

# Histopathological and epidemiological profile of cases of primary cutaneous melanoma diagnosed in Criciúma-SC between 2005 and 2007 \*

Perfil epidemiológico e histopatológico dos casos de melanoma cutâneo primário diagnosticados em Criciúma no período entre 2005 e 2007

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**Abstract:** BACKGROUND: Melanoma is a skin tumor with the highest mortality, despite representing only 5% of the total. The incidence has increasing all over the world especially among fair-skinned individuals and the Criciúma, with a predominance of Italian ethnic, most susceptible to this type of tumor.

OBJECTIVE: To know the epidemiological profile and histopathology of primary cutaneous melanoma in Criciúma, and compares them with literature.

METHODS: We conducted a retrospective study, sectional and the pathological reports of melanoma primary in Criciúma, between January 2005 and December 2007. Were analyzed the population affected by sex and age, topography, histologic type, the Clark level and Breslow thickness.

RESULTS: There were 72 reports. The age ranged from 15 to 85 years, with an average of 51 years. The most frequent localization in men was the trunk (60%) in women predominated in the lower limbs (30.5%). The most frequent histological type was the extensive superficial (50%). The Clark's level, the most frequent was level III (32.3%) followed by Level I (29.2%). Most melanomas Breslow had in situ (29.6%).

CONCLUSION: The profile of patients with cutaneous melanoma in Criciúma-SC has characteristics similar to those described in the literature and world with regard to gender, age, topography and histology. The topography of the lesion, the study shows the importance of a clinical stricter mainly the trunk in men and women in the lower limbs. In this study there is a high incidence of melanoma per 100,000 in habitants, higher than the national average and state. On the other hand, melanomas showed a predominance of Breslow considered more favorable prognosis.

Keywords: Dermatology; Skin; Skin diseases; Skin neoplasms

**Resumo:** FUNDAMENTO: O melanoma é o tumor cutâneo com maior taxa de mortalidade, apesar de representar apenas 5% do total. Sua incidência vem aumentando em todo o mundo, principalmente, entre indivíduos de pele clara; a cidade de Criciúma, onde predomina a etnia italiana, apresenta maior susceptibilidade a esse tipo de tumor.

OBJETIVO: Conhecer o perfil epidemiológico e histopatológico do melanoma cutâneo primário, na cidade de Criciúma, e compará-lo com a literatura.

MÉTODOS: Realizou-se um estudo retrospectivo, descritivo e transversal dos laudos anatomopatológicos de melanoma cutâneo primário, na cidade de Criciúma, entre janeiro de 2005 e dezembro de 2007. Analisou-se a população acometida segundo o sexo e a idade, a topografia, o tipo histológico, o nível de Clark e o índice de Breslow.

RESULTADOS: Encontraram-se 72 laudos, com média de idade de 51 anos. A localização mais frequente foi o tronco, nos homens (60%), e os membros inferiores nas mulheres (30,5%). O tipo histológico mais comum foi o extensivo superficial (50%). Quanto ao nível de Clark, o mais frequente foi o nível III (32,3%). A maior parte dos melanomas apresentava Breslow in situ (29,6%).

CONCLUSÃO: O perfil do paciente com melanoma cutâneo, em Criciúma, apresenta características semelhantes às descritas na literatura nacional e mundial. Quanto à topografia da lesão, o estudo mostra a importância de um exame clínico mais rigoroso, especialmente, do tronco em homens e dos membros inferiores em mulheres. A incidência de casos de melanoma foi maior que a média nacional e estadual. Por outro lado, os melanomas apresentaram um predomínio de Breslow, considerados de prognóstico mais favorável.

Palavras-chave: Dermatologia; Dermatopatias; Neoplasias cutâneas; Pele

Received on 01.04.2010.

Approved by the Advisory Board and accepted for publication on 11.08.10.

\* Work conducted at Universidade do Extremo Sul Catarinense (UNESC) - Criciúma (SC), Brazil.

