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Incidence of basal cell and squamous cell carcinomas among users attended in a cancer hospital

Incidência do carcinoma basocelular e espinocelular em usuários atendidos em um hospital de câncer

Incidencia del carcinoma basocelular y espinocelular en usuarios atendidos en un hospital de cáncer

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The study aimed to evaluate the incidence of nonmelanoma skin cancer (NMSC) from pathological biopsies of patients seen in an oncology hospital. It was a descriptive, quantitative and retrospective study, in which, between January 2015 and May 2016, 81 biopsies were evaluated. 40 biopsies with basal cell carcinoma were found - BCC (51.81%), 22 with squamous cell carcinoma - SCC (24.69 %), 3 with cutaneous melanoma - CM (3.7%) and 16 with other diagnoses (19.75%). Regarding the variable gender, a total of 48 women (77.41%) and 14 men (25.59%) with NMSC were found. Among people with NMSC, 56 were white-skinned people (89.29%), and 6 had yellow skin (10.71%). The study concluded that the NMSC is the most frequent skin cancer in the region, with higher incidence in females and in clear skinned people. It was also directly proportional to age.
Descriptors: Skin neoplasms; Carcinoma basal cell; Carcinoma squamous cell.

Este estudo buscou avaliar a incidência de câncer de pele não melanoma, a partir de biópsias anatomopatológicas de usuários de um hospital do câncer. Estudo descritivo, quantitativo e retrospectivo onde foram avaliados 81 exames entre janeiro de 2015 e maio de 2016. Encontrou-se 42 biópsias com carcinoma basocelular (CBC), (51,85%), 20 com carcinoma espinocelular – CEC (24,69%), 3 com melanoma cutâneo - MC (3,7%) e 16 com outros diagnósticos (19,75%). Com a variável sexo achou-se o total de 48 de mulheres com CPNM (77,41%) e 14 homens (25,59%). Entre todos os CPNM têm-se 56 pessoas de pele branca (89,29%) e 6 de pele amarela (10,71%). O estudo concluiu que o CPNM é o mais incidente câncer de pele na região, com maior incidência no sexo feminino, em pessoas de pele clara sendo diretamente proporcional com o aumento da idade.
Descritores: Neoplasias cutâneas; Carcinoma basocelular; Carcinoma de células escamosas.

El objetivo del estudio fue evaluar la incidencia de cáncer de piel no melanoma (CPNM) a partir de biopsias patológicas de los usuarios atendidos en un hospital de cáncer. Estudio descriptivo, cuantitativo y retrospectivo, donde fueron evaluados 81 exámenes entre enero de 2015 y mayo de 2016. Se encontraron 40 biopsias con carcinoma basocelular (CBC), (51,85%), 20 con carcinoma espinocelular (CEC) (24,69%), 3 con melanoma cutáneo - MC (3,7%) y 16 con otros diagnósticos (19.75%). Con la variable sexo se encontró un total de 48 mujeres con CPNM (77,41%) y 14 hombres (25,59%). En todos los CPNM 56 han sido personas de piel blanca (89,29%) y 6 de piel amarilla (10,71%). El estudio concluyó que el CPNM es el cáncer de piel más frecuente en la región, con mayor incidencia en el sexo femenino, en las personas de piel clara y directamente proporcional con el aumento de la edad.
Descriptores: Neoplasias cutáneas; Carcinoma basocelular; Carcinoma de células escamosas.

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INTRODUCTION

There are three types of skin cancer, evaluated according to their gravity: the Basal Cell Carcinoma (BCC) and the Squamous Cell Carcinoma (SCC) - both called NMSC, and the Malignant Melanoma (MM)[1]. The estimate percentage of each NMSC in Brazil are approximately 70% for the BCC and 25% for the SCC[2]. For the MM, the estimate is 4% 2. In spite of the high incidence, non-melanoma skin tumors are not highly lethal, in cases detected early[3]. This information is, under no circumstances, reason to see the epidemiological data regarding the NMSK as irrelevant.

The BCC is the most common of skin tumors, and it appears in parts of the body which are highly exposed to sun light[1,4]. The appearance of this tumor is directly proportional to the age of the individual, and to how much sun light they were exposed to[4]. However, the appearance of the BCC is inversely proportional to the amount of melanin in one's skin[4].

It is the most incident tumor, although it is the least aggressive[4-7]. The most common site for its appearance is in the face, although it also appears in other regions[4,6,7]. The BCC is also found in other regions that have been frequently exposed to the sun for long periods of time[4,5].

It has a slow growth, and hardly ever metastasizes[4-7]. It originates from the basal pluripotent immature epithelial cells from the epidermis[1] It is believed that the BCC develops from the embryonic rests of cutaneous annexes. The preferred term to refer to BCCs is carcinoma, instead of epithelioma[5].

