Larynx	983	7.5	43	7.5	440	7.5	20	6.4	0,005*
Trachea, bronchus, lung	367	2.9	24	2.9	134	2.9	12	2.0	0,000*
Thymus, Heart, Mediastin	15	0.2	11	0.2	2	0.2	0	0	0,005*
Bone, Articular, Cartilage	86	1.0	47	1.0	10	1.0	7	0.2	0,000*
Hematopoieticand Reticuloendothelial System	489	6.5	400	6.5	229	6.5	140	5.2	0,000*
Skin	563	7.0	396	7.0	644	7.0	610	17.5	0,000*
Peripheric nerves	11	0.1	8	0.1	3	0.1	2	0.1	0,239
Retroperitoneal, Peritoneal	14	0.3	25	0.3	11	0.3	5	0.2	0,500
Connective, Soft Tissue	71	1.1	80	1.1	24	1.1	30	0.8	0,016*
Breast	29	12.9	1734	12.9	20	12.9	439	6.4	0,000*
Vulva, vagina	0	0.3	44	0.3	0	0.3	44	0.6	0,002*
Cervix uteri	0	3.2	443	3.2	0	3.2	99	1.4	0,000*
Corpus uteri	0	3.1	428	3.1	0	3.1	173	2.4	0,004*
Ovary	0	3.1	419	3.1	0	3.1	91	1.3	0,000*
Other, NOS Female Gynecologic System	0	0.1	14	0.1	0	0.1	7	0.1	1,000
Penis	2	0	0	0	2	0	0	0	0,611
Prostate gland	108	0.8	0	0.8	337	0.8	0	4.7	0,000*
Testis and Other Male Genital System	202	1.5	0	1.5	7	1.5	0	0.1	0,000*
Kidney	125	1.5	77	1.5	73	1.5	51	1.7	0,154
Bladder	573	4.6	59	4.6	534	4.6	66	8.4	0,000*
Other NOS urinary system	3	0.0	1	0.0	1	0.0	1	0	1,000
Eyes	16	0.3	26	0.3	11	0.3	21	0.4	0,105
Meninges	359	5.2	352	5.2	64	5.2	45	1.5	0,000*
Thyroid	63	2.0	206	2.0	24	2.0	41	0.9	0,000*
Adrenal gland and Other Endocrine system	45	0.7	57	0.7	7	0.7	7	0.2	0,000*
Other NOS	11	0.2	15	0.2	5	0.2	8	0.2	1,000
Lymph Nodes	465	5.3	257	5.3	128	5.3	105	3.3	0,000*
Unknown Primary Site	356	3.9	181	3.9	181	3.9	134	4.4	0,095
TOTAL			13682	100			7148	100	

Chi-Square Test, *p<0.05:SS

Table 3: Histology of the Tumors

HISTOLOGY	<65 years		≥65 years		Total	p
	n	%	n	%		
Squamous and transitional cell carcinoma	3044	22.2	1941	27.2	4985	<0.001 *
Basal cell carcinoma	621	4.5	815	11.4	1436	<0.001 *
Adenocarcinoma	4738	34.6	2320	32.5	7058	0.002*
Other specific carcinomas	401	2.9	172	2.4	573	0.028*
Non-specific carcinomas (Carcinomas)	543	4.0	260	3.6	803	0.238
	9347	0.68	5508	77.0	14855	
Mesothelioma	13	0.1	3	0	16	0.294
Myeloid	465	3.4	162	2.3	627	<0.001 *
B cell neoplasms	691	5.1	378	5.3	1069	0.460
T-cell and NK cell neoplasms	87	0.6	29	0.4	116	0.034*
Hodgkin's lymphomas	236	1.7	36	0.5	272	<0.001 *
Non specific types (Hematopoietic and lymphatic tissue tumors)	370	2.7	103	1.4	473	<0.001 *
	1849	13.5	708	9.9	2557	
Sarcomas and other soft tissue tumors	392	2.9	101	1.4	493	<0.001*
Kaposi's sarcoma	5	0	12	0.2	17	0.004*
Other specific types	1106	8.1	230	3.2	1336	<0.001 *
Non-specific types	970	7.1	586	8.2	1556	0.004*
TOTAL	13682	100	7148	100	20830	

Chi-Square Test, *p<0.05

with lung cancer were not excluded from the study.

Synchronous tumors were defined as second primary tumors occurring within 6 months of the diagnosis of the first primary tumor, whereas metachronous tumors were defined as those were diagnosed after an interval of > 6 months.

The number of topographic groups (35 groups) decreased to seven to simplify the statistical analysis. Assessment of data was carried out by SPSS 10.0 for Windows package programme. For statistical analysis Pearson's Chi-Square Test was used, with the help of Yates' correction when the expected count was lower than 5⁶. The data were defined as number and percentage. A p value (two-tailed) of ≤0.05 was considered as statistically significant.

Results

Of 20,830 cancer cases, 43.1% were diagnosed at the age range of 45-64 years, and 34.3% were diagnosed at the age of 65 years and older (Table 1). The latter group of cases could be separated as two main subgroups: Cases who were diagnosed at the age range of 65-79 years (31.7%) and 80 years or older (2.6%). The ratio of male to female was significantly higher in all cases (Table 1).

