

Primary Cutaneous Melanoma: 7-year Follow-up (2003–2009)

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Background: Primary cutaneous melanoma constitutes the main cause of skin cancer death in developed countries, and its incidence in recent years has been increasing in a steady, worrisome manner.

Aim: This study evaluated the histopathological aspects of this disease, and correlated them with patient prognosis.

Material and methods: The study included 138 patients with mild to severe primary cutaneous melanoma who were diagnosed in the Laboratory of Pathology Targu Mures during 2003–2009. Data were provided from hospital registers and the statistical analysis was performed by using the computer program called Excel.

Results: We found 76 malignant melanoma in females and 62 in males. The most common lesion areas were: the lower limbs (50), and the trunk (41).

Conclusions: Malignant cutaneous melanoma is still a major clinical challenge because all our patients with advanced tumors were diagnosed with poor prognosis.

Keywords: malignant melanoma, skin neoplasm

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Introduction

Melanoma is a neuroectodermal origin tumor that is formed from melanocytes cells that are found along the basal layer of the epidermis with the main function of producing the melanin pigment [1].

Melanoma is one of leading cause of cancer related deaths among young adults, if untreated [1,2]. The melanoma shows great potential for dissemination, which is the reason why it is considered one of the most severe forms of tumor among skin lesions, with high mortality rates when diagnosed late.

In 1969, it has been proposed staging criteria for lesions on the basis of skin invasion levels. Subsequently, Breslow and Macht pointed out the importance of primary melanoma thickness in millimeters. This index became the most important prognostic indicator, in association with data on ulceration, mitosis and regression [1, 3].

Patients with similar clinical and anatomic-pathologic prognostic factors may progress in different manners, sometimes progressing favorably, sometimes with disease dissemination, probably because of the intrinsic properties of these tumor cells [4]. A number of studies have examined molecular factors that may explain such differences, particularly focusing on genetic changes involved in tumorigenesis and melanoma progression [2, 3].

The aim of this study, was to analyze the incidence of malignant melanoma for a period of 7 years, melanoma diagnosed at the Department of Pathology of the Emergency Clinical Hospital of Targu Mures.

We aimed to study the most common location of skin cancer in women and men, the age when it occurs more often and tumor lesions in advanced stages of increased Clark and Breslow index.

Material and methods

This retrospective study comprised 138 primary cutaneous melanoma diagnosed at the Department of Pathology Targu Mures during 2003 and 2009. The histopathological preparations were obtained from surgical specimens, hematoxylin and eosin (HE) stained slides prepared in paraffin blocks, the prognosis parameters being evaluated in compliance with the World Health Organization Classification Protocol [1]. Patient's data (age, gender), topographic location and histopathological data (Breslow index, Clark level, ulceration) were analyzed for all cases.

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Results

During the period 2003–2009 we found: 138 primary cutaneous melanoma. In our cases during 2003–2005 the number of malignant melanomas had a linear trend followed by a peak in 2006. During 2007–2008 there is a linear trend followed by a decreasing trend in 2009 (Figure 1). Out of the total 138 cases the gender distribution was: 62 males and 76 females.

Patients' mean age in the studied group was 59.014 years, which was similar in both genders: 58.276 for females and 59.919 for males, and ranged from 17–89. In addition to it, there were no significant age differences between genders when they were compared divided into decades of life. The only difference appeared for the 7th decade in men with an increasing number of cases (Figure 2).

In women the most common skin location was on the lower limbs and for men it was on the trunk (Table I).

Among the morphological parameters, the Breslow index was most frequently 2–4 mm or more than 4 mm and the Clark IV level was the most common level both in women and men (Table I). Ulceration was also signifi-

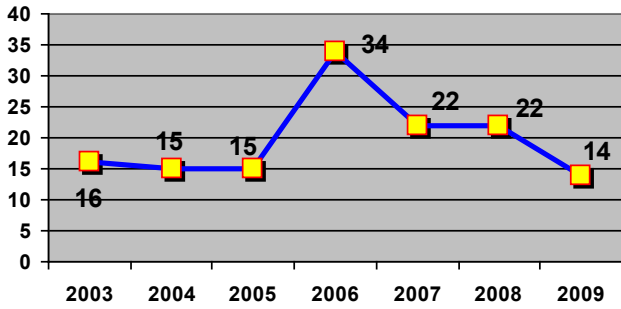


Fig. 1. The evolution of malignant melanomas at the Department of Pathology Targu Mures 2003–2009

cantly associated with unfavorable patient evolution and we found it in 65 out of the total 138.