Conflict of interest: None / *Conflito de interesse: Nenhum*

Financial funding: None / *Suporte financeiro: Nenhum*

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## INTRODUCTION

Cutaneous melanoma is considered the most important skin cancer, despite representing only 3-4% of malignant skin tumors.<sup>1</sup> This is because it is a more aggressive cancer due to its high metastatic potential.<sup>2</sup>

The incidence of the disease has increased worldwide in recent decades among Caucasians.<sup>1</sup> In Brazil, information about the disease is limited. According to the National Cancer Institute (INCA), it is estimated that in 2010 there will be 2,960 new cases of the disease in men and 2,970 new cases in women. The highest estimated rates for men and women are in the South region of the country.<sup>2</sup>

The disease occurs most frequently between 40 and 60 years of age and affects predominantly Caucasians and women.<sup>1</sup> The site of involvement varies according to gender; in women it occurs mainly in the lower limbs and in men, more in the trunk.<sup>3</sup>

The most important risk factors related to the development of melanoma are skin phototypes I and II, history of severe sunburns, light hair and eyes, presence of multiple melanocytic nevi, dysplastic or atypical nevi, development of ephelides, previous and familial history of melanoma.<sup>1,4</sup>

The objective of this study was to understand the epidemiological and histopathological profile of primary cutaneous melanoma in the town of Criciúma, in a period of three years, and compare it to data from the literature.

## METHODOLOGY

We conducted a retrospective, descriptive and cross-sectional study, with a quantitative and qualitative approach, of anatomopathological reports of primary cutaneous melanoma. Health professionals in private practice performed excision of the suspicious lesion and sent it for analysis in the only two laboratories of pathology in the city (Alice Laboratory of Pathology (LAPA) and Rocha Laboratory of Pathology (LPR)); the public health system sends the material to the Integrated Service of Pathology (SIP) in Joinville, SC.

All the medical reports with anatomopathological diagnosis of primary cutaneous melanoma from the three laboratories (LAPA, LPR and SIP) from January 2005 to December 2007 were included in the study. The dependent variable studied was primary cutaneous melanoma and the independent variables were gender, age, topography

of the lesion, histological type, Clark's level and Breslow's depth.

Data were entered into Excel and analyzed with the SPSS v. 12.0 software. The Chi-square test was used to compare quantitative and qualitative variables. The study was approved by the Ethics Committee of Universidade do Extremo Sul Catarinense.

## RESULTS

In the three years studied, 2006 was the year with the highest number of diagnoses, with a total of 29 cases, followed by 2005 with 24 cases and 2007 with 18 cases of the disease (Table 1).

Of the 72 medical reports, 43 were from female patients and 29, male, accounting for 59.7% and 40.2% of the cases, respectively. The patients' ages ranged from 15 to 85 years, with a mean age of 51.07 years and predominance between the 3rd and 5th decades of life. Only one medical report had no age record (Table 2).

With regard to topography of the lesion, 11 medical reports did not describe it. The most frequent site of involvement was the trunk (40.9%), which was also more frequent in men (60%). In women lesions predominated in the lower limbs (30.5%) (Table 3).

Sixty-four medical reports described histological type. The most frequent histological type was superficial spreading melanoma (SSM) with 32 cases (50%), being also more frequent in both sexes, with 17 cases in women and 15 cases in men. The second most common type was nodular melanoma (NM) (23.4%) (Graph 1).

Of the 72 medical reports, 65 mentioned level of tumor invasion (Clark's level). Most of these cases were classified as level I and III, corresponding to 32.3% and 29.2%, respectively. Level III predominated in women (38.4%) and Level I in men (34.6%) (Table 4).

Of the 72 medical reports, 64 described tumor thickness (Breslow's depth). It ranged from 0 to 9.1 mm with an average of 1.89 mm. Most medical reports evaluated showed melanoma *in situ* (29.6%), followed by thin melanomas (tumor thickness less than or equal to 0.75 mm and between 0.76 mm and 1.5 mm - 25% and 23.4%, respectively). In women there was a predominance of thicknesses less than or equal to 0.75 mm with 11 cases (28.9%) and in men melanomas *in situ* prevailed with 9 cases (34.6%)

TABLE 1: Distribution of the number of cases by year of diagnosis

Year	2005	2006	2007
Number of cases	24	29	18
Incidence	12,6/100.000 hab.	15,2/100.000 hab.	9,4/100.000 hab.

