

Cutaneous Melanoma in a University Hospital, 2001-2016

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ABSTRACT

Introduction: Melanoma is the main cause of death among primary skin neoplasms. The worldwide incidence has been increasing, however there is scarce national epidemiological information. **Objective:** Analyze the epidemiological and histopathological profile of cutaneous melanomas diagnosed at a university hospital in the last 16 years. **Method:** Historical series of cutaneous melanoma cases from review of charts and histopathological reports from 2001 to 2016. **Results:** The mean frequency over the years was 2.99 melanomas for every 1,000 new outpatient visits. The casuistry consisted of 224 cases of cutaneous melanomas in 211 patients, Caucasians (98.6%), women (55.9%), with mean age of 57.3 years. The mean time between onset of the lesion (time since the appearance of the lesion or since it began to change reported by the patient) and diagnosis was 4.8 years. The predominant tumor size was 0.5 to 2 cm, affecting the cephalic region in individuals older than 60 years and torso in those younger than 60 years. "Other melanomas" (34.8%) and superficial spreading melanoma (31.7%) were the predominant subtypes. Most of the cases had Breslow index ≤ 1 mm (70% of patients). The thinnest subtypes (≤ 1 mm) were superficial spreading melanoma and lentigo maligna. Nodular melanomas had intermediate Breslow (1 to 4 mm) or thick (≥ 4 mm) with high dissemination rate and lymph node metastasis. **Conclusion:** The frequency remained stable. Population below 60 years old had a higher prevalence. The most frequent subtypes were "other melanomas" and extensive superficial located mainly in the cephalic and torso regions.

Key words: Melanoma/epidemiology; Skin Neoplasms/epidemiology; Skin Diseases.

RESUMO

Introdução: O melanoma é a principal causa de morte entre as neoplasias malignas cutâneas primárias. Sua incidência mundial vem aumentando progressivamente, entretanto, existem escassas informações epidemiológicas nacionais. **Objetivo:** Analisar os perfis epidemiológico e histopatológico de melanomas cutâneos diagnosticados em hospital universitário nos últimos 16 anos. **Método:** Série histórica de casos de melanoma cutâneo realizada por meio da revisão de prontuários e laudos histopatológicos de 2001 a 2016. **Resultados:** A frequência manteve-se com média de 2,99 melanomas por mil novos atendimentos ambulatoriais. A casuística foi de 224 melanomas cutâneos em 211 pacientes, brancos (98,6%), mulheres (55,9%), com idade média de 57,3 anos. O tempo médio entre o aparecimento da lesão (desde surgimento da lesão ou desde que a lesão começou a se modificar, relatado pelo paciente) e o diagnóstico foi 4,8 anos. O tamanho predominante foi de 0,5 a 2 cm, acometendo principalmente a região céfálica em indivíduos maiores de 60 anos e troncular naqueles menores de 60 anos. "Outros melanomas" (34,8%) e melanoma extensivo superficial (31,7%) foram os subtipos mais frequentes. A maioria dos casos apresentou índice de Breslow ≤ 1 mm (70%). Os subtipos mais finos (≤ 1 mm) foram extensivo superficial e lentigo maligno. Melanomas nodulares possuíam Breslow intermediário (1 a 4 mm) ou espesso (≥ 4 mm) com altas taxas de disseminação e metástase linfonodal. **Conclusão:** A frequência manteve-se estável. Houve prevalência em população maior de 60 anos. Os subtipos mais frequentes foram "outros melanomas" e extensivo superficial com localização céfálica e troncular em sua maioria.

Palavras-chave: Melanoma/epidemiologia; Neoplasias Cutâneas/epidemiologia; Dermatopatias.

RESUMEN

Introducción: El melanoma es la principal causa de muerte entre las neoplasias malignas cutâneas primarias. Su incidencia mundial ha aumentado progresivamente, sin embargo, la información epidemiológica nacional es escasa. **Objetivo:** Analizar el perfil epidemiológico e histopatológico de los melanomas cutâneos diagnosticados en un hospital universitario en 16 años. **Método:** Serie histórica de casos de melanoma cutâneo obtenidos por la revisión de registros médicos e informes histopatológicos de 2001-2016. **Resultados:** La frecuencia se mantuvo con un promedio de 2,99 melanomas/mil nuevas consultas. La casuística consistió en 224 melanomas cutâneos en 211 pacientes, blancos (98,6%), mujeres (55,9%), con edad media de 57,3 años. El promedio entre la aparición de la lesión (desde la aparición o desde que comenzó a cambiar según informe del paciente) y diagnóstico fue 4,8 años. El tamaño predominante de 0,5 a 2 cm, afectando principalmente la región céfálica en mayores de 60 años y el tronco cuando menores de 60. "Otros melanomas" (34,8%) y melanoma extenso superficial (31,7%) fueron los subtipos más frecuentes. La mayoría de los casos tenía índice de Breslow ≤ 1 mm (70%). Los más delgados (≤ 1 mm) fueron lentigo extenso superficial y maligno. Los nodulares tenían Breslow intermedio (1 a 4 mm) o grueso (≥ 4 mm) con altas tasas de disseminación y metástasis para ganglios linfáticos. **Conclusión:** La frecuencia se mantuvo estable. Hubo mayor prevalencia en la población menor de 60 años. Los subtipos más frecuentes fueron "otros melanomas" y extensos superficiales con localización principalmente céfálica y del tronco.