According to its clinical characterization, the BCC presents pearly papules with potentially ulcerative talangiectasia[4,6]. One of its characteristics is bleeding, as wound that does not heal. It is important to highlight that an undiagnosed and untreated BCC may become invasive and destructive[6].

The SCC represents 25% of skin tumors, and it stems from the squamous epithelium of the skin[8,9]. It is curable and, if detected early, has a good prognosis. Unlike the BCC, the SCC is more capable of producing lymphatic and visceral metastasis [5,69]. The SCC is more incident in men than in women[1,6,11]. It is important to highlight that this carcinoma is capable of growing from a pre-existing skin wound, including actinic keratosis, a diagnosis frequently found in cutaneous biopsies[4,5,612].

Clinically, the SCC is more commonly located on the face, the ears, nose, neck, on the back of the hands, and on the oral and genital mucous membranes. It manifests as a persistent, scaly ad red rash, with irregular borders, that bleeds easily. It can also appear as a rough lesion[1,4,11].

From a histological point of view, the SCC stems from epithelial squamous skin cells with a tendency to keratinization. The smaller the histological differentiation, the more malignant the disease is[5,6].

Skin cancer is relatively rare in children and black skinned people, except those with previous cutaneous conditions[1,4-6]. Fair-skinned people, sensible to the action of sunlight, are the most commonly affected[1,4,6]. The general risk factors for the development of cutaneous cancer are: exposure to the sun, exposure to radiation, age, gender (male), fair skin, exposure to chemicals (arsenic, tar, coal, paraffin), skin inflammation or injury, dry skin, psoriasis treatment, smoking, compromised immunity, Human Papillomavirus (HPV), and Gorlin Syndrome[1,4,6,12,13].

The term "radiation" refers to the emission of electromagnetic waves, examples of which are the sun radiation, radio waves, alpha and gamma rays[10]. The ultraviolet radiation (UVR), one of the main risk factors of skin cancer, consists of invisible waves emitted by the sun, which are classified as UVA, UVB and UVC, according to their wavelengths[10,12]. The UVR that affect the human skin are the UVA and UVB. The UVC is absorbed by the ozone layer[12,14]. The UVA radiation has a longer wavelength, that triggers oxidation processes[15]. The UVB radiation is responsible for generating direct damage to the cell deoxyribonucleic acid (DNA), thus leading and promoting the beginning of a neoplastic process[15,16].

Brazil is in a region of the planet with high rates of UVR exposure. Therefore, fair-skinned people in Brazil are constantly exposed to UVR, and are more likely to develop skin cancer due to this risk factor[15].

This study aimed at evaluating the incidence of non-melanoma skin cancer (NMSC), from the anatomopathological biopsies of users attended in a cancer hospital.

METHOD
This was a descriptive, quantitative and retrospective study, where 81 anatomopathological cutaneous diagnose biopsies were collected, processed, and analyzed, together with the records of patients who were attended in an oncology hospital in a city in the Alto Paranaíba / Triângulo Mineiro Region, in the State of Minas Gerais, with nearly 90,000 inhabitants.

The evaluation criteria for the cutaneous biopsies was based on medical consultations undergone by the users in the Oncology Hospital Dr. José Figueiredo, in the period between January 2015 and May 2016, after the skin biopsy results were ready. The hystological details of the exams and the location of the alterations in the body were not analyzed; the only thing considered was the NMSC diagnosis in the exam analysis and medical records. The results of the biopsies were divided in BCC, SCC, and CM other diagnosis/inconclusive results.

The variables gender, age and skin color were collected from the users' medical records. There were no limits for the amount of people from the same gender for their age, for the elaboration of the sample. The variable skin color was verified through the register of the user in the institution according to their ID. It was also present in the medical records, which contained basic information about the patients. The variable skin color was divided in white, yellow, and black skin. The variable age was divided in 30-39, 40-59, 50-69 and 70 or more years of age.

The 81 biopsies were evaluated according to the diagnosis, together with the analysis of the records of the users, while the

institution was nonactive, as to preserve the anonymity of the patients, as well as to avoid potential disorders and complications in the work dynamic of the institution.

Data was processed and managed with the use of the software Excel®, 2007, with the elaboration of tables and charts with exploratory analysis for the explanation of the data found. The non-parametric Pearson Chi-square test was conducted to evaluate the incidence of the BCC, the SCC and the CM, isolating the total sample, and the level of significance (α) was established at 5%. The freedom degree (f.d) was 2.

