

Authors:

Ellem Tatiani de Souza Weimann1
Thaísa Saddi Tannous Silvino1
Lissa Sabino de Matos1
André Luiz Simião2
Adilson Costa3

¹ Third-year Dermatology Resident Physician, Pontifícia Universidade Católica de Campinas (PUC-CAMPINAS) – Campinas (SP), Brazil

² Head of the Tumor, Surgery, and Mohs Surgery Ambulatory, PUC-CAMPINAS

³ PhD in Dermatology from the Faculdade de Medicina, Universidade de São Paulo (FMUSP) - São Paulo (SP), Brazil; European Cosmetic Safety Assessment Program - Vrije Universiteit Brussel, Brussels, Belgium

Correspondence:

Ellem Tatiani de Souza Weimann
Hospital e Maternidade Celso Piirro
Pontifícia Universidade Católica de
Campinas – PUC Campinas
Departamento de Dermatologia
Av. John Boyd Dunlop, s/n, Jd. Ipaussurama
Cep: 13060-904 – Campinas, SP, Brazil
E-mail: tatianisouza03@yahoo.com.br

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Epidemiological delineation of cutaneous melanoma cases treated in a tertiary hospital in Campinas, São Paulo State, Brazil

Delineamento epidemiológico dos casos de melanoma cutâneo atendidos em um hospital terciário de Campinas, São Paulo, Brasil

ABSTRACT

Introduction: Cutaneous melanoma has significant relevance among malignant skin tumors, for despite its low incidence (3–4%) it is associated with the highest mortality. In Brazil, estimates for the year 2014 correspond to 10% of all cancers, establishing this as an important public health issue.

Objectives: To present epidemiological data related to melanoma skin cancer in the midlands of the Brazilian State of São Paulo.

Methods: Descriptive retrospective cross-sectional analysis of data from a tertiary hospital's medical records. The analysis was subject to measurement and information bias. A descriptive analysis with frequency and percentage was carried out.

Results: There was a prevalence of cutaneous melanoma in women (71%), patients between 50 and 70 years of age (56%), Caucasians (78%), and individuals who identified their lesions through self-examination (42%), with predominant involvement of the trunk (35%). The most prevalent histological subtype was the superficial spreading (58%).

Conclusions: Understanding the epidemiology of cutaneous melanoma in a given geographic region enables and facilitates medical actions, allowing for the better establishment of strategies for primary and secondary prevention.

Keywords: melanoma, epidemiology, skin neoplasms.

RESUMO

Introdução: O melanoma cutâneo apresenta significativa relevância entre os tumores malignos de pele, pois apesar de sua baixa incidência (3-4%) é o de maior mortalidade. No Brasil, as estimativas para o ano de 2014 correspondem a 10% de todas as neoplasias sendo portando um importante problema de saúde pública.

Objetivos: Apresentar dados epidemiológicos relacionados ao câncer de pele melanoma em uma região do interior do Estado de São Paulo.

Métodos: Estudo descritivo, retrospectivo e transversal através de análise de dados de prontuários médicos de um hospital terciário, sujeito a viés de aferição e informação. Realizou-se análise descritiva com frequência e porcentagem.

Resultados: A prevalência dos casos de melanoma cutâneo foi para o sexo feminino (71%), indivíduos entre 50 e 70 anos (56%), caucasianos (78%), que identificaram suas lesões através de auto-exame (42%), com predomínio de acometimento no tronco (35%). O tipo subtipo histológico mais prevalente foi o disseminativo superficial (58%).

Conclusões: Conhecer a epidemiologia do melanoma cutâneo em uma dada região permite e facilita ações médicas, a fim de serem estabelecidas melhores estratégias de prevenção primária e secundária.

Palavras-chave: melanoma; epidemiologia; neoplasias cutâneas.