Palabras clave: Melanoma/epidemiología; Neoplasias Cutâneas/epidemiología; Enfermedades de la Piel.

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INTRODUCTION

Melanoma is a malignant neoplasm of the melanocytes with elevated capacity of dissemination and death. Despite being infrequent, is one of the most common cancers in youth and relevant cause of morbidity and mortality. It is a health public problem, but the Brazilian data are still scarce^{1,2}.

According to recent analyzes of the National Cancer Institute José de Alencar Gomes da Silva (INCA) 3.94 new cases of melanomas are estimated for each 100 thousand women and 4.03 new cases for each 100 thousand men³. Melanoma represents but 3-4% of the malignant tumors in the country but is responsible for 65-80% of the deaths caused by skin cancer^{4,5}. The risk factors for the development of the neoplasm are individual and family history of melanoma, low phototype, genetic DNA repair diseases, intense solar exposure, living in equatorial latitudes⁶, ultraviolet radiation exposure, atypical melanocytic nevus⁷. Australia and New Zealand have the greatest world incidence because of ethnical and geoclimatic questions probably^{6,8}.

The main subtypes per order of prevalence are superficial spreading, nodular, lentigo maligna, and acral-lentiginous^{2,6}. Less common types are amelanotic, spitzoid, desmoplastic, melanoma of soft parts, malignant blue nevus, ocular and mucosa melanoma^{5,6}.

Clinical findings as variation in color, form, size of a pigmented lesion during a period, coursing or not with bleeding, pruritus, pain or ulceration are noted. The proper dermatologic exam with dermatoscopy is fundamental for melanoma diagnosis. The National Campaign of Skin Cancer Prevention occurs in Brazil annually, it is an important tool for early detection of these tumors⁹. Every suspected lesion should be submitted to excisional biopsy and histopathology is the golden standard for the diagnosis⁶. The tumor thickness (Breslow index) is the strongest predictor of prognosis and survival^{2,4,7}.

The classification most used currently is TNM staging revised periodically by the American Joint Committee on Cancer (AJCC) where T stands for tumor size measured by Breslow (thickness of the granular layer measured until the last tumor cell), "N", lymph node affection and "M", remote metastasis. The mitosis of the intradermal component and presence of ulceration are considered independent criteria for morbimortality^{6,10}.

The prognosis of patients with melanoma depends on the stage and diagnosis. For patients with thin and cutaneous melanoma, the prognosis is favorable, generally, and for earlier diagnosis contribute for lower proportional mortality^{4,9}.

The objective of this study was to analyze the epidemiological profile of the cases of cutaneous melanomas between 2001 and 2016 in a public hospital of Curitiba-PR, Brazil, because of its importance and impacts. To know the characteristics and regional behavior of the melanoma contributes for better knowledge of the disease, diagnosis, follow up and treatment of the patient.

METHOD

A retrospective analysis of the hospital cancer database and electronic charts was performed (when anatomopathological reports and laboratory complementary data exist) of melanoma cases diagnosed in a university hospital from January 2001 to December 2016. The project was approved by the Institutional Review Board number CAAE: 78930717,0,0000,0096 in compliance with Resolution 466/2012.

The inclusion criteria were individuals of any age-range, color/race/ethnicity/gender with histopathological confirmed diagnosis of primary cutaneous melanoma in the period and availability of the chart. Incomplete charts were excluded.

The variables analyzed were gender, age, race of the patients, city of origin, frequency of the cases at the Dermatology Outpatient of the Clinic Hospital Compound of the Federal University of Paraná during the years, topography of the lesions, size, symptomatology, time of evolution, surgical method for diagnosis, histologic type, Breslow index, metastasis, staging and treatment.