To conduct the research and the data collection, a previous authorization was asked from the institution and the competent authorities, including the delivery of an informed free consent form. Thus, the anonymity of the patients was guaranteed, and they had their exams and records evaluated. As soon as the authorization was granted, data were collected, processed and evaluated, to elaborate the results and discuss the findings.

This research was authorized by the Oncology Hospital Dr. José Figueiredo, by the competent authorities. The study is according to the criteria of Resolution 466/2012, by the National Council of Health (CNS).

RESULTS
In the analysis of the study variables, the diagnoses of BCC, SCC, CM, actinic keratosis, and seborrheic keratosis were found. The BCC and SCC results were the focus of this research. Other diagnosis were not detailed in the study, and are classified under the tags "CM" and "other diagnosis", for the epidemiological purposes of the studies suggested by this research.

Analyzing the sample according to the incidence of the diagnosed skin neoplasms, which represented 65 results among the 81 analyzed ones, it was found: BCC (64.4%), SCC (30.76%) and CM (4.61%). The Pearson Chi-square test, applied to this sample, with α 5% and f.d. 2, gave a result of 1.195 (p < 0.05).

The incidence of BCC was higher than that of SCC. Among the 81 biopsies evaluated,

42 were found to indicate BCC (51.85%), 20 SCC (24.69%), 3 CM (3.7%) and 16 indicated other diagnosis or inconclusive results (19.75%) (Table 1).

The gender variable indicated a higher number of women (69.4%) with BCC and SCC results than men (29.6%). Specifically from BCC, 10 men (23.8%) and 32 women (76.2%) were found to have the disease. In the case of SCC, 4 men (20%) and 16 women (60%) were diagnosed. That represents a total of 14 NMSC in men and 48 in women (Table 1).

Table 1. Incidence of BCC, SCC and CM diagnoses and other gender-related diagnoses in cutaneous biopsies evaluated from January 2015 to May 2016. Oncology Hospital Dr. José Figueiredo. Patrocínio/MG, Brazil.

Gender	BCC	%	SCC	%	Melanomas	%	Other diagnoses	%
Female	32	39.51	16	19.75	2	2.46	10	12.34
Male	10	12.34	4	4.94	1	1.23	6	7.41
Results	42	51.85	20	24.69	3	3.7	16	19.75

Regarding skin color, 29 females and 10 males with white skin were diagnosed with BCC. The same was true for 3 women with yellow skin, whereas no men with this skin color were found. For the SCC, on the other hand, 14 women and 3 men diagnosed were white-skinned. Among the biopsies of yellow-skinned people, only 2 women and 1 man were diagnosed with SCC. No black-skinned individuals were diagnosed with any NMSCs (Chart 1).

Graphic 1 shows that most people affected by the tumors are white-skinned.

Among those diagnosed with NMSC, 56 people are white-skinned (89.29%), and 6 are yellow-skinned (10.71%). From the 62 biopsies that presented NMSC, 69.35% of people were white skinned women and 8.06% were yellow-skinned women. Among men, 20.96% had white skin, and 1.61%, yellow. Considering the gender of the participants, that sums up to a total of 48 (77.41%) women and 14 (25.59%) men with NMSC.

Graphic 1. Incidence of the BCC and SCC diagnosis classified by gender and skin color in the biopsies with the diagnosis non-melanoma skin carcinoma, from January 2015 to May 2016. Oncology Hospital Dr. José Figueiredo. Patrocínio/MG, Brazil.
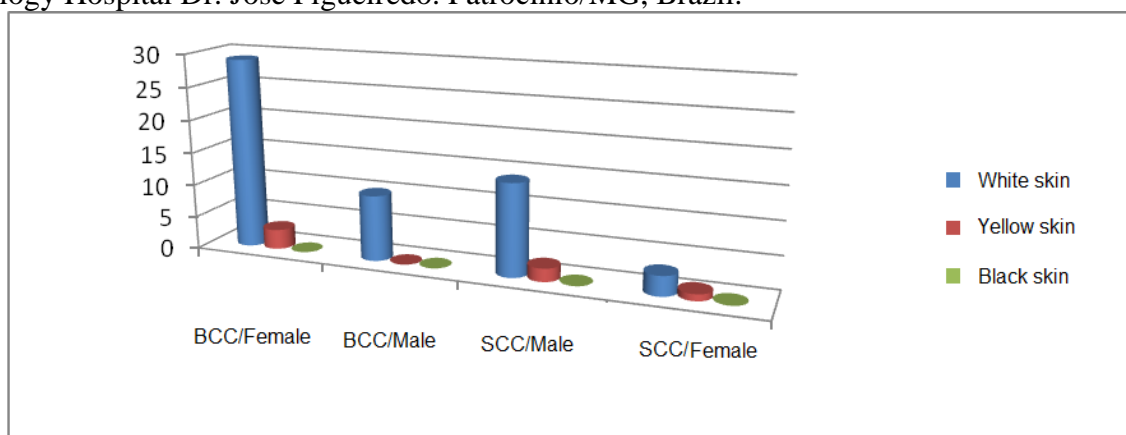
Regarding age, among females, the NMSC was found in 2 women (3.22%) between 30 and 39 years of age, 7 women (11.29%) from 40 to 49 years of age, 12 women (19.4%) between 50 and 59 years of age, 11 women (19.36%) from 60 to 69 years of age and 15 women (24.19%) who were 70 years of age or older. Considering the males and the variable age, 3 men (4.83%) were between 40 and 49 years of age, 2 (3.2%)