INTRODUCTION

The incidence of skin cancer has increased worldwide in the last three decades. The propensity to develop skin cancer during one's lifetime is linked to both individual and environmental characteristics, including skin type and phenotype, family history of skin cancer, and level of exposure to ultraviolet radiation (UV), which is cumulative over a lifetime.¹ Cutaneous melanoma is of significant relevance among malignant skin tumors, for despite its low incidence (3-4%) it has the highest mortality rate.

On a global scale, cutaneous melanoma is estimated to be between the 12th and 15th most commonly diagnosed cancers. However, in some developed countries, it is the first or second most frequent tumor in young adults. A high prevalence is observed in Australia and regions where the population is predominantly Caucasian or light-skinned. Low to intermediate levels are seen in Latin America, and the lowest rates are found in regions with a high population of Asian or African individuals.⁴ Between the years of 1998 and 2002, Sortino-Rachou (2011) found a total of 4,465 cases of melanoma reported in Latin America, corresponding to 1.2% of all cutaneous melanomas registered in CI5IX Data Base. The same author recorded the incidence of melanoma among inhabitants of Latin America as ranging from 1.1 and 6.5 cases/100,000 (4.6/100,000 inhabitants for females and 4.3/100,000 for females).⁵

In Brazil, estimates for the year 2014 are for 5,890 new melanoma cases (2,960 in men and 2,930 in women), totaling 10% of all neoplasias. For the Brazilian State of São Paulo, 830 new cases are estimated in male patients (incidence of 3.97 new cases/100,000) and 1,010 new cases in female patients (incidence of 4.59 cases/100,000), correlating to a serious public health problem.⁶ The present study was aimed at presenting epidemiological data related to melanoma skin cancer in a region of the city of Campinas (São Paulo State, Brazil), since there are few studies describing population data for specific regions of the country.

METHODS

A cross-sectional, retrospective, descriptive study was carried out using secondary data from medical records of all patients diagnosed with melanoma, at the Dermatology Department of the Pontifícia Universidade de Campinas – PUC Campinas, São Paulo, Brazil.

The inclusion criterion was a diagnosis of melanoma with primary cutaneous neoplasia. Primary non-cutaneous melanoma was an exclusion criterion. Data were collected on age, gender, race, comorbidities, time since onset of the lesion, referral method, personal and family history, anatomic site of the primary lesion, histological type, Clark level, Breslow thickness, presence of mitosis, ulceration, and regression.

Descriptive analyses with study of frequency and percentage were carried out. For the quantitative variables, the measure of central tendency (mean) was calculated. Excel® was used to analyze the data. Due to the fact that the study is

dependent on data obtained from patient records, it is subject to measurement and information bias. The study complied with the principles outlined in the Declaration of Helsinki.

RESULTS

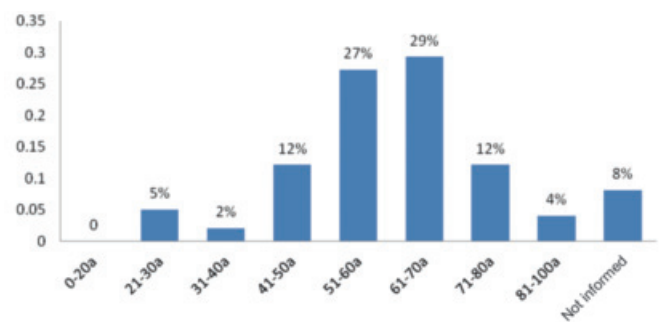
The service identified 99 cases of melanoma that were receiving follow-up. Of the total, 29% (29 cases) were male and 71% (70 cases) were female. According to skin color, 78% (77) of the patients were light-skinned, 9% (9) were mixed and only 1% was dark-skinned. Twelve percent (12) of the patients did not have their skin color mentioned in the initial anamnesis.

The mean age for the entire group was 61 years. The mean age by gender was 58 years for females and 59 for males. The distribution by age group shows a prevalence of cases in the 51 to 70 years group (56%), as shown in Graph 1.

