Potential for age and metastasis-stage for determining prognosis in metastatic melanoma patients: a retrospective study

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Abstract

Statement of the Problem: Advanced melanoma involves metastasis to distant sites and is associated with poor long-term survival (Fisher et al., 2012). The sites of recurrence include (A) subcutaneous tissue and soft tissue, (B) lungs, (C) bones and visceral organs, (D) brain and spinal cord (Fisher et al., 2012). Current treatment options for melanoma include interleukin 2, targeted therapy (BRAFi, MEKi) and immunotherapy (CTLA4 antibody, PD1/PDL1 antibody). The purpose of this study is to examine whether the serum lactate dehydrogenase level, metastatsis-stage, number of lesions, treatment line and age can be used as prognostic factors in metastatic melanoma patients on immunotherapy (IO) and targeted therapy (TT). Methodology & Theoretical Orientation: The prognosis was quantified using Kaplan-Meier survival curves for each factor in TT and IO. This was done using two time variables; time on treatment, and overall survival. Findings: The results for TT generally show no significant correlation between either time on treatment or overall survival with regards to the prognostic factors. One exception is the significant correlation between age and overall survival, indicating that older patients (>60 years old) have lower overall survival compared to younger patients (=<60 years old). Similarly, for patients on IO, there is a significant correlation between age and time on treatment, and a correlation between m-stage and overall survival. Conclusion & Significance: The correlation between age and overall survival is supported by additional studies that have shown a trend for lower overall survival for older populations on TT. Furthermore, the results study are likely affected by chance due to small sample size (n=25). Therefore, even though they indicate age as a prognostic factor for time on treatment and overall survival, further efforts will clarify the correlation between other factors and time variables.

Recent Publications

1. Betof A, Nipp R, Giobbie-Hurder A, et al. Impact of age on outcomes with immunotherapy for patients with melanoma. *Oncologist.* 2017; 22(8): 963-971.

2. Bhatia P, Friedlander P, Zakaria E, et al. Impact of BRAF mutation status in the prognosis of cutaneous melanoma: an area of ongoing research. *Annals of Translational Medicine.* 2015; 3(2).

3. Dummer R, Ascierto P, Gogas H, et al. Encorafenib plus binimetinib versus vemurafenib or encorafenib in patients with BRAF-mutant melanoma (colombus): a multicenter, open-lable, randomised phase 3 trial. *Lancel Oncology.* 2018; 19(5): 603-615.

4. Grob J, Amonkar M, Karaszewska B, et al. Comparison of dabrafenib and trametinib combination therapy with vemurafenib monotherapy on health-related quality of life in patients with unresectable or metastatic cutaneous BRAF Val600- mutation-positive melanoma (COMBI-v): results of a phase 3, open-lable, randomized trial. *Lancet Oncology.* 2015; 16 (3): 1389-98.

5. Kirkwood J, Lynn S, Louise P. Interleukin-2 (IL-2, proleukin). *Melanoma Research Alliance.* 2016.

6. Robert C, Long G, Brady B, et al. Nivolumab in previously untreated melanoma without BRAF mutation. *New England Journal of Medicine.* 2015; 372(4): 320-30.

7. Robert C, Schachter J, Long G, et al. Pembrolizumab versus ipilimumab in advanced melanoma. *New England Journal of Medicine.* 2015; 372(26): 2521-32.



Biography

Sheida Naderi-Azad has an expertise in immunodermatology, with a deep interest in melanoma immunotherapeutics, primary immunodeficiency diseases such as atopic dermatitis, and autoimmune conditions such as psoriasis. She has developed this interest upon completing her Bachelor of Science in Microbial and Environmental Pathophysiology at the University of British Columbia, and further completing a summer studentship at the Melanoma Clinic, Massachusetts General Hospital. She has had numerous published articles and presentations on melanoma therapeutics, anti-inflammatory conditions and dermatologic comorbidities such as mood disorders.

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