were between 50 and 59 years of age, 3 (4.84%) between 60 and 69 years of age, and 6 (9.67%) were older than 70. (9,67%). From the 62 people with a NMSC diagnosis, 48 (77.41%) were women and 14 (25.59%) were men (Table 2).

Table 2. Incidence of the NMSC by gender and age in the biopsies with a specific diagnosis of NMSC, from January 2015 to May 2016. Oncology Hospital Dr. José Figueiredo. Patrocínio/MG, Brazil.

Gender	30/39 years of age		40/49 years of age		50/59 years of age		60/69 years of age		70 years of age and more	
	n	%	n	%	n	%	n	%	n	%
Male	0	0	3	4.83	2	3.2	3	4.84	6	9.67
Female	2	3.22	7	11.29	12	19.4	12	19.36	15	24.19
Results	2	3.22	10	16.12	14	22.6	15	24.20	21	33.80

DISCUSSION

The study was conducted in a region in which, due to the agriculture driven economy, people tend to be more exposed to the UVR, an important risk factor to develop skin tumors[1-5]. Excessive exposure to the sun, when it happens in the childhood and in adolescence, can influence in the development of cancer in the future[18]. Preventive actions are, therefore, necessary since childhood, and should be encouraged through social actions to raise awareness[1-4,15].

Specific, planned, multi-professional and intersectoral actions targeted at the health of people and focused on skin tumors, should be stimulated and implemented[18]. These actions will have immediate impacts in the quality of life of people, families, and of society in the region.

The white-skinned users are the population most commonly affected by the NMSC[4,5,6,15].

From the analysis of the biopsies, the fact that BCC is more incident is clearly confirmed. It is, therefore, the most common skin tumor in the population studied. The SCC, however, is the second in number of cases. These epidemiological results confirm the estimates which indicate that the BCC is more common than the SCC[1,3-5,16-18].

The incidence of BCC and SCC increases with age, and actions to promote and prevent the diseases become necessary, as to avoid these tumors that are confirmed to be incident and to possibly lead to complications, if undiagnosed and untreated[12,13]. The evaluations indicate that the NMSC is more common among people over 40 years of age, and that it proportionally increases according to age. That corroborates data that can be found in other references[5,19].

The number of females diagnosed with BCC and SCC is higher than that of males. This finding corroborates that of another study, which proposes that the variable gender, when it comes to incidence, is determined by the studied population[6]. The fact that women seek health services more often than men can be inferred, a phenomenon already observed in the primary health care - which is the main entryway for health services[20-22]. It is also necessary to evaluate whether the women in the region are being more exposed to UVR, which would explain the findings of this research[1-5].

Data regarding non-melanoma skin tumors need to be recorded more judiciously for epidemiological reasons - including the first registration of the user in the health service, the notes of university grade professionals such as physicians and nurses, and even the reports of laboratory tests[23].

Information such as: place of birth and of residence, cutaneous characteristics, family history, life habits (including smoking and eating habits), occupational data and previous history of diseases, become relevant sistematic and detailed studies to be conducted[23].

CONCLUSION

The study has found that NMSC is the most common skin cancer in the region and in the

time period considered. It is more incident among women and light-skinned people, and is proportional to age. The research indicates how relevant it is to intensify actions of promotion, prevention, early diagnosis and rehabilitation.

This research allows for the continuity of studies in cases of tumor recurrence, carcinoma emergence from pre-existing lesions, tumor localization, hystopathological characteristics, tumor diagnosis, occupational profile of users affected, perspectives of oncology professionals from the region, estimates of tumor incidence, specific propositions for promotion and prevention, actions to raise awareness and fight cancer in the region, among others.

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CONTRIBUTIONS
Ricardo Dias da Silva was responsible for the design of the study, data collection, analysis and for the final writing of the article. **Meyre Aparecida Inácio Dias** was responsible for the data collection and final revision.

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