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RESEARCH

DEMOGRAPHIC CHARACTERISTICS OF NON-MELANOCYTIC SKIN CANCER: A COMPARATIVE STUDY BETWEEN OLDER AND YOUNGER PATIENTS WHO APLIED TO ANTALYA SERIK STATE HOSPITAL BETWEEN 2008-2013

ABSTRACT

Introduction: Non melanoma skin cancer is the most common cancer in the world that seen more in the geriatric population. We aimed to evaluate the incidence, relationship of gender and location of patients with lesions of head and neck Non melanoma skin cancer who were in geriatric group and aged under 65 years.

Materials and Method: The study included 150 patients diagnosed with non-melanoma skin cancer and operated in Antalya Serik State Hospital between years 2008 – 2013. The patients were separated into 2 groups according to their age (<65 and ≥65). Retrospective evaluation was made in respect of age, gender, lesion's location and pathological diagnosis.

Results: There were 84 (56.0%) males and 66 (44.0%) females (Mean age= 65.51 years). Most patients were in the 6th (n=47) and 7th (n=46) decade of life. Of the 117 patients with diagnosis of basal cell carcinoma, 69 were in the geriatric group and 48 were in the other group and of the 33 patients with diagnosis of squamous cell carcinoma, 22 were in the geriatric group and 11 were in the other group. In the geriatric group, basal cell carcinoma was observed at a higher rate in females and squamous cell carcinoma in males. Non melanoma skin cancer was seen more often on the nose in females and with a lower lip and auricular location in males.

Conclusion: This study, along with the studies that would be conducted in the future in other regions of Turkey, will be useful in determining demographic and geographical characteristics of non melanoma skin cancer that will help in management of these types of cancers.

Key Words: Skin Cancer; Geriatrics; Non Melanoma Skin Cancer; Basal Cell Carcinoma; Squamous Cell Carcinoma.

ARAŞTIRMA

ANTALYA SERİK DEVLET HASTANESİNE 2008-2013 TARİHLERİ ARASINDA BAŞVURAN MALİGN MELANOM DIŞI CİLT KANSERLERİNİN DEMOGRAFİK ÖZELLİKLERİ: GERİATRİK VE GERİATRİK OLMAYAN HASTALARDA KARŞILAŞTIRMALI BİR ÇALIŞMA

ÖZ

Giriş: Non melanom deri kanseri dünyada en sık görülen kanser türüdür ve geriatrik popülasyonda daha fazla görülmektedir. Biz geriatrik ve 65 yaş altı hastalarda baş ve boyun non melanom deri kanseri lezyonlarının insidansını; cinsiyet ve yerleşim yeri ile ilişkisini araştırmayı amaçladık.

Gereç ve Yöntem: Çalışmaya non melanom deri kanseri tanısı olan ve 2008 ile 2013 yılları arasında Antalya Serik Devlet Hastanesi'nde ameliyat edilen 150 hasta dahil edildi. Hastalar yaşlarına göre <65 yaş ve geriatrik grup (≥65 yaş) olarak ikiye ayrıldı. Hastalar yaş, cinsiyet, lezyonun yerleşim yeri ve patolojik tanı açısından retrospektif olarak değerlendirildi.

Bulgular: Hastaların 84'ü (%56,0) erkek, 66'sı (%44,0) kadındı ve ortalama yaş 65.51'di. Hastaların çoğunun yaşamlarının 6. (n=47) ve 7. (n=46) on yılları içinde olduğu görüldü. Bazal hücreli karsinom tanısı olan117 hastanın 69'u geriatrik yaş grubunda ve 48'i geriatrik olmayan grupta yeralırken; skuamöz hücreli karsinom tanısı olan 33 hastanın 22'si geriatrik yaş grubunda iken 11'i 65 yaş altı grubta yeralmaktaydı. Geriatrik grupta, bazal hücreli karsinom kadınlarda daha sık görülürken; skuamöz hücreli karsinom erkeklerde daha yüksek oranda gözlendi. non melanom deri kanseri kadınlarda burunda daha sık görülüyorken erkeklerde alt dudak ve kulakta daha sık görülmekteydi.