When asked about the time of onset of the lesions, the patients either could not inform and/or this datum was not recorded (49% or 48 cases). Only 3 patients (3%) reported that the lesion was congenital, and once realizing a change in the pattern, were motivated to seek medical attention. Of the total, about 20% sought care within 1 year of identifying the lesion or perceiving a change in it. The lesion had been in place more than 3 years in 17% of cases and between 1 and 2 years in 11% of them.

In about 40% of recorded cases, there was no reference to how the patient had discovered the lesion (self-examination/spontaneous, referral by healthcare professional, or expert assessment). Thus, in the present study, 42% of patients noticed their lesions and sought medical attention. Only 4% were referred by a health professional that had noticed a suspicious lesion. In 14% of cases the exeresis of the lesion was recommended by a specialized professional, and in 49% of patients there was no information about the form of referral to the service.

Table 1 below presents the epidemiological data of personal and family history, and the presence of comorbidities in the melanoma cases reported. It was observed that 96% of patients had no personal history of melanoma and 82% had no family history. Of the 11% with a positive family history, 54% had a family history linked to parents and 36% had a family history linked to siblings. The most prevalent comorbidity was Systemic Arterial Hypertension, present in 35% of cases. Of the



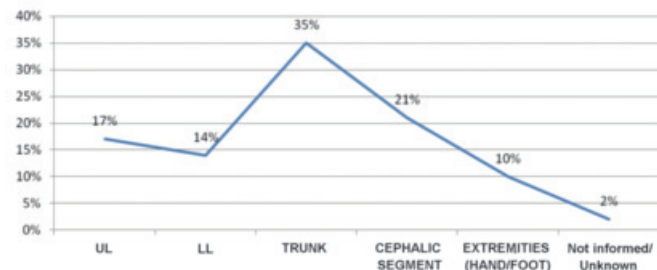
GRAPH 1: Percentage of melanoma cases X age group affected

11% of patients who reported malignancy, breast cancer was the most prevalent, accounting for 50% of cases.

The prevalence of the primarily affected anatomical site is shown in Graph 2.

Regarding the histological type, the most prevalent in the dermatologic service in question was the superficial spreading melanoma (58%) as shown in Graph 3.

TABLE 1: Personal and family history, and comorbidities		
PERSONAL HISTORY OF MELANOMA		
	N° ABSOLUTO	PORCENTAGEM
YES	3	3%
NO	95	96%
NA	1	1%
TOTAL	99	100%
FAMILY HISTORY OF MELANOMA		
NO	81	82%
NA	7	7%
TOTAL	99	100%
FAMILY ANTECEDENT		
FATHER	3	27%
MOTHER	3	27%
SIBLING	4	36%
GRANDMOTHER / GRANDFATHER	1	9%
TOTAL	11	100%
COMORBIDITIES		
SAH	37	35%
DM2	7	7%
MALIGNANCY	12	11%
CARDIOPATHY	2	2%
NEPHROPATHY	1	1%
OTHER	10	9%
DENIES	38	36%
TOTAL	107	100%
MALIGN NEOPLASIAS		
BREAST CANCER	6	50%
BASAL CELL CARCINOMA	3	25%
LYMPHOMA	1	8%
PROSTATE CANCER	1	8%
BOWEL CANCER	1	8%
TOTAL	12	100%

