THE MELANOMA AND NON-MELANOMA SKIN CANCERS STAGING IN A GROUP OF PATIENTS

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Abstract: *The staging of skin cancer allows the issuance of the prognosis and the therapeutical concepts required to maximize the result and to reduce the negative impacts of the inappropriate tumor stage therapy. Study objectives: assessing the importance of accurate staging of NMSC and MSC as a prognosis factor. Material and methods: during 2007 – 2010 we conducted a prospective study of 385 patients with non-melanoma skin cancer (NMSC) and melanoma skin cancer (MSC) hospitalized in the Clinics of Dermatology and Oncology. In this patients we make the staging according to AJCC 2010 classification. Result and discussions. The NMSC was mostly diagnosed in the stage I (88,98% from BCC and 87,82% from SCC). Nearly half of MSC were diagnosed in late-stage disease (49,40% from MM was in the stage III and IV). By analyzing the Breslow index (BI) we noticed that BI with the worst prognosis (over 4mm) was the most common (36,14%). Conclusions. Our results support the idea of continued growth of the MM aggressiveness by late-stage diagnosis with more reserved prognosis.*

Cuvinte cheie: *stadializare, melanom malign, tumori cutanate non-melanocitare*

Rezumat: *Stadializarea tumorilor cutanate permite emiterea unor concepte prognostice şi terapeutice în vederea maximizării rezultatelor şi a reducerii impactelor negative ale unor terapii neadaptate stadiului tumoral. Obiectivele studiului: aprecierea importanței stadializării corecte a TCNM şi a TCM ca factor predictiv, prognostic. Material şi metodă: în perioada 2007 – 2010 am realizat un studiu prospectiv pe 385 de pacienții cu TCNM şi TCM internați în Clinica de Dermatologie şi Oncologie la care s-a realizat stadializarea în conformitate cu clasificările AJCC din 2010. Pacienții cu TCNM au fost diagnosticați în cea mai mare parte în stadiul I (88,98% din CBC, 87,82% din CSC), iar aproape ½ dintre cei cu TCM au fost diagnosticați în stadii tardive de boală, respectiv în stadiul III şi IV (49,40%). Prin analiza indicelui Breslow (IB) am observat că IB cu prognosticul cel mai nefavorabil (peste 4mm) a fost cel mai frecvent întâlnit (36,14%). Rezultatele noastre susțin ideea de agresivitate tot mai mare a MM, prin diagnosticare în stadii avansate de boală, cu prognostic tot mai rezervat.*

INTRODUCTION

The skin tumor staging is essential for the issuance of the prognostic and the therapeutical concepts required to maximize the results and to reduce the negative impacts of too aggressive or less efficient therapies. Given the less aggressiveness of basal cell carcinoma (BCC), the importance of BCC staging has a much lower applicability than staging the squamous cell carcinoma (SCC) and malignant melanoma (MM). When we are grading a tumor in a certain stage we can make a relative assesment of the evolution, the survival rate and the therapeutical options.

STUDY OBJECTIVES

Study objectives: assessing the importance of accurate staging of the NMSC and MSC as a prognosis factor.

MATERIAL AND METHODS

During 1.01.2007 – 31.12.2010 we made a prospective study on 385 patients with NMSC and MSC hospitalized in the Clinics of Dermatology and Oncology. In this group of patients we made the staging according to American Joint Committee on Cancer (AJCC) classification, 2010.

The staging was performed separately in subgroups as followed:

- subgroup 1a of patients with BCC,
- subgroup 1b of patients with SCC,
- subgroup 1c of patients with MM.

For the staging we respected the recognized criteria for BCC, namely (table 1):

Table 1. The criteria for BCC staging (1)

Stage	Tumor
Stage 0	Tumor limited to the epidermis, without affecting the dermis
Stage I	Tumor with a diameter less than 2cm, without extending to the lymph nodes or other organs
Stage II	Tumor greater than 2cm, without extending to the lymph nodes or other organs
Stage III	Tumor invasion to the underlying skin structures (muscle, cartilage, bone) and/or lymph nodes adenopathy but without systemic metastases
Stage IV	Tumor of any size with lymph node and systemic metastases

For the SCC staging we respected the AJCC criteria (2):

- **Stage 0** – Tis *(in situ)* N0 *(no lymph node adenopathy)* M0 *(without metastases).*
- **Stage I** – T1 *(tumor diameter ≤ 2 cm and < 2 high risk criteria)* N0 M0
- **Stage II** –T2 *(tumor diameter >2 cm or any size with ≥2*