The data were collected from the electronic chart and cancer hospital registry. The usual conduct of the facility where the study was realized is to perform dermatoscopy of all the suspected lesions; however, as the physical chart of the patients was not analyzed, these data were not utilized.

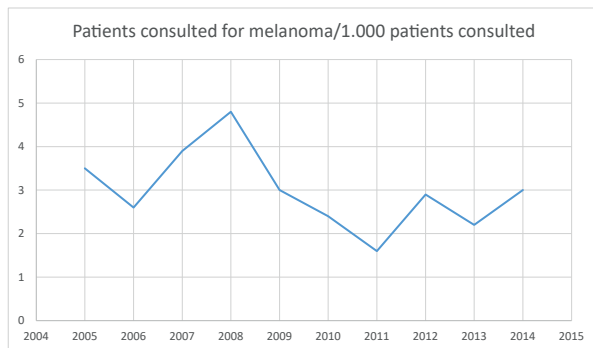
For the purposes of this study, the cases were grouped in superficial spreading melanoma, lentigo maligna, nodular melanoma, acral melanoma and "other melanomas" comprehending the less common subtypes (amelanotic, desmoplastic, spitzoid associated to nevus among others) and the not sub-specified melanomas in the anatomopathological report. The tumors were classified through Breslow as thin (≤ 1 mm), intermediate (1 to 4 mm) and thick (≥ 4 mm).

The results of the quantitative variables were described through means, standard-deviations, minimum and maximum variables. For categorical variables, frequencies and percent were presented. To evaluate the association between two quantitative variables it was considered the chi-square test. Values of $p < 0.05$ indicated statistical significance. For each one of the variables, the analyzes were done considering the valid data (not lost). These

were analyzed with the computer software Stata/SE v.14.1. StataCorpLP, USA.

RESULTS

In the period from 2001 to 2016, 211 patients in total with diagnosis of cutaneous melanoma were consulted. 224 tumors were detected because of the patients who had more than one lesion. The frequency of the melanoma diagnosis in the period kept stable in this Dermatology Service with peak in 2008 and mean of 2.99 cases for each thousand new outpatient consultations. These data refer to the years from 2005 to 2014 due to unavailability of information about the number of the patients received in the other years at the outpatient (Graph 1).



Graph 1. Cases of melanoma during ten years in Dermatology Outpatient

The mean age of the patients was 57.3 years with standard-deviation of 15.6 years, the younger was 12 years old and the oldest, 90 years. Of these, 53.6% were below 60 years. There was more participation of women (55.9%), Caucasian (98.6%) originated from Curitiba and metropolitan region (84.8%). Only nine patients had two or more cutaneous melanomas (Table 1).

In relation to the lesions, the mean time of evolution (appearance of the lesion or modification of the disease) until diagnosis was 4.8 years, the most common are located in the cephalic region (34.6%) or trunk (27.1%). The predominant size of the melanoma was between 0.5 to 2 cm (74.8%) and only 6.6% had <5 mm. The superficial spreading subtype was the most frequently found in the study. The frequency of each subtype of melanoma including the melanomas of the group “other melanomas” is specified in Table 2.

Fifty percent of the tumors are confined to the epidermal and 70.2% were classified as thin melanomas (≤ 1 mm). However, 13.1% had Breslow thickness ≥ 4 mm. When subtypes were analyzed, it was verified that

Table 1. Variables related to patients with diagnosis of cutaneous melanoma, 2001-2016

Variable	Valid data	Classification	Result* (%)
Age	211	(years)	57.3 \pm 15.6 (12-90)
Age	211	< 60 years	113 (53.6)
		\geq 60 years	98 (46.4)
Gender	211	Male	93 (44.1)
		Female	118 (55.9)
Race/color	209	Caucasian	206 (98.6)
		Black	2 (0.9)
		Brown	1 (0.5)
Profession	85	Does not work	35 (41.2)
		Works	50 (58.8)
Origin	210	Curitiba	128 (61.0)
		Metropolitan region	50 (23.8)
		Rural	26 (12.4)
		Coast	5 (2.4)
		Another State	1 (0.5)
Alcoholism	191	No	162 (84.8)
		Yes	20 (10.5)
		Ex-user	9 (4.7)
Smoking	198	Yes	52 (26.3)
		No	118 (59.6)
Cancer in the family	183	Ex-user	28 (14.1)
		Yes	90 (49.2)
		No	93 (50.8)

Caption: *Described by mean \pm standard-deviation (minimum - maximum) or by frequency (percent)

83% and 91% of the lentigo maligna were less than 1 mm thick. In counterpart, 100% of the nodular melanomas were already classified as intermediate or thick (>1 mm).