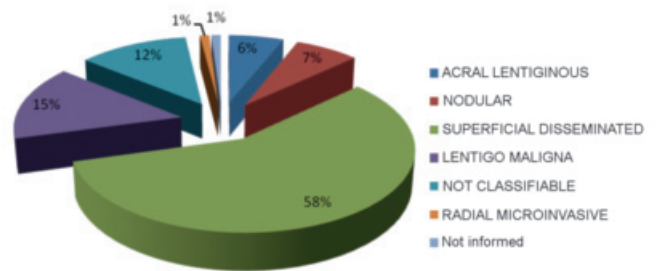


GRAPH 2: Prevalence of anatomic site of the primary lesion

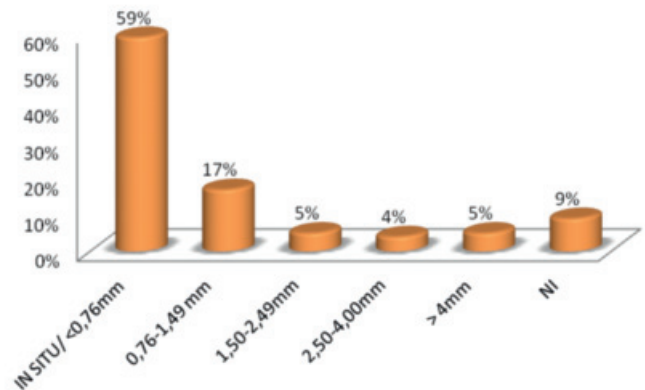
Graphs 4, 5, and 6 depict data on Breslow thickness, Clark level, and a presence/absence of mitosis, ulceration, and regression.

DISCUSSION

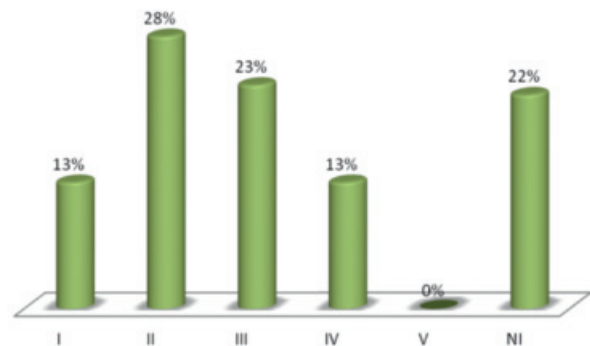
Melanoma is the cutaneous neoplasia with the worst prognosis, and therefore is a disease with a major impact on public health. It corresponds to approximately 5% of skin cancers and is responsible for roughly 3/4 of deaths from that condition, a fact that makes its epidemiological knowledge of the utmost importance.⁷



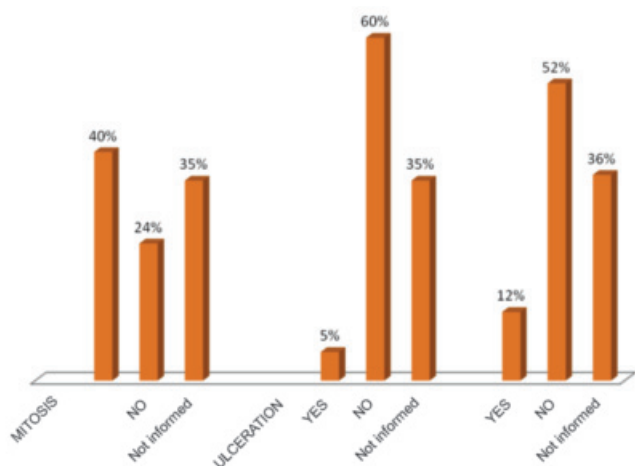
GRAPH 3: Prevalence of histologic type of melanoma



GRAPH 4: Percentage change in Breslow thickness



GRAPH 5: Percentage change in the Clark level



GRAPH 6: Percentage of mitosis, ulceration, and regression of the diagnosed melanomas

In the service in question, 29% of patients were male and 71% female. In a 30-year retrospective study carried out by Nasser (2011) in the city of Blumenau, in the southern Brazilian State of Santa Catarina, of the 1,002 cases of melanoma diagnosed, 44% were male and 56% female.⁸ Another retrospective 20-year study conducted at a university hospital in Belo Horizonte, the capital of the southeastern Brazilian State of Minas Gerais, has shown that in a sample of 101 patients, 61% were female and 39% male.⁹ As in the present analysis, those two studies also demonstrate a higher prevalence of the neoplasia in female patients – a trend that persists in most Brazilian studies.^{10,11}

