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Frequency, Demographic and Clinicopathological Characteristics of Skin Cancer Patients Treated and Followed Up in the Medical Oncology Outpatient Clinic

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ABSTRACT

Background: Patients with skin cancer apply to medical oncology outpatient clinics for follow-up after the completion of local treatments or in case of progression despite locoregional treatments (surgical and/or radiotherapy). In this study, we aimed to determine the demographic and clinicopathological characteristics of patients with skin cancer who were followed up and treated in the medical oncology outpatient clinic, as well as to determine their ratio compared to other cancers.

Materials and Methods: Age, gender and demographic information of the patients diagnosed between C00 and C80 according to International Classification of Diseases-10, followed in University of Health Sciences Turkey, Basaksehir Cam and Sakura City Hospital Medical Oncology Clinic between April 2021 and April 2022.

Results: The ratio of skin cancer patients to all cancer patients was 1.55%. The most common skin cancer subgroup presenting to the medical oncology outpatient clinic was cutaneous melanoma (10, 0.65%), followed by cutaneous Kaposi's sarcoma (9, 0.58%), squamous cell carcinoma (4, 0.26%), and basal cell carcinoma (1, 0.06%).

Conclusion: We have determined that the number of skin cancer patients and its rate among other organ cancers is quite low. We found that patients with a diagnosis of skin cancer were referred from various centers other than dermatology.

Keywords: Cutaneous malign melanom, Kaposi sarcoma, Squamous cell carcinoma, Basal cell carcinoma

Introduction

According to the 2020 data of world cancer statistics, the incidence of new cancer is 18.1 million and is expected to be 28.4 million in 2040 [1]. When calculating the rate of skin cancers, it is generally seen that keratinocyte carcinomas [basal cell carcinoma (BCC) and squamous cell carcinoma (SCC)] are excluded from the list due to their low mortality rate and coexistence with many cancers [2]. In epidemiological studies, BCC is seen in 0.5-1/100 of the entire

population in North America and Europe [3]. This indicates that more than 2 million people are diagnosed with BCC in North America alone [4]. Among all cancers except BCC, the incidence of cutaneous melanoma is 1.7%, non-melanoma skin cancer 6.2%, and Kaposi sarcoma 0.2%. When diagnosed at its earliest stage, all (100%) people with melanoma will survive their disease for one year or more, compared with more than 1 in 2 (53%) people when the disease is diagnosed at the stage IV. Survival for most non-melanoma



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skin cancers is excellent. The 5-year relative survival for BCC is 100% and the 5-year relative survival for SCC is slightly less at 95% [1].

Patients with skin cancer apply to medical oncology outpatient clinics for follow-up after the completion of local treatments or in case of progression despite locoregional treatments (surgical and/or radiotherapy). City hospitals have the potential to refer patients with skin cancer from other clinics, especially dermatology and plastic surgery, to the medical oncology outpatient clinic, due to the opportunity of many disciplines to coexist. In this study, we aimed to determine the demographic and clinicopathological characteristics of patients with skin cancer who were followed up and treated in the medical oncology outpatient clinic, as well as to determine their ratio compared to other cancers.

Materials and Methods

Age, gender and demographic information of the patients diagnosed between C00 and C80 according to International Classification of Diseases-10, followed in University of Health Sciences Turkey, Basaksehir Cam and Sakura City Hospital Medical Oncology Clinic between April 2021 and April 2022, were obtained from the hospital registry system following the approval of the University of Health Sciences Turkey, Basaksehir Cam and Sakura City Hospital Non-interventional Clinical Research Ethics Committee (decision number: KAEK/2022.07.222, date: 07.07.2022).

Patients with diagnosis codes C43, C44 and C46, with full demographic, clinicopathological and therapeutic information and who applied to the medical oncology outpatient clinic at least twice, were considered as followed-up skin cancer cases and were evaluated in 4 subgroups as cutaneous melanoma, BCC, SCC and Kaposi's sarcoma (KS). In addition, the disease stage and referral clinical information of these patients were recorded according to the American Joint Committee on Cancer tumor-node-metastasis system.

Statistical Analysis

SPSS 20.0 program was used for statistical analysis of the obtained data. The conformity of the data to the normal distribution was tested with the Kolmogorov-Smirnov test. The analysis of normally distributed parametric data was done using the Student's t-test, and the analysis of non-normally distributed data was performed using the Mann-Whitney U test. Parametric data obtained were expressed as mean \pm standard deviation values. Analysis of categorical variables was evaluated using the chi-square test. Pearson correlation analysis was used to compare numerical data, and Spearman correlation analysis was used to compare categorical data.