Surgery was the only treatment of choice in 174 cases (77.7%). For those who needed adjuvant therapy, chemotherapy was indicated in 12 (5.4%) and radiotherapy in seven (3.1%). Seven patients had combined treatments.

Among the 26 patients who had metastasis, only 24 had record of its location. The most affected cases by metastasis were lymph nodes (50%), followed by lung (37.5%), central nervous system (25%) and liver (20.8%). (Table 3).

Evaluating the subtype of the tumor in relation to the body location, the superficial spreading melanoma prevailed in the trunk (35.6%) while the nodular and the lentigo maligna affected the cephalic region. The near

Table 2. Specific subtype of cutaneous melanoma

Subtypes of cutaneous melanoma (n=224)	n (%)	
	n	(%)
Superficial spreading melanoma	71	(31.7)
Other melanomas	61	(27.2)
Lentigo Maligna	27	(12.1)
Nodular melanoma	21	(9.4)
Lentigo maligna melanoma	10	(4.5)
Polypoid melanoma	9	(4)
Acral melanoma	8	(3.6)
Desmoplastic melanoma	4	(1.8)
Amelanotic melanoma	3	(1.3)
Melanoma associated to melanocytic nerve	2	(0.9)
Pagetoid melanoma	2	(0.9)
Superficial spreading melanoma with nodular transformation	2	(0.9)
Nevoid cutaneous melanoma	1	(0.4)
Melanoma associated to junctional nevus	1	(0.4)
Melanoma associated to dysplastic nevus	1	(0.4)
Spitzoid melanoma	1	(0.4)
Total	224	(100.0)

Table 3. Frequency of the most affected places by metastasis

Location	Affected	
	n (total = 24)	%
Lymph node	12	50
Lung	9	37.5
Central Nervous System	6	25
Liver	5	20.8

totality of the lentigo maligna was in photo-exposed areas (head and upper limb).

In relation to the size of the tumors and subtype, it was evident that more than 40% of the nodular melanomas had ≥ 2 cm at the diagnosis, while lentigo maligna and superficial spreading were detected mostly as minor clinical lesions. All nodular melanomas were classified as having thickness equal or higher than 1 mm and 54.6% had Breslow higher or equal to 4 mm. The lentigo maligna and acral-lentiginous were diagnosed as *in situ* in 65.7% and 83.3% respectively. The superficial spreading was classified as thin melanomas in more than 80% of the

cases analyzed. There was no metastasis originated from the subtypes lentigo maligna and superficial spreading ($p < 0.001$). On the other hand, 80% of the metastasis resulted from cases of subtype "other melanomas" and 11% as nodular melanomas (Table 4).

When the global characteristics of the tumors in relation to individuals older than 60 years and younger than 60 years were analyzed, it was observed there was prevalence of lesions in the head and neck in individuals older than 60 years, the most common location was the chest. In relation to the subtype of neoplasms, 78% of lentigo maligna occurred in individuals older than 60 years while the most common subtypes in youth and adults were "other melanomas" ($p < 0.001$). In relation to metastasis, it is possible to observe that 85% occurred in individuals younger than 60 years with statistical significance.

Comparing the data among genders, it was verified that 70% of the lesions in lower limbs and 61% of the thin melanomas were in women. For the histopathological diagnosis, excisional biopsy was the initial procedure of choice in most of the tumors, excepting the subtypes acral and lentigo maligna with statistical relevance. This initial procedure was most used in minor lesions with reduction of the rates according to the increase of the diameter size of the lesion ($p = 0.449$).

Associating the tumoral subtype with Breslow index, it was observed that the thinner subtypes (*in situ* or ≤ 1 mm) were superficial spreading while the biggest with 1 mm were predominantly nodular.

DISCUSSION

This study evaluated a historical series of cutaneous melanoma of a university hospital. In this hospital, this rate was kept stable and possibly the peak verified in 2008 resulted in increased disclosure of the theme and pursue of medical orientation arising from discussions created by RDC 56/09 of ANVISA (Brazilian Health Regulatory Agency) that eventually lead to the banning of artificial tanning in the country.

The mean age-range of the patients evaluated in this hospital is 57.3 years, similar to the investigations conducted in North America and Europe¹⁸⁻²⁰. However, it is of notice that most part of the present casuistic was in productive age lower than 60 years with possible socioeconomic repercussions, loss of productivity and quality of life.

