

Skin Growths of the Head and Neck Region in Elderly Patients – Analysis of Two Five-Year Periods in General Hospital Karlovac, Croatia

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ABSTRACT

Skin lesions, benign and malignant, are more common in the older than younger people. Due to the aging of the skin and greater exposure to the impact of ultraviolet rays, their long-term cumulative negative effect, skin lesions are more common in the head and neck area than on other parts of the skin. This paper analyses the pathohistological diagnosis of material after the surgical excision of tumors of the skin on the head and neck of persons older than 60, at the General Hospital Karlovac through two five-year period. The first period is the period from 2006 to 2010 and the second one from 1996 to 2000. The aim was to determine for each period the type and variety of skin lesions, the prevalence of the disease, the age and gender structure, and finally to compare the two periods. The total number of excisions in the first period was 1200, and in the second 513. In both periods more excisions was done in women than men, if compared it comes to 1.4:1. The ratio of malignant (basocellular carcinoma, squamous cell carcinoma and melanomas), and benign tumors (seboreic keratoses, moles and others) in the first period was 49.3 to 46.3%, and in the second 56.7 to 42.1%. Precancerous lesions (actinic keratoses and Mb Bowen's disease) accounted for 4.3% of lesions in the first and 1.2% in the second period. The total number of basocellular carcinoma was 481/232, which makes 81.3% of all malignant tumors in the first, or 79.7% in the second period. Our results showed that around half of all skin lesions removed in both periods consisted of malignant tumors, among which the most common were basal cell carcinomas. High prevalence of malignant non-melanoma skin cancers, 48.7 and 56%, indicate the importance of protection from UV radiation, and early detection and treatment of skin cancer and precancerous lesions.

Key words: skin lesions, the elderly, skin cancer, ultraviolet rays

Introduction

According to the definition of the World Health Organization, the elderly population in the world today is considered to be the one above 60 years of age¹. In Croatia, more than one fifth of the entire population belongs to this category². With the increased life expectancy, the frequency of various skin disorders rises³. The elderly have, in number and frequency, more skin lesions than the young do and are more likely to suffer from skin diseases than the younger generation⁴⁻⁶. There are two main reasons for the higher incidence of lesions on the skin in the elderly: the process of skin aging and skin exposure to the negative influence of the sun. In recent years, a greater attention has been paid to signs of accelerated aging of the skin, with an emphasis on the role of non-ionizing ultraviolet (UV) radiation in that process⁷. In the areas of skin that are constantly and continuously exposed to the sunlight, such as the head and neck region, the occurrence of non-melanoma skin tumors is

more frequent than on other regions⁸. Various skin lesions formed this way are classified as benign, malignant and precancerous growths.

The aim of this study was to determine the diversity and prevalence of skin lesions of the head and neck in patients older than 60 who were treated in two different periods in the Department of Otorhinolaryngology in General Hospital Karlovac.

Patients and Methods

In our retrospective study, we used data from pathohistological findings of skin tumors excisions that were removed from the head and neck, and included only persons older than 60. The results belonged to patients who had the excision made during the two five-year periods in the Department of Otolaryngology (outpatient and inpa-

tient), General Hospital Karlovac. The period we call the first was from 2006 to 2010, and what we call the second from 1996 to 2000. Data about gender, age, type of lesion, i.e. pathohistological diagnosis, and the number of excisions in the individual patient were taken from the findings. The youngest patient was 60, and the oldest 95 years old. The average age for first period was 73.2 ± 7.2 years, and for the second 72.2 ± 7.6 years. In both periods, most of the patients at the time of excision were aged between 70 and 79 years, 48.9% in the first and 42.7% of them in the second period as shown in Figure 1.