Sonuç: Non melanom deri kanserinin epidemiyolojik ve demografik özelliklerinin anlaşılması bu tür kanserlerin tedavisinde yardımcı olacaktır. Bu çalışma, Türkiye'nin diğer bölgelerinde gelecekte yapılacak olan çalışmalarla birlikte NMSC'nin demografik ve coğrafik özelliklerinin belirlenmesinde yararlı olacaktır.

Anahtar Sözcükler: Cilt Kanseri; Geriatri; Melanom Dışı Deri Kanseri; Bazal Hücreli Karsinom; Skuamöz Hücreli Karsinom.

Introduction

Aging is an inevitable process that occurs in all living organisms. After middle age, some effects of aging can be most commonly observed on the skin. The process of aging is influenced by intrinsic (chronic skin aging) and extrinsic (photo-aging) factors. Intrinsic aging is a natural, physiological process encoded in the genome. This process occurs irrespective of environmental factors; however, such factors may initiate the process earlier, accelerate it, or increase it. Photo-aging develops because of the effects of the sun. Changes induced via other environmental factors, such as cold, wind, reduced humidity, alkaline soap, use of poor cosmetics, and smoking, can be at least partially prevented (1-3).

A significant increase in life expectancy has been attributed to improvements in living conditions and the continued development of new therapeutic alternatives. Furthermore, a decrease in birth rates has resulted in the elderly (those ≥65 years) constituting a greater proportion of the general population. According to the Statistics Institute of Turkey, 4.2% of the general population was elderly in 1985, and that rate had risen to 8% in 2014 (4). Because of the increased lifespans, the incidences of age-related diseases including cancer have increased (3,5).

As the population ages, a more complete understanding of the clinical and histopathological features unique to the geriatric dermatology patient is essential because malignant lesions of the skin are common, particularly in older patients. Sites around the face, head, and neck account for up to 75% of all skin malignancies (6).

Skin cancers are categorized into two groups: melanomas and non-melanoma skin cancers (NMSCs). Non-melanoma skin cancer is the most common form of cancer worldwide, constituting approximately 40% of all malignancies (7). Furthermore, it represents approximately 95% of all cutaneous neoplasms. The incidence of NMSC has increased since the 1990s (7).

Timely recognition and diagnosis are important because early identification can limit the extent of facial tissue involvement and subsequent resection, which provides for better cosmetic and functional reconstructions. Therefore, the aim of this study was to retrospectively evaluate the incidence of head and neck NMSC, and its relationship with gender and lesion location in geriatric and non-geriatric populations residing in the Antalya Serik Region of Turkey, a Mediterranean area that receives abundant sunlight.

Materials and Methods

This study included 150 patients diagnosed with NMSC and operated on at Antalya Serik State Hospital between 2008 and 2013. Retrospective evaluation data were patient age, gender, lesion location, and pathological diagnosis. Patients were separated into two age groups, those <65 years (non-geriatric; range, 28–64) and those ≥65 years (geriatric group; range, 65–87). The incidence of NMSC and the most frequently observed subgroups of basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) were compared between the two groups. The distribution of the tumors in each decade of life was also examined.

Lesions were categorized according to their location (forehead, nose, lower lip, upper lip, eye area, eyelid, cheek, auricular, and neck). The distribution percentages were compared separately according to the lesion site, age group, and gender.

Statistical Analysis

The data obtained from the study were analyzed using SPSS v. 20 software (SPSS Inc., Chicago, IL, USA). Nominal variable differences between the groups were examined using chi-square analyses. Values seen in 2¥2 tables at>25% or <5% were evaluated with Pearson's chi-square test with Monte Carlo simulation from the Fisher's exact test and RxC tables. For interpretation of the results, a value of $p<0.05$ was accepted as statistically significant.