Slight predominance in the female gender corroborated the findings of the national and international literature. In Minas Gerais, the proportion of women to men reached 1.6:1²¹. Women are more concerned with health classically, but there are authors who attribute the fact

Table 4. Association of subtypes of melanoma with other characteristics of the lesion

Variable	Classification	Subtype of melanoma					P
		Nodular	Lentigo Maligna	Other	Superficial Spreading	Acral	
Location	Upper limb	7 (25.0)	6 (16.2)	9 (13.2)	17 (23.3)	1 (12.5)	-
	Lower Limb	5 (17.9)	4 (10.8)	6 (8.8)	11 (15.1)	1 (12.5)	-
	Chest	7 (25)	2 (5.4)	23 (33.8)	26 (35.6)	0 (0)	-
	Head	9 (32.1)	25 (67.6)	21 (30.9)	19 (26.0)	0 (0)	-
	Foot	0 (0)	0 (0)	0 (0)	0 (0)	4 (50.0)	-
	Ungual	0 (0)	0 (0)	0 (0)	0 (0)	1 (12.5)	-
Size (cm)	≤0.5	0 (0)	1 (7.1)	1 (7.1)	4 (8.5)	0 (0)	-
	0.5-1	3 (25)	4 (28.6)	7 (50)	12 (25.5)	3 (75.0)	-
	1-2	4 (33.3)	6 (42.9)	3 (21.4)	26 (55.3)	0 (0)	-
	≥2	5 (41.7)	3 (21.4)	3 (21.4)	5 (10.6)	1 (25.0)	0.794
Breslow (mm)	<i>In situ</i>	0 (0)	23 (65.7)	23 (56.1)	21 (29.6)	5 (83.3)	-
	≤1	0 (0)	9 (25.7)	4 (9.8)	38 (53.5)	0 (0)	-
	1-2	3 (13.6)	0 (0)	3 (7.3)	7 (9.9)	1 (16.7)	-
	2-4	7 (31.8)	1 (2.9)	3 (7.3)	4 (5.6)	0 (0)	-
	≥4	12 (54.6)	2 (5.7)	8 (19.5)	1 (1.4)	0 (0)	-
Metastasis	No	1 (25.0)	22 (100)	25 (53.2)	25 (100)	6 (85.7)	-
	Yes	3 (75.0)	0 (0)	22 (46.8)	0 (0)	1 (14.3)	<0.001
First Procedure	Excisional biopsy	11 (84.6)	10 (41.7)	16 (72.7)	38 (76)	2 (33.3)	-
	Incisional biopsy	2 (15.4)	14 (58.3)	5 (22.7)	12 (24)	4 (66.7)	0.006

that these patients utilized tanning beds⁶. Caucasians represented 98.6% of the cases, being explained by the regional racial miscegenation and also because of more susceptibility of fair skin to ultraviolet rays. Even in countries with low prevalence of Caucasian population, it is still the most affected^{1,2,11,14,17,20,22}.

The increase of the size as the most prevalent complaint was similar to the study of Minas Gerais, representing 58.1% of the total²¹. However, the mean time of evolution of the lesions until the diagnosis was 4.8 years, differing from the study conducted in Joinville-SC, where the mean time was 2.2 years¹. In the study of Santa Catarina, data of the tumors originated from every private and public health facility of the city were evaluated. In the current casuistic, the time spent from the trajectory to the diagnosis is a concern and can indicate difficulty in accessing public services or error of primary attention to recognize the initial cases and the application of the ABCDE rule (asymmetry, border, color, diameter, elevation) could be beneficial to detect thin lesions that has less potential of metastases. This fact reinforces the necessity of improving the continuous medical education, disclose skin self-exam,

identify and correct the assistance gaps, reducing the delay of the diagnosis and treatment.

In the global analysis, one third of the tumors was in the head and neck, followed by chest in 27.1% of the cases. While analyzing the location in relation to gender, melanoma of head and neck continued prevalent for both, however, 70% of the lesions in lower limbs affected women. There was predominance of lesions in the head and neck for older than 60 years, the most common location was chest. The world literature shows melanoma predilection in men's chest and in women's lower limbs^{5,11,18}.

However, reviewing regional studies, it is perceived that the ethnic and geographical distribution is the cause of wide variation in publications about the theme. In Blumenau-SC, chest was the most affected in two populations, and in Joinville, SC as well as in Curitiba-PR, men were more affected in the head and neck, while women had more lesions in the lower limbs^{1,14,23}. Therefore, the segmented analysis of patients consulted in this university hospital is relevant, since by the socioeconomic characteristics, it is plausible that contrasting peculiarities with data from private services exist.