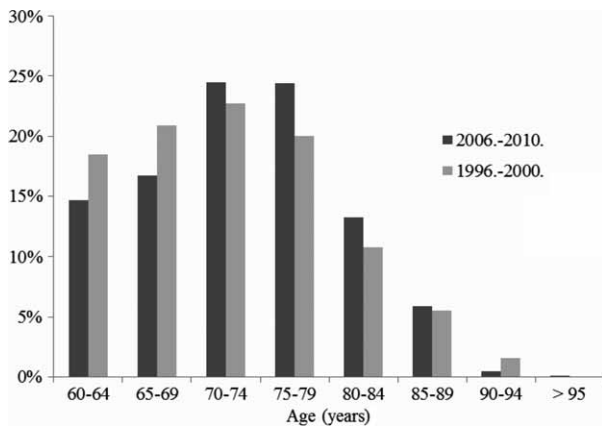


Fig. 1. Age distribution of analysed skin lesions in both researched periods.

Lesions or pathohistological diagnoses are classified according to the division on benign, malignant and precancerous. The benign lesions included seborrheic keratosis, moles and the group consisting of about fifteen other benign pathohistological diagnosis. Malignant tumors classified basocellular carcinoma, squamous cell carcinoma and melanoma, while actinic keratoses and Bowen’s disease belong to precancerous lesions.

Both descriptive and analytical methods were used in the analysis. In order to view the categorical variables, the absolute and the average number were used, while the numerical data were shown as the average and standard deviation. The analytical methods used were chi-square test and analysis of the slope (significance tested using the analysis of variance). All analyses were carried out in the statistical package R, with a significance level set at $p < 0.05$.

Results

In both studied periods, there was 1471 patients older than 60, of which 1017 in the first and 454 in the second period. Given that a patient could have more than one excision, in the first period there was 1200 excisions, and 513 in the second. The number of women dominated in both periods. The ratio of men and women in the first period was 1 to 1.3, in the second period 1 to 1.4. In the first period, from 2000–2010 out of 1200 lesions, 592 were malignant (49.33%), 556 benign (46.33%), and 52 were precancerous (4.33%, Table 1). Basocellular carcinoma was

TABLE 1
DISTRIBUTION OF SKIN GROWTHS IN THE ELDERLY IN TWO PERIODS

Studied period	2006–2010.		1996–2000.	
	N	%	N	%
Malignant lesions	592	49.33	291	56.73
Benign lesions	556	46.33	216	42.11
Precancerous lesions	52	4.33	6	1.17
		100.00		100.00

the most common – 481, which makes 40.08% of the total number of removed skin lesions. There were 103 squamous cell carcinomas that make 8.08% of total removed lesions. Among the malignant tumors, basocellular carcinomas accounted for 81.25% and 17.4% were of squamous cell carcinoma. There were 8 melanomas in the first period, which makes 1.35% of malignant tumors, where one patient had 3 excisions with this pathohistological diagnosis (Table 2). A total number of benign lesions was 556. Most of them were seborrheic keratoses 237 (42.62%), than other benign lesions 204 (36.7%) while there were 115 moles (20.68%, Table 3).

In the second observation period from 1996 to 2000, out of 513 removed lesions, 291 of them were malignant (56.73%), 216 benign (42.11%), and 6 precancerous lesions (1.17%). There were 232 basocellular carcinoma which is 45.22% of total lesions. There were 55 squamous cell carcinomas, which make 10.72% of the total of all lesions. Among malignant tumors of the second period, basocellular carcinoma accounted for 79.72% and 18.9% were squamous cell carcinomas. There were only 4 melanomas in this period which makes 1.37% of malignant tu-

TABLE 2
DISTRIBUTION OF MALIGNANT LESIONS IN THE ELDERLY IN TWO PERIODS

Studied period	2006–2010.		1996–2000.	
	N	%	N	%
BCC	481	81.25	55	79.72
SCC	103	17.4	232	18.9
Melanoma	8	1.35	4	1.37
% of total excisions		49.33		56.73

BCC – basal cell carcinoma, SCC – squamous cell carcinoma

TABLE 3
DISTRIBUTION OF BENIGN LESIONS IN THE ELDERLY IN TWO PERIODS

Studied period	2006–2010		1996–2000	
	N	%	N	%
Seborrheic keratoses	237	42.62	78	36.11
Moles	115	20.68	13	6.02
Other benign lesions	204	36.7	125	57.87
% of total excisions		46.33		42.11

mors. The total number of benign lesions in the second period was 216. Most of them were other benign lesions 125 (57.87%), followed by seborrheic keratoses 78 (36.11%) and 13 moles (6.02%). The most common individual pathohistological diagnosis in both periods was basocellular carcinoma; in the first period present in 40.1% and in the second in 45.2% of all analyzed skin lesions.