**TABLE 2:** Distribution of the sample by age range and gender

Gender	Male		Female		Total	
	n	%	n	%	n	%
Age range*						
15-30	1	3.4	4	9.5	5	7.0
31-50	12	41.3	18	42.8	30	42.2
51-70	12	41.3	15	35.7	27	38.0
71-85	4	13.7	5	11.9	9	12.6
Total	29	100	42	100	71	100

\* Years

(Table 5).

**DISCUSSION**

Cutaneous melanoma has a significant relevance among malignant skin tumors. Despite its low incidence – it represents about 3-4% of malignant skin tumors - it has the highest mortality rates. Over the past 50 years, the incidence of cutaneous melanoma has increased worldwide, which raises concern for early diagnosis.<sup>5,9</sup>

Brazilian cases of the disease published show the prevalence of primary cutaneous melanoma in women over 40 years old, located in the trunk and limbs and of superficial spreading and nodular histological types (Table 6).

In our sample, women accounted for the majority of cases (59.7%). In a retrospective study conducted from 1998 to 2004 at the University Hospital of the Federal University of Santa Catarina, women also accounted for the majority of cases (56.69%). They also predominated in several epidemiological studies of cutaneous melanoma.<sup>8,10</sup> Women are more susceptible to developing cutaneous melanoma and this gender is considered by some authors as a risk factor.<sup>11,12</sup> However, a study conducted in Jordan (Middle East) between 1969 and 1994, with 138 cases of primary cutaneous melanoma,

**TABLE 4:** Distribution of the sample by Clark's level and gender

Gender	Male		Female		Total	
	n	%	n	%	n	%
Clark's level						
I	9	34.6	10	25.6	19	29.2
II	3	11.5	5	12.8	8	12.3
III	6	23.0	15	38.4	21	32.3
IV	8	30.7	9	23.0	17	26.1
V	0	0	0	0	0	0
Total	26	100	39	100	65	100

showed a ratio of 1.6 men for every woman. This has been associated with more frequent and intense sun exposure by men.<sup>12</sup> Men predominated in two Brazilian studies; one of these studies was conducted in a private clinic in Sao Paulo with a sample that was too small to allow conclusions (20 cases).<sup>13</sup> In another study in Goiania, there was also a slight predominance of men (146 men and 144 women).<sup>14</sup>

According to INCA, the State of Santa Catarina has the highest number of melanoma cases per 100,000 inhabitants in the country, about 8 cases/100.000 inhabitants, much higher than the national average of 3 cases/100.000 inhabitants. In the three years evaluated in this study, the town of Criciuma, with a population of about 190,000 inhabitants, had much higher rates than the national and state average. In 2005, 24 cases of cutaneous melanoma were diagnosed, and this corresponds to an average of 12.6 cases/100.000. In 2006 the incidence was even higher, 15.2 cases/100.000, and in 2007, although there was a lower number of cases (9.4 cases/100.000), this number was still higher than the national and state average. Knowing the quality of the medical infrastructure of Criciuma, patients from neighboring towns might have sought treatment there and the study may present a migration bias.

