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Characteristics of melanoma in the elderly

Características do melanoma em idosos

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ABSTRACT

Objective: This study evaluates melanoma characteristics in the elderly. **Methods:** A retrospective descriptive analytical study was carried out by reviewing the medical records of patients aged 60 years or older, diagnosed with primary cutaneous melanoma, and treated at Hospital Erasto Gaertner, Curitiba, Paraná, from 2013 to 2017. **Results:** We studied 139 patients aged 60-98 years (average, 70.3 years) and found melanoma to be more common in women (52.5%) than in men. Lesions mainly affected the limbs (32.3%) and head (24.4%), showed signs of ulceration (33.8%), and could be classified into the nodular histological (29%), extensive superficial (27%), and acral (12%) types. The average Breslow index was 1.2 mm. Metastasis occurred in 33% of the patients and mainly affected lymph nodes (36%) and the central nervous system (CNS, 20%). The first procedure conducted in 79% of the cases was surgical resection. Sentinel node mapping was carried out in 41.7% of the cases, and surgical treatment alone was indicated in 70% of the patients. The disease recurred in 34.5% of the patients, and 17.9% succumbed to the disease. These results indicate that the elderly have poorer prognosis when cancer treatment is delayed. **Conclusion:** Melanoma of the limbs and head, intermediate Breslow index, metastatic lymph node and CNS metastases, and relapse result in fatal outcomes. Direct strategies, such as prevention and early detection, as well as uniform and adequate treatment, are needed to improve disease management in the elderly.

HEADINGS: Melanoma. Surgical Oncology. Health of the Elderly.

INTRODUCTION

Life expectancy has increased worldwide over the last decade[1]. The population of persons aged over 60 years has been estimated to double by 2050, while that of persons aged over 80 years is expected to increase by four times[2]. The prevalence of melanoma in persons aged 65 years and older has increased by three times in the last 25 years; indeed, approximately 41% of the patients, at diagnosis, are elderly[3]. Melanoma is the 19th most prevalent type of cancer worldwide and has an incidence of 3.3 per 100 million[4]. In Brazil alone, 2,920 new cases among men and 3,340 among women were registered in 2017[4].

In Europe, Australia, and the United States, the elderly represent over 50% of patients with melanoma[5]. The disease may occur in the skin, mucosa, and other body regions[6]. Melanoma has multiple risk factors, including genetic and environmental factors. Skin pigmentation, various nevi, a family history of melanoma and previous sunburn. Unprotected and cumulative sun exposure are other known risk factors of the disease[1,8].

Low visual acuity, numerous nevi, actinic keratosis, and the development of skin lesions in the scalp can interfere with the self-perception of skin alterations in the elderly, and contribute to the difficulty of early diagnosis[4,9,10]. Asymmetry (A), irregular and ill-defined boundaries (B), color alterations (C), a diameter larger than 6 mm (D), and recent evolution or elevation of the lesion (E) are the ABCDE of melanoma diagnosis[4,11]. Suspected melanoma must be confirmed by histopathological analysis[11].

Melanoma may be classified into superficial spreading, nodular, acral, and malignant lentigo types. However, lesions may also manifest as other unique patterns[12] depending on the age of the patient[13]. Senescence lowers the response of the immune system against cancer and results in higher mortality in the elderly.

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Research indicates that the elderly present with a higher Breslow index and higher prevalence of metastasis at initial diagnosis than their younger counterparts[14].

Early diagnosis of melanoma is extremely important to improve the prognosis[15]. Lesion staging and histopathological confirmation can help determine optimal treatment[16]. Local excision surgery with enlarged margins[4,17] is the main treatment in the initial phase of the disease[16,17]. For groups with a high recurrence rate, adjuvant therapy, such as systemic chemotherapy, alpha interferon, biochemotherapy, autoimmune agents, hormonal agents, and vaccines may be indicated[6]. However, these adjuvant therapies are ineffective in the case of metastasis[16,17]. A previous study revealed that less than 10% of patients survive 5 years after a diagnosis of metastasis[17].

Elderly patients and their related factors such as life expectancy, functional status, comorbidities, nutrition, polypharmacy, and social support must be considered during treatment[1]. Given the observed increase in life expectancy and the fact that advanced age is associated with a poor prognosis of melanoma, the impact of the disease on the elderly should raise the health care professionals' awareness to lead to adequate public health policies.

METHOD

A retrospective study was carried out by analyzing the medical records of melanoma patients at Hospital Erasto Gaertner, Curitiba, Paraná. The characteristics of melanoma in the elderly were assessed. The selection of cases was randomly conducted (95% CI). This project was approved by the relevant ethics committee (CEP HEG - CAAE: 87770618.7.0000.0098) and followed the CNS Resolution 466/2012.

