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A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE OUTCOMES OF MELANOMA IN BELARUSIAN POPULATION

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Introduction

Malignant melanoma (MM) accounts for about 5 % of all skin cancers, but it is responsible for 80 % of deaths. Basically, MM originates from melanocytes, the neural crest derived cells that migrate into the epidermis during embryogenesis to reside in the basal layer of the epidermis [1]. The overwhelming majority of melanomas originate in the skin, but some melanomas may arise from other primary sites. The primary incidence of skin melanoma in the Republic of Belarus over 25 years from 1991 through 2015 has increased 3.3-fold from 2.6 to 9.0 per 100,000 population. Before the age of 45, women have a higher risk than men, but after the age of 60, the risk for men is twice as high as for women. The strongest risk factors for MM are a family history of melanoma, multiple benign or atypical nevi, and a previous melanoma and the additional risk factors includes immunosuppression, sun sensitivity, and exposure to ultraviolet (UV) radiation. As per Belarusian population the most common risk factors are UV radiation, sun sensitivity, and familial history of the most common CDKN2A and CDK4 are associated with high-penetrance susceptibility for melanoma. Using sunscreen and avoiding UV light may prevent melanoma [2]. Treatment is typically removal by surgery. In those with slightly larger cancers, nearby lymph nodes may be tested for metastasis. Most people are cured if spread has not occurred and for those in whom MM has metastasized, immunotherapy, biologic therapy, radiation therapy, or chemotherapy may improve the survival rate of the enrolled patients [3]. Therefore, in our prospective study the subjected patients were categorized under the sequences of histological subtypes, classical stages and the development of secondary malignancies of primary MM and carried out them to specific treatment and prevention of their course period of melanoma by increasing the surveillance rate of 5 years and decreasing the mortality rate over Belarusian population.

Aim

The purpose of this abstract is to understand the most common metastatic cancer-melanoma by establishing their pathology and carrying out the meta-analysis in the enrolled patients in our data and bringing some source of valuable life by providing a proper medical care, prevention and education among the worldwide.

Materials and Methods of research

This article carries out a systematic review and meta-analysis of the Belarusian population subjected patients from 2011–2013. The total number of patients who screened for skin melanoma in our data is 262 and as follows 2011 (n = 104) in which (44 male, 60 female), 2012 (n = 108) in which (39 male, 69 female) and 2013 (n = 50) in which (13 male, 37 female). The data was carried out in an anamnesis questionnaire study with the acceptance of patients who were residing at Gomel Regional Clinical Oncological Dispensary, Gomel, Belarus.

Results and Discussion

This article consumes about 262 patients from 2011–2013 and been carrying out the male female ratio, median age, histological subtypes, stages of melanoma,

secondary malignancy and the most common distribution sites of melanoma of these subjected patients. The male female ratio in 2011 (42,3:57,6), 2012 (36,11:63,8) and in 2013 (26:74) this indicates the female distribution of melanoma is quite higher than the males. The patients were categorized into four age groups in our study as <30, 30–59, 60–89, >90 and in this, patients under 30–59 age group were at the high risk of MM, especially females > males and the median age of patients in 2011 is 61,5, 2012 is 58,6 and 2013 is 63,3. Traditionally, MMs have been divided based on the histologic subtypes of the enrolled patients which has represented graphically in the figure.

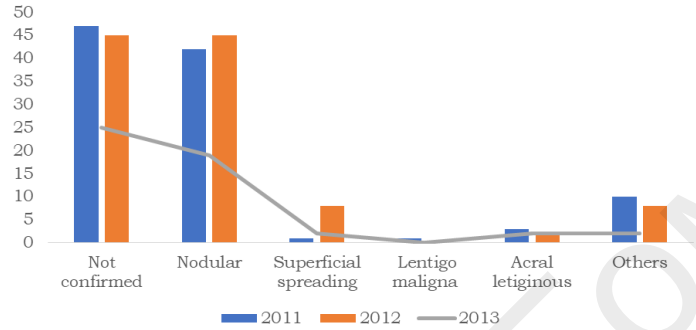

Figure 1 — Histological Subtypes of the enrolled patients (2011–2013)