The highest incidence rates of the disease are

**TABLE 3:** Distributuion of the sample by topography of the lesion and gender

Gender	Male		Female	
	n	%	n	%
Topography				
Face-Hair Scalp	5	20	6	16.6
Cervical	1	4	1	2.7
Trunk	15	60	10	27.7
UL	1	4	5	13.8
LL	3	12	11	30.5
Palmoplantar	0	0	3	8.3

**TABLE 5:** Distribution of the sample by Breslow's depth and gender

Gender	Male		Female		Total	
	n	%	n	%	n	%
Breslow*						
In situ	9	34.6	10	26.3	19	29.6
≤ a 0.75	5	19.2	11	28.9	16	25
0.76 -1.5	6	23.0	9	23.6	15	23.4
1.51- 4	3	11.5	4	10.5	7	10.9
≥ a 4	3	11.5	4	10.5	7	10.9
Total	26	100	38	100	64	100

\* Milimeters

TABLE 6: Epidemiological profile of cases of Brazilian patients diagnosed with cutaneous melanoma

Author/Year	No cases	Gender* (%)	Age in years § (%)	Site of involvement # (%)	Histological Type• (%)
Batistti, 2008 <sup>6</sup>	81	F (55.6)	51,3 (-)	T (32)	MES (53.5)
Borges, 2007 <sup>7</sup>	229	F (56.8)	51,73 (-)	T (33,5)	MES (61.6)
Weber, 2007 <sup>14</sup>	396	F (56)	54,9 (-)	T (-)	MES (-)
Rachou, 2006 <sup>35</sup>	290	M (50.4)	54 (-)	MI (25,9) C/P (25,9)	-
Rocha, 2006 <sup>39</sup>	90	F (54.4)	56,5 (-)	T (24,4)	MN (61.1)
Fernandes, 2005 <sup>19</sup>	65	F (50.7)	40-69 (64.7)	T (35.3)	MES (30.7)
Godoy, 2004 <sup>20</sup>	20	F (80)	50-60 (40)	MI (30) D (30)	MES (55.5)
Pinheiro, 2003 <sup>34</sup>	32	F (78)	61-80 (43.7)	MI/MS (50)	MN (45)
Bakos, 2002 <sup>4</sup>	103	F (66.9)	52,8 (-)	T (25,2)	MES (61.1)
Lapa, 2002 <sup>26</sup>	115	F (64)	40-59 (43.5)	Axial (61)	MN (19.1)
Maia, 2002 <sup>28</sup>	190	F (58.9)	55,9 (-)	-	MES (41.1)
Gon, 2001 <sup>21</sup>	303	F (54.6)	56,4 (-)	T (32,01)	MN (41.9)
Criado, 1999 <sup>12</sup>	222	F (69.9)	60-69(23.4)	MI (32,8)	-
Castro, 1996 <sup>10</sup>	20	M (65)	45,1 (-)	T (50)	-
Bakos, 1991 <sup>05</sup>	153	F (60.3)	60-70 (23)	-	MES (51.6)

\*F – female ;M- male.

§ Age range of greatest prevalence or age average, based on data from the study

#T – trunk; LL – lower limbs; UL – upper limbs; H/N – head/neck;

D – dorsum.

•MES – superficial spreading melanoma ; MN – nodular melanoma

observed in Australia, New Zealand, North America and northern Europe, with an annual increase ranging from 1.5 to 4.5% in a period of 5 years. In Brazil, although epidemiological data are scarce, there was a 30% increase from 1978 to 1991, similar to data about the North-American population.<sup>5</sup>

In our sample there was only one case of a patient under 18 years old, which confirms the rarity of occurrence of the disease in childhood and adolescence, as observed in the literature and other studies which state there is no predilection for age, but that cases of cutaneous melanoma rarely occur before puberty.<sup>1, 12, 15</sup>

The mean age found was 51.07 years, similar to data published in other studies, and there were no differences between genders. The peak of incidence of the disease was between 31 and 50 years old, which is similar to data found in the literature.

