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KIT Testing and Survival in Malignant Melanoma Patients

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RESEARCH REVIEW

Malignant melanoma is the most common lethal cutaneous malignancy. It arises from melanocytes that originate from neural crest [1]. Alterations in KIT proto-oncogene define a unique molecular subset in malignant melanoma. Mutations and amplification of KIT are observed in 3% of all melanomas and are more common in melanoma cases arising from mucosal, acral or chronically sun-damaged surfaces [2]. The clinical application of KIT inhibition in melanomas driven by KIT alterations has been reported in patients treated with agents such as imatinib, dasatinib, sorafenib and sunitinib [3]. The study consisted of 11 of cases of malignant melanoma that had referred to the oncology clinic in Kermanshah, Iran. There were 5 male and 6 female patients with mean age ± SD of 57.2±18.94 years (range, 18-78 years). Of 11 patients, 5 (45.5%) showed KIT positivity. Two patients had lymph node involvement and all patients had BRAF of wild-type. The 5-year survival rate for all patients was 54.5% and mean survival was 37.5 months (Figure 1A). The 5-year survival rate of the patients with KIT positivity and KIT negativity was 60% and 50%, respectively, mean survival was 42.2 and 33.6 months, respectively (Figure 1B).

There was no significant difference in terms of overall survival rate between KIT positive or negative groups (Hazard ratio=0.456; 95%CI=0.065 to 3.189; P=0.428).

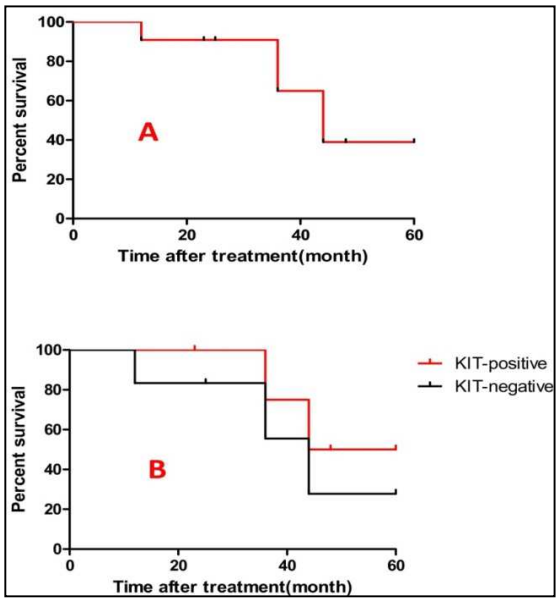

Figure 1: (A) Five-year survival rate of all patients, and (B) Five-year overall survival of the patients with KIT-positive compared with KIT-negative

KIT expression was recently reported in 96% of 23 primary melanomas and 45% of 31 metastatic melanomas [4]. Imatinib as a KIT receptor tyrosine kinase inhibitor in patients with metastatic melanoma and KIT mutations or amplifications had an overall response rate of 23.3% [5]. Carvajal *et al*., [6] showed that median survival from the time of initiation of targeted therapy based on KIT status in

metastatic melanoma patients was 10.8 months. In our study, 5-year survival rate of the patients with KIT positivity was 60% and for the patients with KIT negativity was 50% (P>0.05). One of the limitations of the present study was that due to the low prevalence of melanoma, we had a few cases. In conclusion, the patients with KIT positivity had a better survival than KIT negative patients, whatever there was no significant correlation, but it is suggested the further studies with more cases in this field.

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