In both periods, basocellular carcinoma was more common among women. In the first period they were 12.77% and in the second 16.38% more common in women than in men. This difference is statistically significant for both periods, $p < 0.05$. As far as squamous cell carcinomas are concerned, they were in both periods more present among women than among men. In the first period, they were 34.56% more common and this difference is statistically significant, $X^2_0 = 6.6$, $p < 0.05$, and in the second 8.74% more common, but this difference is not statistically significant, $X^2_0 = 0.1$, $p > 0.05$ (Table 4).

TABLE 4
BASAL CELL AND SQUAMOUS CELL CARCINOMA OCCURENCE
ACCORDING GENDER IN THE ELDERLY

Studied period	2006–2010.		1996–2000.	
	N	%	N	%
BCC m	210	43.66	97	41.81
BCC f	271	56.34	135	58.19
Total	481		232	
SCC m	47	45.63	18	32.72
SCC f	56	54.37	37	67.28
Total	103		55	

The analysis of basocellular and squamous cell carcinoma trends has not proven the existence of any annual trend, $p > 0.05$. For basocellular carcinoma and precancerous lesions the comparison of two periods has not shown statistically significant difference, but the greater number of tumors in the first period for squamous cell carcinoma is significant, $p < 0.05$. The statistically significant difference is not proven in the total number of non-melanoma tumors in our two periods, $p > 0.05$.

Discussion

The elderly population, due to the aging of the skin and the negative long-acting and cumulative impacts of ultraviolet radiation on the skin, has more frequent occurrence of skin lesions than the younger population. Due to the continuous growth in the number of the elderly in the total population, the proportion of those whose skin is damaged by the sunlight increases as well. The exposure to the sunlight is considered the main factor for the development of skin cancer and precancerous lesions of the skin³. Multiple studies have shown that the incidence of non-melanoma skin cancer increases with age^{9,10}.

For the skin that is almost constantly exposed to the sun, and that is the skin covering the head and neck, the most common are non-melanoma malignant tumors, first

of all being basocellular carcinoma, and than squamous cell carcinoma^{11,12}. Basocellular carcinoma are the most common malignant tumors of the skin and make up about 70% of all skin tumors¹³.

Among the most important exogenous factors in the development of basocellular carcinoma are UV and ionizing radiation, certain chemical agents and immunosuppressants, while endogenous factors include inherited skin type and genetic disorder^{14–16}. The prevalence of basocellular carcinoma in our study corresponds to the data from other studies⁸.

Squamous cell carcinoma is the second most common malignant skin tumor. Chronic exposure to UV radiation is in this case the most important risk factor as well. It is more common in men than in women. The most common is in people older than 70¹⁷. Our study showed they were more common in women than in men in both of the periods, and the reason may be that there is higher awareness among women in our county about the need to have suspicious lesions on the skin examined and removed.

Melanomas are among the most aggressive malignant tumors of the skin, although they account for only 3% of total amount¹⁸. Their number in the last decade is increasing, more than of other skin malignancies. The incidence of melanoma increases with age, but the epidemiological data of the study by Buljan et al. about the melanoma in Croatia from 2002–2007 showed that the number of patients in the group older than 60 decreases¹⁹. Data concerning the proportion of melanoma among malignant tumors presented in our study are within those specified by the literature^{11,22}.

Precancerous lesions just like non-melanoma tumors usually appear on the skin exposed to sunlight, in more than 60% cases of the head and neck^{8,20}. Actinic keratosis is the second most common skin lesion in the elderly, after the seborrheic keratosis. This is the most common precancerous lesion, which in 10% of cases malignantly changes into squamous cell carcinoma^{21–23}. Bowen's disease comes right after it and is most common in people older than 60^{8,24}.