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high risk criteria) N0 M0

- **Stage III** – T3 *(invasion of jaw, orbital, temporal bone)* N0 M0; T1 N1 *(single ipsilateral lymph node metastasis ≤ 3 cm)* M0; T2-3 N1 M0
- **Stage IV** – T1 N2 *(single ipsilateral lymph node metastasis > 3cm and ≤ 6cm or multiple ipsilateral lymph node metastases ≤ 6cm or bilateral lymph node metastases ≤ 6cm)* M0; T2-3 N2 M0; Any T N3 *(metastatic lymph node > 6cm)* M0; T4 *(invasion of skeletal structures or perineural invasion)* any N M0; Any T any N M1 *(distant metastases).*

The high risk criteria for the primay SCC: invasion in the deep structures or perineural invasion; auricular primary cancer; lips primary cancer; poorly differentiated or undifferentiated tumor.

A synopsis of the TNM staging system allowed us to view faster the MM stage. (table 2).

Table no. 2. The MM staging (3)

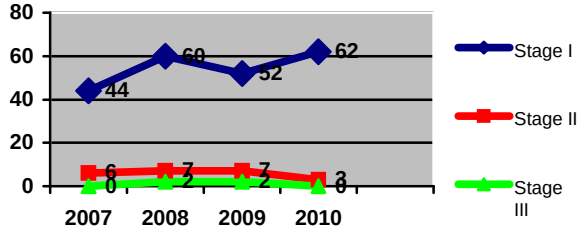
	T1a	T2a	T1b	T2b	T3a	T4a	T3b	T4b	
N0	IA	IB		IIA		IIB		IIC	Stage I-II
N1a	IIIA		IIIB		IIIA		IIIB		Stage III
N2a									
N1b	IIIB		IIIC		IIIB		IIIC		
N2b									
N2c	IIIB								
N3	IIIC								
M1a	IV								Stage IV
M1b									
M1c									

T1a - BI ≤ 1mm, without ulcerations and mitosis < 1/mm²; **T2a** – BI of 1,01-2mm, without ulcerations; **T1b** - BI ≤ 1 mm, with ulcerations and mitosis ≥ 1/mm²; **T2b –** BI of 1,01-2mm, with ulcerations; **T3a –** BI of 2,01-4mm, without ulcerations; **T4a** - BI > 4mm, without ulcerations; **T3b –** BI of 2,01-4mm, with ulcerations; **T4b** - BI > 4mm, with ulcerations; **N1a** – 1 lymph node metastases, micrometastases; **N1b** - 1 lymph node metastases, macrometastases; **N2a** – 2-3 lymph node metastases, micrometastases; **N2b** - 2-3 lymph node metastases, macrometastases; **N2c** - 2-3 lymph node metastases, in transit or satelite metastases; **N3** - 4 lymph node metastases or in transit or satelite metastases; **M1a** – Cutaneous, subcutaneous or distant metastases; **M1b** – Lung metastases; **M1c** – Any distant metastases with high LDH.

RESULTS

In the BCC subgroup stage I was the most common (88,98% had the tumor diameter less than 2 cm). In stage II were diagnosed 9,39% of the BCC and 1,63% were in stage III (figure 1).

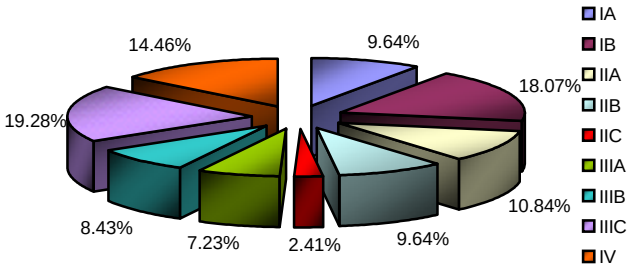
Figure no. 1. The BCC staging in our group of patients



A similar distribution was found in patients with SCC (87,72% were diagnosed in stage I). We had no cases of SCC in stage III.

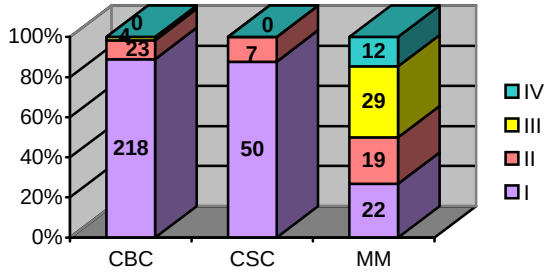
In the group of patients with MM almost half of the patients were diagnosed in late-stage disease (49,40% were in stage III and IV), with unfavorable prognosis. The most common stage was IIIC (19,28%), and the IIC was less common stage (2,41%) (figure 2).

Figure no. 2. The MM staging in our group of patients.



By the compared analyzing we made between the patients with NMSC and with MSC we noted that NMSC are more frequently diagnosed in stage I while MM are diagnosed more frequently in stage III (figure 3).