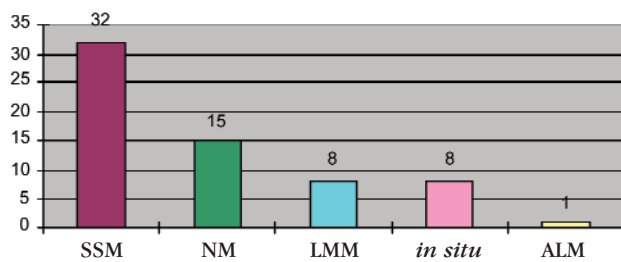
In this study, most cutaneous melanomas had as their primary site of involvement the trunk, followed by the lower limbs and face/ hair scalp. Among women, there was a predominance of lesions in the lower limbs, followed by face/hair scalp. In men, the most affected sites were the trunk and face/hair scalp. These data are similar to those of current publications, in which the most common site of involvement is the trunk; it is also the most frequent location affected in males, whereas lower limbs are in females.<sup>12, 15</sup>

With regard to the histological type of melanoma, the most prevalent was SSM (44.4%), followed by NM (20.8%), LMM (11.1%), in situ

(11.1%), and ALM (1.38%). (Graph 1). In a review of 84,836 records of melanoma from the *National Cancer Base Report*,<sup>16</sup> 57.60% were classified as SSM, 18.9% as NM, 21.40% as LMM and 2.10% as ALM. Weber, in a retrospective study of 496 anatomopathological reports of melanoma conducted in Florianopolis, found SSM to be the most common, occurring in 60% of the cases, followed by NM in 30% of the cases.<sup>17</sup> Some studies show higher incidence of NM, such as the 2001 study by Gon et al. conducted in Londrina, PR, with 41.9% of cases, and the 2003 study by Pinheiro et al. conducted at the University Hospital of Brasilia, with 45% of cases.<sup>15,03</sup> This difference could be due to the influence of the ethnic and racial miscegenation of races that exist in Brazil.<sup>18</sup>

In 1969, Clark et al. found that level III melanoma was the most common in their study, with 21 cases (32.3%), followed by level I with 19 cases (29.2%) and level IV with 17 cases (26.1%). In a retrospective study conducted in the Public Servants Hospital in Sao Paulo from 1963 to 1997, Clark's level IV melanoma predominated with 39.77% of cases.<sup>13</sup> In a study conducted in Londrina, PR, between 1990 and 1999, approximately 50% of tumors were in advanced stages. (Levels IV and V).<sup>15</sup> More recent studies have reported predominance of lower Clark's levels (I, II and III), similarly to what was found in our study, reflecting greater attention to the early diagnosis of melanoma in recent years.<sup>8,18,19</sup>

Tumor thickness (Breslow's depth) is the most complete and important prognostic factor for patients, being important to assess survival rate, local



GRAPH 1: Distribution of the sample by histological type

SSM – superficial spreading melanoma  
 NM – nodular melanoma  
 LMM – Lentigo maligna melanoma  
 ALM – Acral lentiginous melanoma

risk of recurrence and risk of regional and distant metastases.<sup>20</sup> Thin melanomas (<0.76 mm) have an extremely favorable prognosis. As for medium-thickness melanomas, patients have a less favorable prognosis; those considered thick melanomas (>4mm) have a worse prognosis.<sup>20</sup> In this study there was a predominance of *in situ* melanomas (29.6%) and thin melanomas (less than or equal to 0.75 mm

with 25% and between 0.76 mm and 1.5 mm with 23.4%), which have a more favorable prognosis. The average found was 1.89 mm. Gon et al. found 75% of diagnosed tumors with a thickness exceeding 0.75 mm and an average of 3.17 mm. Criado et al. observed similar results to those of our study, with most tumors showing thicknesses less than or equal to 0.75 mm.<sup>12,13</sup>

## CONCLUSION

In this study there is a high incidence of cutaneous melanoma cases per 100,000 inhabitants. Apparently, the incidence rate of malignant melanoma in Criciúma is higher than that of the rest of the country and state. However, the melanomas showed a predominance of Breslow's depth considered to have a more favorable prognosis. With regard to the level of tumor invasion, lower Clark's levels (III and I) were found.

The results of this study about the epidemiology and histopathology of melanoma share similarities with those of national and international studies. □

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How to cite this article/Como citar este artigo: Konrad P, Fabris MR, Melao S, Blanco LFO. Histopathological and epidemiological profile of cases of primary cutaneous melanoma diagnosed in Criciúma between 2005 and 2007. An Bras Dermatol. 2011;86(3):457-61.