The five most frequent tumor sites at the cases younger than 65 years were breast, larynx, small intestine-colorectal-anus, skin, stomach whereas at the cases 65 years and older the location were skin, small intestine-colorectal-anus, bladder, stomach, larynx, respectively (Table 2).

On the other hand, the incidence rates of the tumors arising from the lips, oral cavity and pharynx, esophagus,

respiratory tract, periferic nerves, peritoneum/retroperitoneum, various male/female genital system, eye as well as other unknown origins were similar in both groups (65 years and 65 years or older group, p>0.05, Table 2)

When histological diagnoses were taken to the consideration, basal cell carcinomas, squamous and transitional cell carcinoma Kaposi sarcomas were seen more frequent in the group of cases 65 years or older (p<0.05) whereas adenocarcinoma was more common in the cases younger than 65 years (Table 3).

The incidence of synchronous and metachronous tumors were not different in the cases younger or older than 65 years.

Discussion

Although the study has some limitations with regard to insufficient records regarding population follow-up and death rates in the entire state, which eventually prevent the estimation of incidence rates, we think that the present study is one of the most important studies in Turkey, since it depends on a large database.

Around 60% of all cancers occur in those aged 65 years or older⁷ and the incidence in both men and women in this demographic is 11 times higher than that in younger persons⁸. The number of cases aged 75 years and older is expected to be almost tripple between 2000 and 2050, and the proportion of cases in this population is expected to increase from 30% in 2000 to 42% in 2050⁹. In our study, approximately one third of the cases were at the

age of 65 years or older at the time of the diagnosis. In a study from Italy, Spain and France, on behalf of the EUROPREVAL Working Group, the cancer prevalence at the cases older than 65 years and between 45-64 years were investigated. People aged 65 years or older accounted for nearly 58% of the total prevalence in Italy, 55% in France and 54% in Spain¹⁰. The difference concerning the percentage of cases 65 years and older between our study and the above-mentioned European study can be explained by relative predominance of our younger population compared to the most of the European countries.

In a study in USA the incidence of all cancers in elderly was found four times that for men between the ages of 45-64¹. The lifetime risk of cancer was higher in men than in women (559.6 per 100,000 versus 420.1 per 100,000) and the most sex-related differences in the incidence of cancer were seen after 64 years of age¹¹. Also in our study the ratio of male to female was significantly higher both in cases younger than 65 years (51.9%) and those with 65 years and older (58.9%).

As the relation between the tumor site and age were assessed, in a study involving France, Italy and Spain in the 65 years and older group the proportion was much higher for cancers of the digestive tract, corpus uteri and prostate. Also more than 90% of the patients with prostate cancer were older than 65 years in these three countries¹⁰. In a study performed according to SEER data, the most frequent tumor localizations were lung, colon, prostate, female breast, urinary bladder, rectum, uterine corpus, pancreas, stomach, and leukemia¹. Although the results of our study were similar, as the digestive tract, skin, and urogenital tumors were the most common sites (the five of most frequent tumor sites were skin, colorectal, bladder, stomach, larynx) in the 65 years and older group, it is noteworthy that the laryngeal and gastric locations were more common. We think that this difference may be associated with smoking, which is a more common health problem in our country. Also our data about the high frequency of stomach cancer are in concordance with the data of the far east¹².

In our study, cancer of the bladder, larynx, colorectal, stomach and prostate were the most frequent malignancies in male cases in the group 65 years or older. In the study by Baranovsky, the differences in incidence for the ten most frequent cancer sites by sex and by age (65 to 74 versus 75 and older) were examined. The five leading cancer sites for white males age 65 and older were prostate, lung, colon, urinary bladder, and rectum¹. The lower rate of the incidence of prostate cancer in our data can be explained by the relative paucity of effective screening program in the Turkey.

According to a study made in USA, among Laotian men, incidence rates for lung, liver, and stomach cancers were more frequent than prostate cancer; in fact, their prostate cancer rate was lowest among the Asians and Pacific Islanders (API). Stomach cancer was among the top five cancers in all API groups, with the exception of Asian Indian/Pakistani and Filipino men, but ranked much lower in non-Hispanic white men. Rates of stomach cancer were notably high for Korean and Samoan men¹². In an other study from Korea, stomach cancer was the second

and prostate cancer was the fifth more frequent cancer in male older than 65 years¹³.

The five leading cancer sites for females in the study of Baranovsky¹, as descending order, were breast, colon, lung, uterine corpus, and rectum. In our case population, who were at the age of 65 years or older, the main locations were breast, colorectal, stomach, corpus uteri and hematopoietic system. As an important difference to the US study, the incidence of gastric cancer was higher in our population, which was, in fact, in line with the Asian reports.

Conclusion

The present study gives important information about the topographic and histological data of the elderly population about the west part of the Turkey. However, there is a strong need to establish a communication between national and international database systems, which would yield an opportunity in the comparison of the incidence of the diseases.

Acknowledgements:

We would like to thank all physicians for their contributions to the treatment of the patients.

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