Patients aged 60 years or older, of any ethnicity and sex, with anatomopathological confirmation of primary cutaneous melanoma, and treated at Hospital Erasto Gaertner from January 01, 2013 to December 31, 2017 were included. Persons aged less than 60 years, with other types of neoplasms, suspected or unconfirmed melanoma, and with no medical record availability were excluded.

The data collected included: sex, age at diagnosis, anatomical location, symptoms/signs (itching, pain, color changes, growth, bleeding), extent of the lesion, treatment performed, metastasis, and death. The analyzed histopathological characteristics included: histological type (extensive, nodular, acral, lentigo), ulceration, regression, angiolymphatic invasion, peritumoral lymphocytic infiltration, margin involvement, mitotic index (MI), Breslow thickness, and Clark level. The death rate was determined considering only those patients who had this registered in the hospital medical records. The variables were compared by the chi-squared test using IBM SPSS Statistics version 22 with a significance level of $p<0.05$.

RESULTS

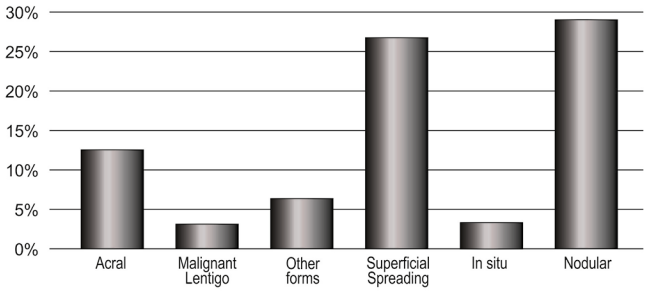
The sample comprised 139 patients, average age of 70.3 ± 8.3 years (range 60-98 years); 52.5% of the cases were women. Most of the patients did not have a family history (97%) or symptoms/signs at diagnosis (99.2%).

The initial lesion was located on the arm or leg (32.3%), head (24.4%), trunk (22.3%), foot or hand (17.6%), and neck (2.15%). Approximately 7.9% of the primary melanomas were tumors <1 cm in length; 19.1% of the tumors measured 1-2 cm, 15.1% measured between 2 and 3 cm, 9.35% measured between 3 and 4 cm, and 14.3% had >4 cm. No information on size was available for 34.5% of the tumors (Table 1).

The histological types were nodular (29.5%), superficial spreading (27.3%), acral (11.5%), in situ (3%), and malignant lentigo (2.9%). This information was absent in 28 records, and 9 records revealed other forms of melanoma, such as the desmoplastic and amelanotic types (Figure 1).

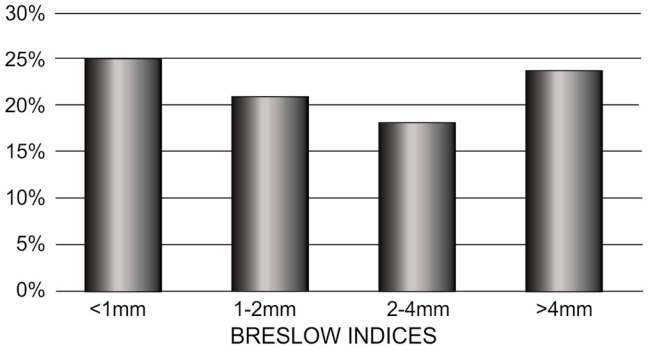
Table 1. *Characteristics of melanoma according to gender.*

	MALE		FEMALE		TOTAL	
	n	**%**	**n**	**%**	**n**	**%**
	66	**47.5**	**73**	**52.5**	**139**	**100**
SITE						
Head	21	31,8	13	17,8	34	24,4
Neck	1	1,5	2	2,7	3	2,15
Trunk	19	28,8	12	16,4	31	22,3
Arm or leg	14	21,2	31	42,4	45	32,3
Foot or hand	9	13,6	15	20,5	24	17,6
HISTOLOGICAL TYPE						
Nodular	17	25,7	24	32,8	41	29,5
Superficial spreading	14	21,2	24	32,8	38	27,3
Acral	7	10,6	9	12,3	16	11,5
Lentigo maligna	1	1,5	3	4,1	4	2,9
Others	7	10,6	7	9,5	14	10,1
BRESLOW						
< 1 mm	14	21,2	21	28,8	35	25,2
> 1mm	48	72,7	40	54,8	88	63,3
CLARK						
I	0	0	1	1,4	1	0,72
II	10	15,1	14	19,2	24	17,3
III	20	30,3	14	19,2	34	24,5
IV	6	9,1	10	13,7	16	11,5
V	4	6,1	8	11	12	8,6