Regarding the clinical size of the lesions, 74.8% had diameter of 0.5 to 2 cm, with slight predominance of lesions bigger than 1 cm. Only 6% of the tumors were lower or equal to 5 mm. This data concurs with the rule of ABCDE, where suspected lesions, theoretically, are bigger than 6 mm. When tumor size is analyzed for subtype, more than 40% of the nodular melanomas had more than 2 cm of diameter at the diagnosis, while lentigo maligna and superficial spreading were detected as minor clinical lesions, between 1 to 2 cm mostly. The initial procedure for most of the patients was excisional biopsy as indicated except for subtypes lentigo maligna and acral-lentiginous. The probable causes for incisional over excisional biopsy are low suspicion of melanoma in the initial consultation and tumor dimension, since in the present study, it was observed that the increase of the lesion size was directly proportional to the use of excisional procedure.

In conformity with recent publications, the most frequent subtype was superficial spreading melanoma (31.7%). Nonetheless, in the analysis, lentigo maligna was slightly prevalent over nodular melanoma and 78% of them occurred in individuals older than 60 years. This could be explained by more ultraviolet radiation accumulated in patients older than 60 years. "Other melanomas" had prevalence of 34.8% and occurred predominantly in youth. Study conducted in 2013 in the Northeast identified that more than half of the tumors were of nodular subtype. In Minas Gerais, lentigo maligna was the most common. These data show variation according to the populational characteristics^{21,24}.

The lower prevalence of acral melanoma (36%), subtype of aggressive melanoma more prevalent in individuals with more pigmented skin is due to the demographic characteristics of the region where the study was performed, result similar to a study conducted in the same region^{5,25}.

Associating the subtype of the tumor in relation to location in the body, corroborating the data of the literature, the subtype superficial spreading prevailed in the chest (35.6%), while 86% of lentigo maligna were in the head and upper limbs¹⁹. It is likely that the appearance of lentigo maligna in photoexposed areas is due to chronic sun exposure as the main risk factor^{2,5,6,19,26}. However, systematic, individual and collective photoprotective measures need to be disclosed constantly and incorporated by the population since childhood to avoid sun burns and other damages from unprotected exposure as skin cancer.

Nearly half of the tumors analyzed was confined to the epidermal and 70.2% were classified as thin melanomas (≤ 1 mm). For staging, 83% of the superficial spreading and 91% of lentigo maligna were in T1. This data concurs with the statistics of the first world as the

United States, Switzerland, The Netherlands where thin tumors were found in around two thirds of the patients^{14,18,24}. In contrast, in a study conducted by Vilanova et al.⁹, in the Brazilian Northeast only 27.6% of thin melanomas were encountered, with mean thickness of 8.8 mm and high prevalence of nodular subtype, portraying the delay of the diagnosis and worsening of the patients' prognosis^{2,19,20,24}.

When evaluating the tumoral subtype in relation to the Breslow index, it is observed with statistical relevance that the thinner subtypes (*in situ* or ≤ 1 mm) were the superficial spreading and lentigo maligna, while the bigger than 1 mm were predominantly nodular. A Swiss study with more than 8 thousand cases evaluated, evidenced the same relation. In addition, nearly 25% of the patients who presented nodular subtype had already tumoral thickness bigger than 4 mm at the diagnosis. This data reinforces the tumoral aggressive characteristic and warning for the necessity of always documenting the specific neoplasm subtype^{6,14,19}.

Surgery was the only treatment of choice in nearly 80% of the cases of the present casuistic. For those who needed adjuvant therapy, chemotherapy had slight predominance over radiotherapy. For the patients who were aware of metastases, 25% had some sort of internal dissemination of the primary tumor, similar to the study of the Northeast²⁴. In relation to metastases, investigators of Belo Horizonte in 2013 found only 13.4%²⁰. It is possible that this is overestimated, since there was no information about metastases in more than 50% of the registries. Corroborating data of the literature, the lymph node metastasis was the most frequent followed by lung, and central nervous system. The hepatic compromise was the fourth site most affected by metastasis in number of cases, it can appear earlier or after brain metastasis.

In relation to metastases, there was high rate of dissemination of the nodular subtype while lentigo maligna and superficial spreading had no metastasis. In the group "other melanomas", 46.8% presented metastasis, although only 14, of the total of 41 patients of the group presented Breslow higher than 1mm thick.

The retrospective design and the incompleteness of the database are among the limitations of this study. Although it is mandatory to fill the medical chart, the volume and quality of its records are related to multiple human and organizational factors, peculiar to teaching public hospitals. However, as melanoma is a problem of public health, the regional approach of the cases performed in this investigation contributed with an array of data potentially capable of broadening the evaluation of this disease behavior and stimulate educational and preventive strategies to reduce its impact and consequences.