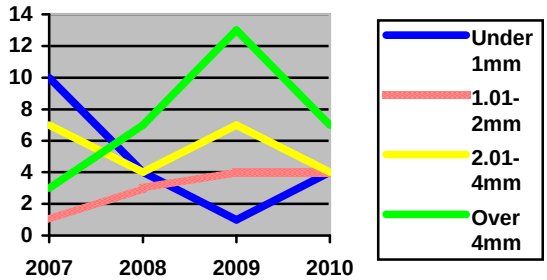
Figure no. 3. The comparated analysis of tumor stage NMSC/MSC



By analyzing the prognostic factors we observed that Breslow index who had the worst prognosis (more than 4mm) was the most common (36,14%) and the BI under 1 mm was present in 22,89% from the patients.

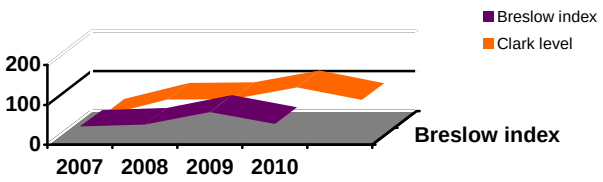
During 2007-2010 the MM with BI under 1mm showed variations between 4% and 47,62% (the highest value being in 2007). The BI over 4 mm was found in 38,89% to 52% from the MM studied (the maximum was in 2009) (figure 4).

Figure no. 4. The Breslow index evolution



While Clark level is not used for staging the MM (4), according to recent classification, we chose to monitor, also, this parameter. So, the most cases had the Clark level between 3 and 5 (89,16%). The Clark level IV was the most common (32,53%). The comparative analysis of these two prognostic indicators (Breslow index and Clark level) indicated a relatively similar evolution (figure 5).

Figure no. 5. The comparated evolution of Breslow index and Clark level



DISCUSSIONS

In 2010 was made the last update of TNM staging according to AJCC (American Joint Committe on Cancer). The staging of skin cancer allows the issuance of the prognosis and the therapeutical concepts required to maximize the result and to reduce the negative impacts of the inappropriate therapy of the tumor stage.

In our group of patients we performed the tumor staging of all the skin cancers studied and after staging separately on subgroups: 1a (BCC), 1b (SCC) and 1c (MM). We observed that the patients with NMSC was diagnosed mostly in stage I (88,98% from the BCC and 87,82% from the SCC). In MM group the results were different: almost half of the patients were diagnosed in late-stage diseases (49,40% were in stage III and IV), with unfavorable prognosis. Given the greater aggressiveness of MM these results are alarming and are requiring further actions of peoples education (regular skin exam by general practicioner with the guidance of the suspicious lesions in specialized services of dermatology) (5, 6).

By histopathological prognosis factors analysis we found that Breslow index with the worst prognosis (over 4mm) was the most common (36,14%) and the BI under 1mm was identified in 22.89% from de MM.

During the study we observed that in MM there is an accelerated downward trend of BI under 1mm and descendant for BI of 2.01-4mm. An upward movement is seen in MM with BI of 1.01-2mm and BI over 4mm. Noteworthy is the absence of the cases of in situ melanoma. A comparative analysis of BI between 2007 and 2010 shows that the BI under 1mm in 2010 had a decrease of 2,5x comparated to 2007; the BI of 1.01-2mm had an increase of 4x; the BI of 2.01-4mm had a decrease of 1,75x and the BI over 4mm had an increase of 2,33x.

By monitoring the evolution of Breslow index and Clark level we observed that there is a relatively similar development and interconnections between these histopathological prognosis factors.

Our results support the idea of continuous growth of the MM aggressiveness by late-stage diagnosis with a more reserved prognosis. Althought the global incidence of MM is clearly upward, the trend of global aggressiveness is to diagnose the MM in early stage with a better prognosis (7, 8). Data obtained by us is similar only to the trend of the MM incidence and not to the precocity of the diagnosis. This is due primarily to the patients lateness to consult a dermatologist and the poverty of the skin cancer prevention methods used (9, 10). Finally these results are due to the lack of the health education, from school, where there should be a program of skin health and the methods to improve the skin health.

CONCLUSIONS

The patients with NMSC were diagnosed mostly in stage I (88,98% from the BCC and 87,82% from the SCC).

Almost half of the MM were diagnosed in late-stage disease (49,40% were in stage III and IV), with an unfavorable prognosis.

In MM there is an accelerated downward trend of BI under 1mm and upward trend of BI of 1.01-2mm and BI over 4mm.

Our results support the idea of continued growth of the MM aggressiveness by late-stage diagnosis with more reserved prognosis.

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