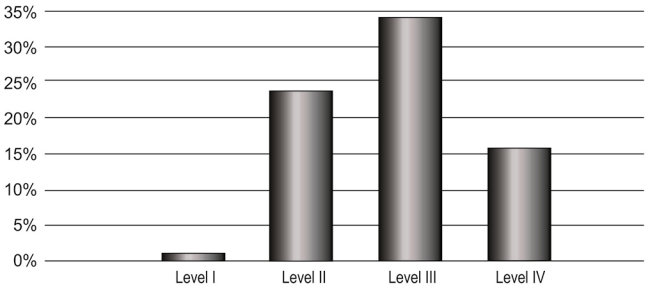


Graph 1. *Distribution of histological types of melanoma in elderly.*

The anatomopathological aspects of the 139 cases revealed that 69 (49.6%) had peritumoral lymphocytic infiltration, 47 (33.8%) had ulceration, 40 (28.7%) showed signs of regression, and 5 (3.59%) had angiolymphatic invasion. The average MI was 5.6. Specifically, 67 (48.2%) patients had MI < 5, 39 (28%) had MI = 5, and there was no information on the MI in 33 cases (13.8%). The average Breslow index was 3.7 mm (Figures 2 and 3).

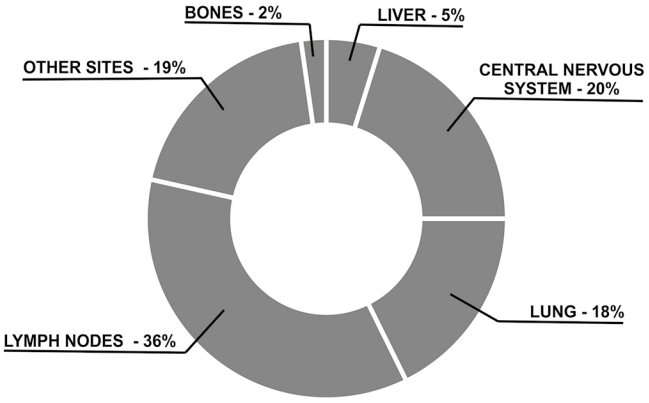


Graph 2. *Results of Breslow indices in elderly melanomas.*



Graph 3. *Results of Clark's levels in elderly melanomas.*

Most patients (66.9%) did not present metastasis. Of the 46 cases who presented metastasis (33%), the affected sites were lymph nodes (36%), the central nervous system (CNS, 20%), the liver (5%), the lungs (18%), the bones (2%), and other locations (19%), such as the adrenal glands, spleen, and intestine (Figure 4).



Graph 4. *Affected sites of melanoma metastasis in the elderly.*

Complete surgical resection was initially performed in 79% of the patients, while incisional biopsy was first performed in 20.8% of the patients. Sentinel lymph node survey was necessary for 41.7% of the cases. The most widely used therapeutic approach was isolated surgical treatment (98 patients; 70%). A total of 38 individuals (27.3%) required associated adjuvant treatment, such as immunotherapy (55.2%), chemotherapy (44.7%), and radiotherapy (42.1%). Only one patient (0.7%) underwent chemotherapy alone, and one patient underwent (0.7%) radiotherapy alone. The rate of disease recurrence after treatment was 34.5%. Only 8.6% of the lesions had a record of margin involvement in the post-surgical period. Finally, 25 patients (17.9%) died within the assessed study period.

DISCUSSION

Population aging is a public health concern. The present study sought to assess the characteristics of melanoma in the elderly living in the southern region of Brazil. In contrast to literature reports[2-5,18,19], the present analysis revealed that the disease shows relatively similar prevalence between women and men (52.5% vs. 47.5%). This difference may be due to methodological and/or population variations among study samples.

The main lesion anatomic region, in limbs (32%), in the elderly corroborates the findings of Chang et al. (2003)[14] but differs from other authors[3, 5,18,19], who indicated a higher prevalence of head and neck lesions in the elderly when compared with younger patients. Cephalic involvement is associated with poor prognosis because of the risk of central nervous system metastasis and difficulty in excising the lesion with safe margins[2].

The most frequent type of melanoma, in the current data, is the superficial spreading form, which appears to show no distinction among age groups[14,19]. Moreover, in the present study, the histological types were nodular (29%), superficial spreading (27%), and acral (12%). Compared with young adults, the elderly have increased rates of nodular melanoma[3] and mortality, due to the rapid vertical growth and extension of the cancer[2,10].

Previous studies argued that the nodular subtype of melanoma does not meet some of the ABCDE disease criteria, which leads to a delay in diagnosis[19]. Moreover, regardless of the form of the disease, advancing age increases the difficulty of self-examination due to the reduced vision capacity, social isolation, limited health system access, and inability to distinguish benign from malignant lesions, which may or may not be pigmented[3,19,20].