Discussions

Malignant cutaneous melanoma is still a major clinical challenge, especially when we take into consideration the increasing incidence of smaller lesions that have been recorded in the last decades in developed countries, and more notably, in their Caucasian populations [1, 4, 6]. Melanoma is still the main cause of death due to skin cancer. The available diagnostic methods for early detection of the disease, based on microscopic findings of the tissue morphology, still lack accuracy [2]. Likewise, the clinical and histological variables determining the disease prognosis include the Breslow index, tumor size, presence of ulceration, mitotic index and level of vascular invasion, but gaps in the definition of risk groups persist, as the clinical manifestation of this neoplasm is quite variable from case to case [3].

Gender based reports of differences regarding the incidence of cutaneous melanoma appear to be related to the culture of each country, depending on the part of the body exposed more often to the sun and on the exposed person. Trunk lesions appeared more frequently in males

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Table I. Clinical and histopathological findings in 138 patients with primary cutaneous melanoma

Variables	Males	Females	Overall Group
Lesion site			
Head and neck	22.58%	17.10%	19.56%
Lower limbs	19.36%	50%	36.23%
Upper limbs	14.52%	14.47%	14.49%
Trunk	43.54%	18.43%	29.72%
Breslow index			
< 1 mm	9.68%	10.53%	10.15%
1–2 mm	17.75%	26.32%	22.46%
2–4 mm	37.09%	32.89%	34.05%
> 4 mm	35.48%	30.26%	33.34%
Clark levels			
I	0	0	0
II	4.83%	1.32%	2.89%
III	33.87%	34.21%	34.06%
IV	40.33%	43.42%	42.04%
V	20.97%	21.05%	21.01%

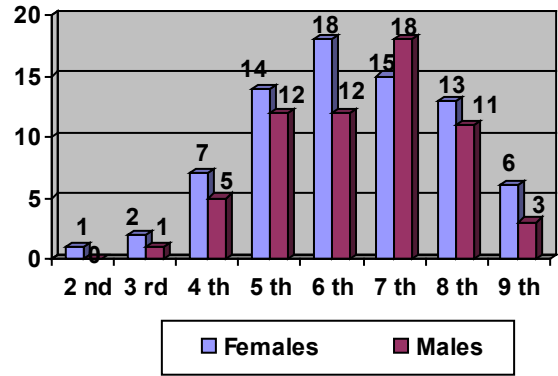


Fig. 2. Distribution of malignant melanomas on genders and decades of life

(43.54%), while lower limb lesions prevailed in females (50%) (Table I). These findings are consistent with speciality literature reports identifying the most frequent tumor sites as the backs in males (38%), and the lower limbs in females (42%) in Central and Western Europe [5, 6]. Such results confirm the connection of cutaneous melanoma to solar radiation, as the highest melanoma incidence in areas that were more exposed to solar radiation resulted in a disease incidence in different locations in males and females [5, 6, 7].

The Breslow index constitutes a predictive variable of disease evolution, as no patient with a < 1 mm-thick tumor progressed to disease dissemination, while patients with > 1 mm-thick tumors had dissemination, particularly those with > 4 mm-thick tumors, confirming the reports of other publications [2].

In our cases 37.09% males and 32.89% females had thick tumor between 2–4 mm. The most common level was Clark IV both in females’ 43.42% and 40.33% males (Table I).

These data differ from those published in the international literature where both women and men prevail melanomas with a Breslow index of less than 1 mm (34.3% males and 42.8% females and Clark level III (40% males and 36.7% females) [8]. Very high values of Clark level and Breslow index were associated with ulceration. 47.10% of the cases show poor prognosis.

Conclusions

In our cases during 2003–2005 the number of malignant melanomas had a linear trend followed by a peak in 2006 and then a decreasing trend in 2009.

A higher incidence of melanoma was found in areas where individuals were more exposed to solar radiations, trunk lesions being more frequent in males, and lower limb lesions appearing predominantly in females.

Malignant cutaneous melanoma is still a major clinical challenge because in our cases patients presented with advanced tumors and increased Clark’s level and Breslow index.

The prognosis of this melanoma worsens as the depth of invasion increases.

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