Seborrheic keratosis is the most common skin growth in the older age⁴. The frequency varies in different studies from 24.2% to 88%^{25,26}. In our study, the share of seborrheic keratosis in relation to the total number of excision is somewhat smaller. In the first period, there were 19.75%, and in the second 15.2%. The most common individual tumors in our study, in both periods, were basocellular carcinoma.

The share of the removed moles among all benign lesions was in the recent period (2006–2010) almost 15% higher than in the previous period (1996–2000). We assume the reason for it could be in the increasing awareness of the importance of early detection of altered moles and melanoma awareness as being the aggressive skin cancer whose incidence is growing rapidly.

Other benign tumors included fifteen different benign skin lesions. The most common among them in both periods were cornu cutaneum, verrucae vulgaris and cor-

nea, capillary and cavernous hemangioma, keratoacanthoma, pilar and epidermoid cyst, and not so common fibroma, dermatofibroma, pyogenic granuloma, trichofolliculoma, cilidroma and others. In the second period in our study the highest proportion of benign tumors made up 57%, which is 21% more than in the first period, where the largest proportion of benign lesions are seborrheic keratoses.

Conclusion

The risk of malignant skin tumors is greater in the elderly. Twice as many surgical excisions in more recent

reference period indicate the increasing awareness among the older people that growths on the skin should be reviewed by experts and that a suspicious lesion must be removed and pathohistologically verified. UV radiation is the leading exogenous risk factor for the development of the malignant skin lesions²⁷ and the factor whose influence may be significantly reduced by good protection and education^{7,28}. The high prevalence of malignant tumors, especially basocellular carcinoma, indicates the importance of an early detection and treatment of skin cancer and precancerous lesions, which should be the interest of every health care system.

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KOŽNE LEZIJE GLAVE I VRATA U OSOBA STARIJE ŽIVOTNE DOBI – POJAVNOST I USPOREDBA U DVA PETOGODIŠNJA RAZDOBLJA

SAŽETAK

Kožne lezije, i dobroćudne i zloćudne, češće su kod starijih nego kod mlađih osoba. Zbog procesa starenja kože i zbog veće izloženosti utjecaju ultravioletnih (UV) zraka, njihovog dugogodišnjeg kumulativnog negativnog učinka, u području glave i vrata kožnih lezija ima više nego na drugim dijelovima kože. U našem radu analizirali smo patohistološke dijagnoze materijala nakon kirurške ekscizije novotvorina kože glave i vrata osoba starijih od 60 godina u Općoj bolnici Karlovac kroz dva petogodišnja razdoblja. Prvim smo razdobljem imenovali period od 2006.–2010. godine, a drugim period od 1996.–2000. godine. Cilj rada bio je za svako od razdoblja utvrditi vrstu i raznolikost kožnih lezija, frekvenciju obolijevanja, dobnu i spolnu strukturu, te dva razdoblja usporediti. Ukupni broj ekscizija u prvom razdoblju bio je 1200, a u drugom 513. U oba razdoblja više ekscizija bilo je učinjeno kod žena nego muškaraca, u odnosu 1,4:1. Odnos zloćudnih (bazocelularni, planocelularni karcinomi i melanomi) i dobroćudnih tumora (seboroične keratoze, madeži i ostali) u prvom razdoblju iznosio je 49,3%/46,3%, a u drugom 56,7%/42,1%. Predtumorske lezije (aktinične keratoze i Bowenova bolest) činile su 4,3% svih lezija u prvom, odnosno 1,2% u drugom razdoblju. Ukupni broj bazocelularnih karcinoma bio je 481/232, što čini 81,3% svih malignih tumora u prvom, odnosno 79,7% u drugom razdoblju. Naši rezultati su pokazali da su oko polovinu svih uklonjenih kožnih lezija u oba razdoblja činili zloćudni tumori, među kojima najveći udio bazocelularni karcinomi. Visoka prevalencija ne-melanomskih malignih tumora, 48,7%, odnosno 56%, ukazuje na važnost zaštite od UV zračenja, te rane detekcije i liječenja raka kože i pedtumorskih lezija.