Results

The 150 patients operated on for NMSC included 84 (56%) men and 66 (44%) women with a mean age of 65.51 years (range, 28–87, median 66). Lesions were diagnosed as BCC in 117 (78%) patients and as SCC in 33 (22%) patients.

A diagnosis of NMSC was made in 59 and 91 patients of in the non-geriatric and geriatric groups, respectively. When patients were evaluated regarding their decade of life, most were observed to be in their sixth (n=47) or seventh (n=46) decade.

Of the 117 patients with a diagnosis of BCC, 48 (41%) and 69 (59%) were in the non-geriatric and geriatric age groups, respectively. Of the 33 patients with a diagnosis of SCC, 11(33.3%) and 22 (66.7%) were in the non-geriatric and geriatric groups, respectively.

The distribution of NMSC according to the gender is as follows: in women 87,9% was BCC and 12,1% was SCC; in men 70.2% was BCC and 29,8% was SCC. These results de-

Table 1— Frequency of NMSC and Relationship With Location and Gender.

		Men		Women		Total		Chi-square analysis	
		n	%	n	%	n	%	Chi-square	p Value
NMSC	BCC	59	70.2	58	87.9	117	78.0		
	SCC	25	29.8	8	12.1	33	22.0	5.714	0.017
	Total	84	100.0	66	100.0	150	100.0		
Tumor location	Forehead	5	6.0	6	9.1	11	7.3		
	Ear	15	17.9	3	4.5	18	12.0		
	Eye area	3	3.6	2	3.0	5	3.3		
	Eyelid	-	-	3	4.5	3	2.0		
	Upper lip	2	2.4	1	1.5	3	2.0	*	0.034
	Lower lip	9	10.7	3	4.5	12	8.0		
	Neck	4	4.8	1	1.5	5	3.3		
	Nose	27	32.1	33	50.0	60	40.0		
	Cheek	19	22.6	14	21.2	33	22.0		
	Total	84	100.0	66	100.0	150	100.0		

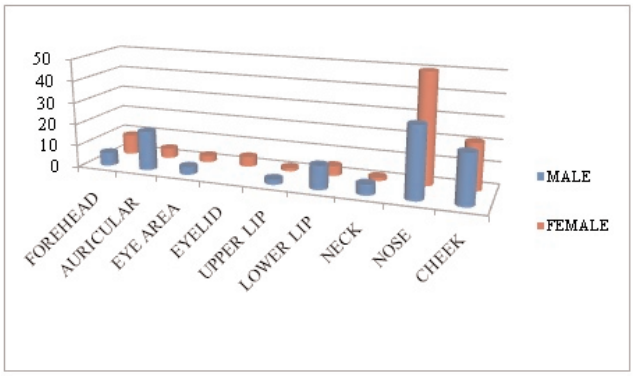

Figure 1— Distribution of NMSC location according to gender.

monstrated that BCC was seen more often in women, and that SCC was seen more often in men. A statistically significant relationship was detected between NMSC and gender ($p<0.05$; Table 1). In the geriatric group, BCC was observed at a higher rate in women (87.5%) and SCC at a higher rate in men (37.2%). In the non-geriatric group, BCC was also observed at a higher rate in women and SCC in men; however, these differences did not reach the level of statistical significance ($p > 0.05$).

Regarding tumor location, NMSC was more frequently observed on the nose in women and on the lower lip or auricular region in men (Table 1; Figure 1). A statistically significant relationship was detected between tumor location and gender ($p < 0.05$). The same results were obtained in the geriatric group; however, no relationship was detected between tumor location and gender in the non-geriatric group.

While BCC was more frequently observed on the nose, cheek, forehead, eye area, and eyelid, SCC was found more often on the ear and lower and upper lips ($p<0.05$; Table 2; Figure 2). These results were detected only in the geriatric group, as no statistically significant relationship between tumor location and gender could be detected in the nongeriatric group ($p>0.05$; Table 3).