Results

In the last year, 1,533 cancer patients followed in the medical oncology outpatient clinic were identified. The 3 most common

cancers were breast (20.8%), lung (18.3%) and colon (15.9%) cancers, respectively (Table 1). The ratio of skin cancer patients to all cancer patients was 1.55%. The most common skin cancer subgroup presenting to the medical oncology outpatient clinic was cutaneous melanoma (10, 0.65%), followed by cutaneous KS (9, 0.58%), SCC (4, 0.26%), and BCC (1, 0.06%) (Figure 1). The median age was 55.6 in cutaneous melanoma patients, 53.5 in Kaposi sarcoma patients, and 55 in SCC patients. The age of the patient with BCC was 74 years old. For cutaneous melanoma patients, the most frequent referral centers were dermatology (30%) and plastic surgery (30%) (Table 2). 66.6% of Kaposi sarcoma patients were in the advanced cutaneous disease stage. Infectious disease was the clinic that most frequently referred to KS (44.4%). The referral rate from dermatology and radiation oncology was 22.2% (Table 3). Of the four SCC patients, 2 were stage 4, 1 was stage 3, and 1 was stage 1. Each of the SCC patients was referred from different clinics (Table 4). The BCC patient was at local high risk and was referred for eye diseases (Table 5).

Discussion

In this study, we examined the frequency, clinical characteristics and referral centers of skin cancer patients followed in the Medical

Table 1. Distribution of newly diagnosed cancer patients in one year

Cancer diagnosis	N	%
Endocrine neoplasms	11	0.71
Head and neck cancer	38	2.47
Brain tumors	36	2.34
Basal cell skin cancer	1	0.06
Squamous cell skin cancer	4	0.26
Other gynecologic neoplasms	85	5.54
Soft tissue sarcomas	44	2.87
Hepatobiliary cancers	41	2.67
Kaposi sarcoma	9	0.58
Lung cancers	281	18.3
Colon and rectum cancer	244	15.9
Cutaneous malign melanoma	10	0.65
Breast cancer	320	20.8
Bladder and urinary track cancers	27	1.76
Mesothelioma	4	0.26
Gastric cancer	125	8.15
Ovary cancer	78	5.08
Esophageal cancer	37	2.51
Pancreas cancer	54	3.52
Prostate cancer	41	2.77
Testicular cancers	20	1.30
Kidney cancer	23	1.50
Total	1,533	100

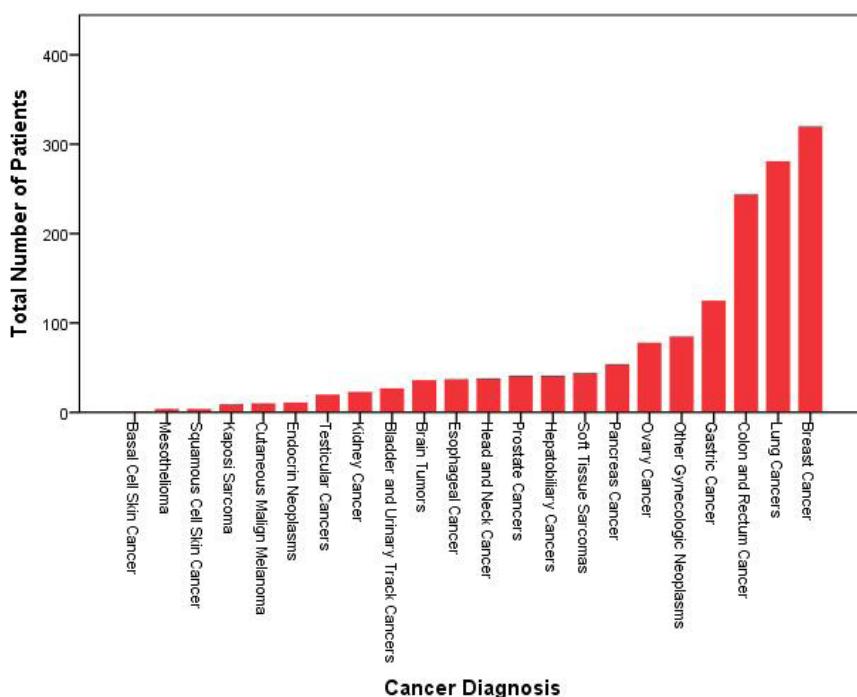


Figure 1. The rate of patients diagnosed with skin cancer within a year is quite low compared to other cancer diagnoses

Table 2. Clinical features of patients with cutaneous malign melanom

Cutaneous malign melanom	Gender (F/M)	Age	Stage at diagnosis	Referring clinic
Patient 1	F	70	IIA	Eye disorders
Patient 2	F	68	IV	Pulmonary medicine
Patient 3	F	62	IV	Dermatology
Patient 4	M	48	IV	Dermatology
Patient 5	F	60	IV	Dermatology
Patient 6	M	44	IV	Plastic surgery
Patient 7	M	44	IV	Plastic surgery
Patient 8	F	60	IV	Neurosurgery
Patient 9	M	55	IV	General surgery
Patient 10	F	45	III	Plastic surgery