CONCLUSION

The compromise of white adult Caucasians and predominance of superficial spreading melanoma were similar to the regional literature. The mean of 2.99 cases diagnosed for each thousand general consultations kept stable throughout the years, nevertheless, the mean time between the appearance of the lesion and the diagnosis as well as size of the tumor bigger than 1 cm, warns for the necessity to improve investments in preventive and therapeutic strategies. The “non-classical” melanomas (subtypes other than superficial spreading, lentiginous, acral-lentiginous and nodular) had high frequency in this study, a fact that should draw the attention to improve anatomopathological reports and early diagnosis techniques and training of professionals working in basic attention to recognize atypical presentation lesions. Such measures aim the early detection of lesions and, consequently, reduction of morbimortality of the melanoma because of its social impact.

CONTRIBUTIONS

All the authors contributed substantially for the conception or planning of the study; gathering, analysis and/or interpretation of the data, wording and/or critical review and approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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REFERENCES

1. Steglich RB, Coelho KMPA, Cardoso S, et al. Epidemiological and histopathological aspects of primary cutaneous melanoma in residents of Joinville, 2003-2014. *An Bras Dermatol.* 2018;93(1):45-53. doi: <https://doi.org/10.1590/abd1806-4841.20185497>
2. Soong SJ, Ding S, Coit D, et al. Predicting survival outcome of localized melanoma: an electronic prediction tool based on the AJCC melanoma database. *Ann Surg Oncol.* 2010;17(8):2006-14. doi: <https://doi.org/10.1245/s10434-010-1050-z>
3. Instituto Nacional do Câncer José Alencar Gomes da Silva. Estimativa 2020: incidência de câncer no Brasil [Internet]. Rio de Janeiro: INCA; 2019 [acesso 2020 jul 9]. Available from: <https://www.inca.gov.br/sites/ufu.sti.inca.local/files//media/document//estimativa-2020-incidencia-de-cancer-no-brasil.pdf>
4. Ferreira T, Santos IDAO, Oliveira AF, et al. Estudo retrospectivo dos pacientes portadores de melanoma cutâneo atendidos na Universidade Federal de São Paulo. *Rev Col Bras Cir.* 2018;45(4):e1715. doi: <https://doi.org/10.1590/0100-6991e-20181715>
5. Purim KSM, Sandri CO, Pinto NT, et al. Perfil de casos de melanoma em um Hospital Universitário, 2003 a 2007. *Rev Bras Cancerol.* 2013;59(2):193-9. <https://rbc.inca.gov.br/revista/index.php/revista/article/view/523>
6. Schadendorf D, Fisher DE, Garbe C, et al. Melanoma. *Nat Rev Dis Primers.* 2015;1:15003. doi: <https://doi.org/10.1038/nrdp.2015.3>
7. Ferrari Júnior NM, Muller H, Ribeiro M, et al. Cutaneous melanoma: descriptive epidemiological study. *São Paulo Med J.* 2008;126(1):41-7. doi: <https://doi.org/10.1590/s1516-31802008000100008>
8. Cherobin ACFP, Wainstein AJA, Colosimo EA, et al. Prognostic factors for metastasis in cutaneous melanoma. *An Bras Dermatol.* 2018;93(1):19-26. doi: <https://doi.org/10.1590/abd1806-4841.20184779>
9. Vilanova CMA, Lages RB, Ribeiro SM, et al. Perfil epidemiológico e histopatológico do melanoma cutâneo em um centro do nordeste brasileiro de 2000 a 2010. *An Bras Dermatol.* 2013;88(4):545-53. doi: <https://doi.org/10.1590/abd1806-4841.20132036>
10. Balch CM, Gershenwald JE, Soong S, et al. Final version of 2009 AJCC melanoma staging and classification. *J Clin Oncol.* 2009;27(36):6199-6206. doi: <https://doi.org/10.1200/JCO.2009.23.4799>
11. Naser N. Cutaneous melanoma: a 30-year-long epidemiological study conducted in a city in southern Brazil, from 1980-2009. *An Bras Dermatol.* 2011;86(5):932-41. doi: <https://doi.org/10.1590/S0365-05962011000500011>
12. Konrad P, Fabris MR, Melao S, et al. Histopathological and epidemiological profile of cases of primary cutaneous melanoma diagnosed in Criciúma-SC between 2005 and 2007. *An Bras Dermatol.* 2011;86(3):457-61. doi: <https://doi.org/10.1590/S0365-05962011000300006>
13. Gon ADS, Minelli L, Guembarovski AL. Melanoma cutâneo primário em Londrina. *An Bras Dermatol.* 2001;76(4):413-26.
14. Ward WH, Farma JM, editors. Cutaneous melanoma: etiology and therapy [Internet]. Brisbane (AU): Codon Publications; 2017. Chapter 6, Clinical presentation and staging of melanoma; [cited 2019 jun 27]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK481857/>
15. Pinheiro AMC, Friedman H, Cabral ALSV, et al. Melanoma cutâneo: características clínicas, epidemiológicas e histopatológicas no Hospital Universitário de Brasília entre janeiro de 1994 e abril de 1999. *An Bras Dermatol.* 2003;78(2):179-86. doi: <https://doi.org/10.1590/S0365-05962003000200005>