Discussion

Chronological changes that affect the structure and function of human skin occur with aging. Progressive thinning and decreased cell replacement of the epidermis, increased blood vessel fragility, dryness, and reduced wound healing are all age-related changes. Furthermore, the numbers of melanocytes, fibroblasts, and Langerhans cells are decreased, causing changes in skin pigmentation, elasticity, and barrier function (2,3). Extrinsic changes may result from factors including ultraviolet light exposure and environmental pollutants, such as smoking. A variety of skin changes have been seen in aged skin due to prolonged exposure to the sun. Sun exposure contributes to a decline in dermatological integrity, leading to skin that easily sags, breaks, bruises, and itches. (1) All these changes contribute to a vulnerability to dermatological disorders. These disorders encompass a diverse array of

Table 2— Results of the Chi-Square Analysis of the Relationship Between Tumor Type and Tumor Location.

	BCC		SCC		Total		Chi-square analysis	
	n	%	n	%	n	%	Chi-square	p Value
Forehead	9	7.7	2	6.1	11	7.3	*	0.041
Ear	11	9.4	7	21.2	18	12.0		
Eye area	4	3.4	1	3.0	5	3.3		
Eyelid	3	2.6	-	-	3	2.0		
Upper lip	2	1.7	1	3.0	3	2.0		
Lower lip	5	4.3	7	21.2	12	8.0		
Neck	4	3.4	1	3.0	5	3.3		
Nose	51	43.6	9	27.3	60	40.0		
Cheek	28	23.9	5	15.2	33	22.0		
Total	117	100.0	33	100.0	150	100.0		

*When the values were >25% or <5% of the anticipated values, Pearson's chi-square analysis with Monte Carlo simulation was applied.

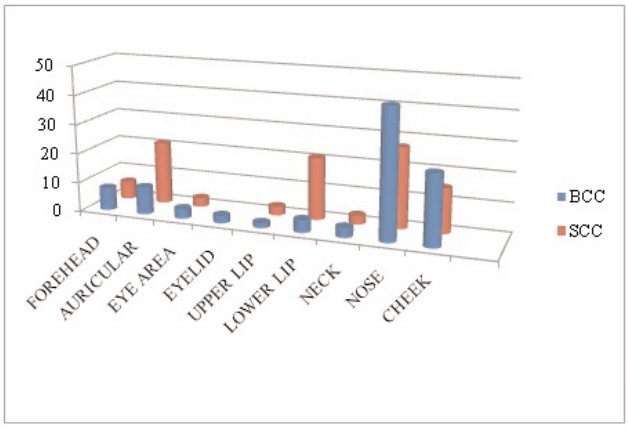

Figure 2— Distribution of SCC and BCC locations.

etiologically unrelated degenerative, autoimmune, idiopathic, and neoplastic conditions that may impact quality of life and produce significant morbidity and mortality.

Non-melanoma skin cancer is the most common form of malignancy affecting Caucasians, represents nearly 95% of all cutaneous neoplasms (8), and is increasing in worldwide incidence. Australia has the highest incidence of skin cancer in the world, with a population-based cancer registry showing that this cancer type has increased 1.5-fold over the past 17 years (9). Basal cell carcinoma accounts for 75%–80% of NMSCs, and up to 75%–80% of these are on the head and neck. The remainder is predominantly SCC (10,11,12). In the current study, BCC was diagnosed in 78% (n=117) of patients and SCC in 22% (n=33). Furthermore, NMSC was more frequently observed in the geriatric population. In a study of a patient group aged >60 years conducted by Sentis et al., BCC was diagnosed in 90% and SCC in 83%. Results from studies conducted in Italy, Australia, Spain, and England suggest that the mean age at which NMSC was detected was in the seventh decade of life (9.13-15). In the current study, the mean age was 65.5 years (median, 66). Of the patients diagnosed with BCC, 68.4% were aged >60 years, and 75.8% of those in the same age group were diagnosed with SCC. A significant increase was observed in NMSC from the age of 50 or more years, and the largest group was found to be those between 60 and 70 years of age (Figure 3).