In the present study, the average age of the sample was 61 (58 years for females and 59 for males). The distribution by age group shows a prevalence of cases in patients between 51 and 70 years old (56%). Unlike other malignancies, melanoma affects younger individuals, with an average age below that found in other types of tumors, as described by Brandão et al., who reported an average patient age of 55 years.⁹ The mean age found in the present study is similar to that found in most studies conducted in Brazil and abroad, again confirming the trend of melanoma affecting patients at a younger age.^{10,12,16}

The predominant skin color on the present study was light-skinned (78%). Once again the present study was consistent with those carried out by Brandão et al., which revealed a prevalence of melanoma of 74% in light-skinned patients and 26% in darker-skinned patients. Another study by Pinheiro et al. also confirms a higher prevalence of melanoma in fair skin (87.5% versus 12.5% in darker skin). In the present study, the incidence found in non-Caucasian patients (10%) is higher than that found in the literature,^{10,11,17,18} as evidenced by Purim et al. (2013), who found a prevalence of only 0.18% in dark-skinned patients.¹⁹

According to records, 96% of patients had no personal history of melanoma and 82% had no family history of melanoma. Of the 11% with a positive family history, 54% had parental history and 36% of cases had a history among siblings. In a study carried out at another university hospital in Brazil (Curitiba city, southern State of Paraná) 64.6% of patients had no history of skin cancer, however 24% of them described a family history of some type of skin cancer, not necessarily melanoma.¹⁹

In the present study, 42% of patients noticed their lesions on their own. Only 4% were referred by health professionals, for 14% of patients exeresis was recommended by a specialized professional, and in 49% of cases the form of referral to the service was not indicated. Almost half the cases are of patients who identified suspicious lesions on their own. This can be indicative of two scenarios: more well informed patients (awareness campaigns) or a lack of medical inspection of patients' skin. Maia & Basso (2006) reported that 54% of patients diagnosed with melanoma noticed the lesion themselves, while 24% were made aware by health professionals, and the remaining (22%) were made aware by spouses or others.²⁰ In Brazil it is not known who typically first discovers the melanoma cases. This knowledge could serve as a basis for education programs of the public and of health professionals.

The most prevalent anatomic site for primary lesions was the trunk (35% of cases), followed by the cephalic region (21%), upper limbs (17%), lower limbs (14%), and hands/feet (10%). In the study by Brandão et al., the main affected site was the head and neck (30.7%), followed by the trunk (21.1%), acral region (19.3%), upper limbs (15.1%) and lower limbs (9.6%). The most affected anatomical sites tend to vary according to the patient's histological type and gender. Most studies show a greater involvement of the trunk in men and of the legs in women.^{12,21-24}

The most prevalent histological type in the service in question was the superficial spreading melanoma (58%), followed by lentigo maligna (15%), non-classifiable tumors/radial microinvasive (13%), nodular (7%), acral lentiginous (6%), and uninformed (1%). International and Brazilian studies differ on the prevalence of histological type. There are reports of a prevalence of the extensive superficial type among Caucasians,^{9,25-27} and of the acral lentiginous type in non-Caucasians.^{9,21,28} In the Brazilian literature, the authors also observed a variation in the histological type across different regions of the country, also with a predominance of the superficial spreading type where most of the population has fair skin.^{9,29,30,31,32}

The majority of the studied patients (59%) had melanoma *in situ*, 17% had a Breslow thickness of 0.76-1.5 mm, 5% with a thickness of 1.5-2.49mm, 4% with a thickness of 2.5-4.0 mm, and 5% had lesions greater than 4.0 mm. The data of the present study are similar to those reported by Pinheiro et al. (2003), in which there is evidence of a higher prevalence of Breslow thicknesses of less than 0.75 (42.3%), which may trans-

late into specialists with a better ability to carry out early diagnoses, as this occurred in more developed countries.^{29,30,33}

CONCLUSION

Having a knowledge of the epidemiology of patients

with melanoma in a given geographical region provides a better understanding of the disease, with evaluation of the prevalence and associated risk factors. This facilitates medical actions, with better-established strategies for primary and secondary prevention. ●

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