MELANOMA AND MELANOCYTIC NAEVI

CHEMOKINE-BASED PREDICTION OF THE THERAPEUTIC EFFICACY OF ANTI-PD-1 ANTIBODY THERAPY FOR MALIGNANT MELANOMA

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Introduction: Recently, anti-PD-1/PD-L1 antibodies, which are immune checkpoint inhibitors, have become the first-line drugs for the treatment of advanced malignant melanoma. However, because the response rate is 20%–30%, biomarkers for predicting therapeutic efficacy before treatment urgently need to be discovered. In a preliminary experiment, we identified SDF-1α and RANTES plasma levels prior to anti-PD-1 antibody administration to be candidate parameters correlating with the therapeutic efficacy of anti-PD-1 antibodies.

Objective: We investigated whether SDF-1α and RANTES levels in plasma before anti-PD-1 antibody administration could be used as biomarkers to predict the therapeutic efficacy of anti-PD-1 antibodies.

Materials and Methods: Pre-treatment chemokine levels in plasma samples from 17 patients with advanced malignant melanoma who underwent anti-PD-1 antibody therapy were measured using ELISA. The mean age was 69 years, and the subjects included 11 men and 6 women. After receiving 4–8 doses of the anti-PD-1 antibody, the patients underwent initial imaging assessment with CT and efficacy evaluation according to RESIST guidelines. Eight patients with a therapeutic efficacy of PR or SD were included in the responder group and 9 patients with PD were included in the refractory group.

Results: No significant differences between the two groups were found with respect to SDF-1α or RANTES levels. However, significantly more patients had both SDF-1α and RANTES levels lower than the respective mean values in the responder group, and the survival rate after anti-PD-1 antibody therapy in this subgroup of the patients tended to be higher than in any other subgroup (P = 0.052).

Conclusions: The therapeutic efficacy of anti-PD-1 antibody therapy for advanced malignant melanoma may be predictable with pretreatment levels of SDF-1α and RANTES in plasma. We will continue to investigate this matter on a larger number of patients.