F: Female, M: Male

Table 3. Clinical features of patients with Kaposi

Kaposi sarcoma	Gender (F/M)	Age	Stage at diagnosis	Referring clinic
Patient 1	M	81	Advance cutaneous disease	Radiation oncology
Patient 2	M	58	Advance cutaneous disease	Infectious disease
Patient 3	M	61	Advance cutaneous disease	Infectious disease
Patient 4	M	66	Limited cutaneous disease	Dermatology
Patient 5	F	58	Advance cutaneous disease	Dermatology
Patient 6	M	33	Advance nodal disease	Infectious disease
Patient 7	M	21	Advance nodal disease	Internal medicine
Patient 8	M	81	Advance cutaneous disease	Radiation oncology
Patient 9	M	23	Advance cutaneous disease	Infectious disease

F: Female, M: Male

Table 4. Clinical features of patients with squamous cell skin cancer

Squamous cell skin cancer	Gender (F/M)	Age	Stage at diagnosis	Referring clinic
Patient 1	M	68	I	Plastic surgery
Patient 2	M	66	IV	Internal medicine
Patient 3	M	41	III	Radiation oncology
Patient 4	F	45	IV	Neurosurgery

F: Female, M: Male

Table 5. Clinical features of patient with basal cell skin cancer

Basal cell skin cancer	Gender (F/M)	Age	Stage at diagnosis	Referring clinic
Patient 1	F	74	Local high risk	Eye disease

Oncology outpatient clinic among all cancer patients. We have determined that the number of skin cancer patients and its rate among other organ cancers is quite low. We found that patients with a diagnosis of skin cancer were referred from various centers other than dermatology.

According to GLOBOCAN 2020 data, the 4 most common cancers worldwide are breast, prostate, lung and colon cancers, respectively [1]. According to data from global studies, cancer incidences in Turkey are similar to those in the world [1]. In our center, the first 3 cancers were breast, lung and colon cancers, respectively. It was remarkable that prostate cancer was at a lower rate in our clinic.

We found that the rate of cutaneous melanoma patients among 1-year total cancer patients is very rare, with 0.65%, and the vast majority (80%) were referred to our center in the metastatic stage (stage 4). Lideikaitė et al. [5] reported the rate of stage 4 patients as 10.59% in primary invasive melanoma patients in a study. Rockberg et al. [6]. In a study from Sweden that included 3,554 patients with cutaneous malignant melanoma, the majority of patients (92%) were in the localized stage (stages I and II), with only 1.3% in stage 4.

While follow-up after surgical excision is recommended for stage I and IIA cutaneous melanoma patients, in the case of high-risk-lymph node-negative (stage IIB and IIC) and lymph node metastases, adjuvant treatment options are specified in the algorithms and guidelines. Breslow thickness, presence of ulcer in the primary tumor, size of sentinel lymph node metastasis and BRAF mutation are determinants of adjuvant therapy in locoregional disease [7]. For these reasons, every patient deserves a medical oncology evaluation with up-to-date guidelines after excision. It would be appropriate to refer every patient who underwent surgical intervention and diagnosed with cutaneous melanoma to medical oncology clinics.

Acquired immunodeficiency syndrome (AIDS) disease -related KS is being studied as a separate group, with KS being seen 20,000 times more frequently in patients with AIDS than in the general population

[8]. It has been reported in recent years that the frequency of KS decreased with antiretroviral therapy [1]. Because of this association, we think that the most common clinic referencing patients with KS to medical oncology is infectious diseases.

SCC and BCC were the least common skin cancers. Although consultations were made from various clinics, none of them were referred from dermatology. Possible reasons for this may be a small number of applications to dermatology clinics, difficulty in reaching the dermatology clinic, or not seeking consultation of medical oncology due to early-stage disease. Although keratinocyte carcinomas are the most common cancers in the world, we found the rate in our clinic much lower than expected. For this reason, it is important to detect and correct possible malfunctions.

Study Limitations

We cannot generalize our study due to the fact that it is a single center and due to the evaluation of patient applications in the last year. Therefore, low sample size and short time interval may cause selection bias.

Conclusion

The results of our study showed that the rate of patients with cutaneous malignancies followed in medical oncology is low compared to the rest of the world. In particular, patients with early-stage melanoma and keratinocyte-derived carcinoma have the potential to be problematic in their referral processes. Multicenter and large-scale population studies are needed to validate our study.

Ethics

Ethics Committee Approval: This study was approved by the University of Health Sciences Turkey, Basaksehir Cam and Sakura City Hospital Non-interventional Clinical Research Ethics Committee (decision number: KAEK/2022.07.222, date: 07.07.2022).

Informed Consent: Retrospective study.

Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: F.F., Concept: F.F., Z.A.F., Design: Z.A.F., Data Collection or Processing: F.F., Analysis or Interpretation: F.F., Literature Search: Z.A.F., Writing: Z.A.F.

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