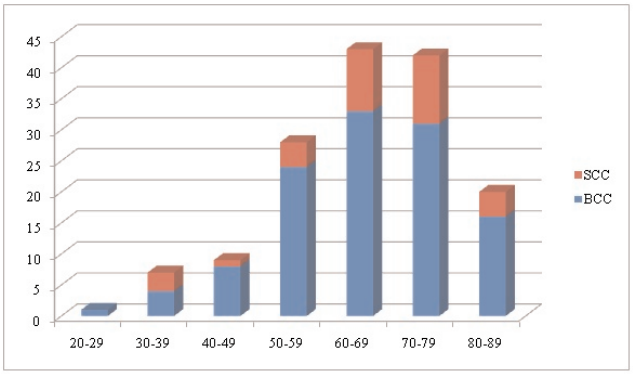

Figure 3— Distribution of SCC and BCC according to decades.

Although there was a predominance of NMSC in the geriatric age group, it was seen at an earlier age as compared with the results of studies from several Mediterranean countries, Australia, England, and the United States (9,11,13-15). This finding from the current study is supported by the results of studies previously conducted by Eskiizmir et al. and Tiftikcioğlu (12,16). The current study was conducted in the region of Antalya, Turkey, with the highest rate of sunlight. Therefore, the majority of the study participants had been exposed to very high levels of sunlight as they worked in agriculture in rural areas of Antalya. Although there are studies reporting higher rates of NMSC in men than in women (9,11), there are also studies stating that there is no significant difference (10,12,13). In the current study, the men/women ratio was 1.27/1. This may be due to the fact that men work in agricultural field more than women in Serik.

The greatest risk factor for the development of BCC is exposure to ultraviolent radiation (1). This explains geographical variance and why the disease is more common in areas of the body exposed to the sun. The extent of sun exposure in childhood is especially important (1). The area of high recurrence rate as the H zone, which is at high risk because of both functional and cosmetic importance. The anatomical areas at high risk of invisible tumor spread are the nose, ear, eyelid, eyebrow, and temple. Seretis et al. determined that the most common locations of NMSC were the nose and cheek. The most common location of SCC is the lower lip (61%), and those of BCC are the nose (30.4%) and cheek (25.6%) (11). In previous studies, Eskiizmir et al. suggested that the most common locations of BCC and SCC were the nose and lips (16), respectively, and Serdar Yuce et al. reported that BCC was most frequently localized on the nose and SCC on the malar and auricular regions (10). In the current study, BCC was observed more frequently in the nose and cheek areas, while SCC was found more often in the auricular region and lower lips. While the aforementioned results were obtained in the geriatric group, no statistically significant relationship was detected between tumor location and gender in the nongeriatric group ($p>0.05$). When tumor location was evaluated according to gender, the most common location of NMSC in both genders was the nose, although the rates of this lesion location were found to be 50% in women and 32.1% in men. Auricular location was more frequent in men (17.9%) than in women (4.5%), as was the lower lip (10.7% vs.4.5%). Jennifer M et al. also found that men were much more likely to develop NMSC on the ear than woman, and that SCC was more common than BCC (17). This finding may be attributed to the more frequently covered ears of women, as they may cover them with hair or the local custom of women wearing a headscarf. In men, the auricular region may be the most unprotected.

In conclusion; although NMSC is encountered in Turkey more frequently in geriatric patients, it is observable at earlier ages as compared with other Mediterranean countries. Basal cell carcinoma was more frequent in the women population, while SCC was encountered more frequently in the men population. BCC was observed most commonly from lesions in the nose and cheeks, while the lower lips and auricula were observed to be at higher risk in men with regard to NMSC as compared with women.

Further elucidation of the epidemiological and demographic characteristics of patients with NMSC may serve to assist in preventing and curing these types of cancers. Although the current study does not cover Turkey as a whole nation, it remains significant, as it demonstrates the characteristics of NMSC in the sunniest regions of Turkey. The results of the current study, in conjunction with anticipated future studies conducted in other regions of Turkey, may prove useful in determining the ecological and geographical characteristics of this disease.

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