Are seasons important in skin cancer ?

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Skin cancer draws attention with its increasing incidence worlwide and in our country in the last two decades. Despite low mortality rate, skin cancer is of improtance because of the high rate of morbidities such as dysfunctions and esthetic imperfections. It is most commonly manifested in the areas of body exposed to solar rays including head and neck, and dorsum of the hand. The most common type of tumor is basal cell carcinoma (BCC). Solar ultraviolet rays play a crucial role in the epidemiology of skin cancer. While everyone may develop skin cancer, light skinned persons and those with a large number of nevi and skin spots, exposed to sunlight for prolonged periods and individuals having a history of sunburn in childhood are at a higher risk for developing skin cancer. Therefore, protection against sun is important (1,2).

Numerous epidemiological studies have reported a relationship between solar rays and risk of developing skin cancer (1,2). In their study, Rosa et al. reported that persons born in February to April are at a higher risk of developing non-melanoma skin cancer compared with those born in summer period (3). Crocetti et al. reported that melanoma is more frequently diagnosed in summer time (4). Furthermore; risk of developing, prognosis and mortality from several cancers including prostate, colon, melanoma and ovarian cancers has been linked to the seasons. A better prognosis has been reported in the case of cancers diagnosed in summer (5). Objective of the present study was to investigate effects of the seasonal distribution of diagnosis in the patient with skin cancer who were diagnosed and treated in our hospital.

Dates of diagnosis were assessed in 572 patients operated between 2005 and 2013 due to skin cancer. Of the patients, 53.8% (n: 308) were male, 67.8% aged 65 years and over, and 71.7% (n: 410) had diagnosis of BCC with the most common involvement region was cheek (23.8%) followed by nose (22.9%). The operations was most frequently performed in autumn .In the analysis carried out according to the season of diagnosis, no statistically significant difference was found in terms of gender (p=0.521), age (p=0.327), cancer type (p=0.791) and localization area (p=0.121) (Table 1).

In our study, we found that skin cancer was more commonly seen among men and the most common histopathological diagnosis was BCC by 71.4% followed by squamous cell skin carcinoma (SCC). The most frequently involved regions were found as head & neck followed by nose and cheek. Our findings are consistent with the literature (1,2). When diagnoses of skin cancer were evaluated according to the season, the diagnoses were most commonly established in autumn and least commonly in summer period. In a study by Quatresooz et al. in Westernized

populations, malignant melanoma and BCC were stated to be diagnosed more frequently in the late spring/early summer and mid-autumn seasons. They concluded that, their findings suggested unspecific seasonality in diagnosing skin disorders including malignancies (6). Crocetti Eet al. studied the seasonal distribution of non-cutaneous tumors and cutaneous melanoma in Italian population. They reported that melanoma was more commonly diagnosed in the beginning of summertime (7).

In conclusion, in our study the seasons have not effect on the diagnosis of skin cancer. Studies with larger series are warranted in order to elucidate effects of the seasons on the diagnosis of skin cancer.

Table 1. Baseline characteristics of the skin cancer patients according to diagnosis of season (n=572)

Patient and tumour characteristics	No. of patients	Winter	Spring	Summer	Autumn	*P* value (<0.05)
Gender						0.521
female	264 (%46.2)	62	67	53	82	
male	308(%53.8)	87	81	56	84	
Age (years)						0.327
=<40	23(%4)	6	5	8	4	
<41-64	161(%28.1)	42	39	36	44	
>65	388(%67.8)	100	105	65	118	
Type of cancer						0.791
BCC	410(%71.7)	105	109	73	123	
SCC	149(%26.0)	40	37	32	40	
MM	13(%2.3)	4	2	4	3	
Distribution in the body						0.121
nose	131(%22.9)	35	39	21	36	
cheek	136(%23.8)	25	35	31	45	
lip	30(%5.2)	10	4	7	9	
body, extremite	63(%11.0)	19	18	17	10	
ear	31(%5.2)	10	12	2	7	
others (forehead, eyebrow)	176(%30.8)	49	40	31	56	
unknown	5(%0.8)	1	1	0	3	

Abbreviations: BCC: basal cell carcinoma; **SCC:** squamous cell carcinoma; **MM:** malignant melanoma

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