According to this presentation, the nodular type, not-confirmed type is in the high variant of their histological presentation in 2011 and 2012 and other type has slightly compensated especially in 2011. The progress in understanding the molecular biology of melanoma will soon lead to further staging of the MM. The staging of melanoma is schemed as stage 0 which explains that the melanoma involves only the epidermis and has not spread to the dermis, stage 1 and their subdivisions 1a and 1b indicates that melanoma is not large >2 cm and without ulceration and therefore the patients subjected in stage 1 (18,6 %), 1a (11,3 %) and 1b (4,3 %) overall, stage 2 and their subdivisions 2a, 2b, 2c indicates that melanoma is large >2 cm with or without ulceration and here the patients representing in 2 (24 %), 2a (3,3 %), 2b (6,6 %) and 2c (5,6 %) overall, stage 3 and their subdivisions 3a, 3b, 3c indicates that melanoma has spread to tissues beneath the skin and has metastasis to regional lymph nodes and this case patients might tends to develop Secondary Malignancy (SM) of the primary disease and therefore the patients representing in 3 (5,3 %), 3a (1,6 %), 3b (0,6 %) and 3c (2,6 %) overall and stage 4 (2,6 %) representing overall which indicating that melanoma can be in any varied size and has metastasized to other organs therefore there are some patients who tends to develop second malignancy as a role of primary disease and therefore the providing data will help us to evaluate the survival rates in these patients than the patients with melanoma. In 2011 out of 104, 19 patients (male = 11, female = 8), 2012 out of 108, 24 patients (male = 9, female = 15) and in 2013 out of 50, 17 patients (male = 5, female = 12) had developed Second Primary Malignancy (SPM) along with local site of distributions. According to male proportion SPMs are developed before 48 months and after 24 months of the primary disease and the most common sites of their distribution were skin melanoma, skin basal cell carcinoma, testicular, prostate, kidney colorectal, vesical and little involving the larynx and epiglottis. Among them the skin melanoma, skin basal cell carcinoma, prostate and colorectal are in higher distribution for males. Now according to female proportion, the SPMs are developed before 36 months and after 12 months of the primary disease and the most common sites of their distribution were skin melanoma, skin basal cell carcinoma, uterus, ovary, endometrial, breast, thyroid, rectal, colorectal, gastric and others. Among them uterus, skin

MM, skin basal cell carcinoma, breast and thyroid are in higher distribution for females. Therefore, after establishing a complete analysis on the histological variants, staging, SM and its distribution, now it's important to carry out the necessity of the treatment and prevention of malignant melanoma and also the SM. Patients with stage 1 melanoma do not require any established studies. For deeper primary melanomas (stages II and III), further tests may be performed (LFT, LDH, and baseline whole body imaging). All patients with surgically incurable locally advanced melanoma (stage IIIb/IIIc) and metastatic melanoma (stage IV) should undergo complete blood work including LDH and imaging of the rest of the body can be obtained by MRI, CT of the chest, abdomen, and pelvis with both oral and IV contrast or a combined whole body 18 fluorodeoxyglucose (FDG) positron emission tomography (PET) CT. PET scan may be especially helpful with the assessment of possible bone and bowel metastasis. Now, since according to our meta-analysis surgery is the most common choice for treating in these enrolled patients because of there increased in the percentage of the development of MM and with moderate to severe establishment of staging factor. Therefore, local excision of early melanoma is the only proven method of curative therapy, presence of palpable nodes it should also be excised. Some specific chemotherapeutic agents like methotrexate, bleomycin, cisplatin, 5-fluorouracil are active agents which achieved in significant reduction of the tumor of about 15–30 % in patients and also immunotherapy, targeted therapy, irradiation can also be indicated based on the status of patient. Therefore, in our article we used to explain about prevention, since it plays a major role in this malignant melanoma which includes avoidance of sun as primary and secondary it depends on careful physical examination and biopsy of all suspicious skin lesions.

Conclusion

We know that melanoma is one of the deadliest skin cancers. So, in this case we can meet the both morbidity and mortality in our subjected patients. In 2011 out of 104, 59 patients were died (48 patients due to MM and 11 patients due to SM), in 2012 out of 108, 42 patients were died (37 patients due to melanoma and 5 patients due to SM), and in 2013 out of 50, 18 patients were died (8 patients due to MM and 10 patients due to SM). Therefore, our goal is to provide some follow-up to identify potentially curable recurrence and to screen for secondary primary tumors. At least one annual skin examination by a dermatologist is recommended. Patients with high-risk factors (including family history of MM, skin type, and presence of dysplastic nevi or nonmelanoma skin cancers) may require more frequent examination. Patients with stage IA melanoma should be seen every 3 to 12 months, and the examination of regional lymph nodes should be emphasized. For patients with stage IB to III melanomas, history and physical should be performed every 3 to 6 months for 3 years, then every 4 to 12 months for 2 years, and annually thereafter. Patients with stage IV disease who are rendered disease-free are followed as are patients with stage III disease. The regular follow-up should last between 5 and 10 years.

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