An earlier study with patients older than 56 years of age showed higher values of Breslow's index. Values greater than 4 mm showed a prevalence of 5% in the younger elderly, contrasting with 11% in the elderly[2], which indicates a more invasive disease, and higher mortality with increasing age. In the present research, the average Breslow index was 3.7 mm, which is higher than that reported in the literature[18,19], which indicates a mean Breslow index between 2.3 and 2.4 mm in the elderly and 1.35 mm in young adults.

Tumors tend to be ulcerated and thick in the elderly[10]. In the present sample, ulceration occurred in 33.8% of the cases, a result similar to data by Chang et al. (2003)[14], who demonstrated tumor ulceration in 30.5% of those older than 65 years of age, and Macdonald et al. (2011)[18], who revealed ulceration in 29% of patients over 70 years of age. The average MI was 5.6; this value is higher than that reported in the literature, which is 2.9 in patients older than 50 years of age.

In our study, 66.9% of the patients did not present metastasis during follow-up, at the hospital. Among those with metastasis (33.1%), the main site affected was the lymph nodes (36%). However, although it is the anatomic region with the greatest dissemination, the incidence of lymph node metastasis in elderly patients is lower compared with that in younger individuals[13]. Another study indicated that patients over 65 years old have advanced disease at initial diagnosis[10].

Surgery remains the gold standard for melanoma treatment[17,20] and was the treatment of choice in the vast majority of our patients. Indeed, surgery was adopted as the only treatment in 70% of the cases, and positive results in the localized lesion were obtained. Elderly patients undertreated with safe margins compromised 22.3% of the cases of Tragos and Hieken (2011)[3] and 16.8% of the patients reported by Ciocan et al. (2013)[19]. In the present study, only 8.6% of the patients had lesions in the margins of the surgical specimen, a lower rate than that reported in the literature, which demonstrates a satisfactory result.

In the literature, 53,3% of the patients received adjuvant therapy[19], contrasting the 27,3% of our elderly who received such therapy. This difference may be due to the lack of standardized protocols for this age group, the presence of comorbidities, the patients' inability to tolerate adverse side effects, reduced autonomy, and/or psychosocial or financial dependence. Approximately 17.9% of the evaluated patients died due to the disease. Although mortality is generally higher in the extremely elderly[2,13,14], no significant difference in patient mortality among age groups was observed in the current study.

Sample size and the retrospective design is a limitation of our study. Nonetheless, we have been able to show details of melanoma in the elderly, especially in terms of nodular histological type, presence of ulceration, mitotic rate, and location on the limbs and head. Photoprotective measures and knowledge regarding prognostic factors can improve patient monitoring[22]. Although advanced age is recognized as a poor independent prognostic factor, provision of adequate care remains essential to improve the quality of life of patients.

A suspected melanoma can easily be confirmed by physicians through adequate physical examination, in particular of the skin, which is a quick and non-invasive procedure. A thorough physical examination can positively influence the early detection of the disease.

CONCLUSION

The characteristics of melanoma in the elderly included nodular and superficial spreading, presence on the limbs and head, high Breslow index, lymph node and/or CNS metastasis, and history of recurrence. Continuing education on cutaneous oncology is recommended to improve the prevention, detection, and treatment of melanoma in this population.

RESUMO

Objetivo: *Avaliar características do melanoma em idosos.* **Método:** *Pesquisa retrospectiva mediante revisão de prontuários de idosos diagnosticados com melanoma cutâneo primário, no período de 2013 a 2017, atendidos no Hospital Erasto Gaertner, em Curitiba-Paraná.* **Resultados:** *Amostra com 139 pacientes, mulheres (52,5%), média de 70,3 anos de idade, com lesão em membro superior ou membro inferior (32,3%) e cabeça (24,4%), sinais de ulceração (33,8%) e classificação em tipo histológico nodular (29,5%), extensivo superficial (27,3%) e acral (11,5%). Média do índice de Breslow de 3,7 mm. Metástases ocorreram em 33% dos pacientes, para linfonodos (36%) e sistema nervoso central (20%). Pesquisa do linfonodo sentinela foi realizada em 41,7% e tratamento cirúrgico isolado em 70% dos casos. Houve recidiva em 34,5% pacientes e 17,9% evoluíram com óbito. Esses achados apontam características prognósticas sombrias relacionadas ao diagnóstico e tratamento tardio da neoplasia.* **Conclusões:** *Melanoma em membros e cabeça, índice de Breslow intermediário, metastático para linfonodos e sistema nervoso central, recidiva e tem desfecho fatal. Há necessidade de direcionar estratégias para melhor abordagem da doença em idosos, como prevenção, detecção precoce e oferta de tratamento uniforme e adequado.*

Palavras-chave: *Melanoma. Cirurgia Oncológica. Saúde do Idoso.*

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