16. Muinonen-Martin AJ, O'Shea SJ, Newton-Bishop J. Amelanotic melanoma. *BMJ*. 2018;360:k826. doi: <https://doi.org/10.1136/bmj.k826>
17. Wainstein AJ, Duprat Neto JP, Enokihara MY, et al. Demographic, clinical, and pathologic features of patients with cutaneous melanoma: final analysis of the brazilian melanoma group database. *JCO Glob Oncol*. 2020;6:575-82. doi: <https://doi.org/10.1200/JGO.20.00005>
18. Hollestein LM, van den Akker SAW, Nijsten T, et al. Trends of cutaneous melanoma in the Netherlands: increasing incidence rates among all Breslow thickness categories and rising mortality rates since 1989. *Ann Oncol*. 2012;23(2):524-30. doi: <https://doi.org/10.1093/annonc/mdr128>
19. Minini R, Rohrmann S, Braun R, et al. Incidence trends and clinical-pathological characteristics of invasive cutaneous melanoma from 1980 to 2010 in the Canton of Zurich, Switzerland. *Melanoma Res*. 2017;27(2):145-51. doi: <https://doi.org/10.1097/CMR.0000000000000312>
20. Pinto ACVD, Cavalcante MLLL, Silva GV, et al. Melanoma maligno: estudo epidemiológico dos casos diagnosticados em unidade de referência em dermatologia em Bauru-sp de 2007 a 2014. *Surg Cosmet Dermatol [Internet]*. 2015 [acesso 2019 jun 27];7(2):104-7. Available from: <http://www.surgicalcosmetic.org.br/detalhe-artigo/397/Melanoma-maligno--estudo-epidemiologico-dos-casos-diagnosticados-em-unidade-de-referencia-em-dermatologia-em-Bauru-sp-de-2007-a-2014>
21. Gomes J, Parente J, Viana I, et al. Utilidade do HMB-45 e do KI-67 em melanoma maligno associado a nevo. *Rev Soc Port Dermatol Venereol*. 2011;69(2):195-201. doi: <https://doi.org/10.29021/spdv.69.2.605>
22. Fernandes NC, Calmon R, Maceira JP, et al. Cutaneous melanoma: prospective study of 65 cases. *An Bras Dermatol*. 2005;80(1):25-34. doi: <https://doi.org/10.1590/S0365-05962005000100004>
23. Parente J, Gomes J, Viana I, et al. Variantes raras do melanoma maligno: um desafio clínico e histopatológico. *Rev Soc Port Dermatol Venereol*. 2012;70(2):195. doi: <https://doi.org/10.29021/spdv.70.2.26>
24. Foiato TF, Bereza BRK, Montenegro MF, et al. Analysis of patients diagnosed with primary cutaneous melanoma in the last six years in Hospital Erasto Gaertner: epidemiologic profile. *An Bras Dermatol*. 2018;93(3):332-336. doi: <https://doi.org/10.1590/abd1806-4841.20185788>
25. Bradford PT, Goldstein AM, McMaster ML, et al. Acral lentiginous melanoma: incidence and survival patterns in the United States, 1986-2005. *Arch Dermatol*. 2009;145(4):427-34. doi: <https://doi.org/10.1001/archdermatol.2008.609>
26. Marghoob AA, Koenig K, Bittencourt FV, et al. Breslow thickness and Clark level in melanoma: support for including level in pathology reports and in American Joint Committee on Cancer Staging. *Cancer*. 2000;88(3):589-95. doi: [https://doi.org/10.1002/\(SICI\)1097-0142\(20000201\)88:3<589::AID-CNCR15>3.0.CO;2-I](https://doi.org/10.1002/(SICI)1097-0142(20000201)88:3<589::AID-CNCR15>3.0.CO;2-I)

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