AB045. Prognostic significance and characterization of small epithelioid cell population in uveal melanoma

Prisca Bustamante[1], Pablo Zoroquiain[2], Evangelina Esposito[1], Ciro Garcia[1], Maria A. Saornil[1], Wiliam April[1], Miguel Burnier[1]

[1]Henry C. Witelson Ocular Pathology Laboratory, McGill University Health Centre Research Institute, Montreal, QC, Canada; [2]Department of Pathology, School of Medicine, Pontifial Catholic University of Chile, Santiago, Chile

Background: Uveal melanoma (UM) is a malignant neoplasia that is composed of two main types of cells: spindle and epithelioid. There is a subset of neoplastic small epithelioid cells located predominantly in the infiltrative tumor margins or surrounding blood vessels. The aim of this study is to characterize and evaluate the correlation between the presence of these small epithelioid cells and clinical outcome.

Methods: The clinical-pathological features of 70 UM patients were evaluated. The presence of small epithelioid cells was quantified based on percentage of tumor volume, and they were characterized using melanocytic markers (HMB-45, Melan A and SOX-10), stem cell markers (CD133, CD24 and CD38), and T cell lymphocytes (CD3). Univariate and multivariate analyses were conducted. Clinical follow up was available for all patients.

Results: The ratio of small epithelioid cell components of all 70 tumors ranged from 0% to 30% (median, 1%). Thirty-nine tumors (55.7%) had areas with small epithelioid cells. Univariate analysis showed that mixed versus spindle cell, higher lymphocytic infiltration, macrophage infiltration, ciliary body involvement, and >5% of small epithelioid cell component had a significant negative impact on metastasis-free survival. Small epithelioid cell component >5% was present in 24 cases (34.3%). Of these, three were classified as spindle and 21 were mixed. Multivariate analysis revealed that a >5% small cell component was the most significant morphological adverse prognostic factor. Moreover, the small epithelioid cells were negative for HMB45, stem cell markers and CD3, and focally and weakly positive for MELAN A and SOX10.

Conclusions: A high small epithelioid cell component is a strong negative prognostic indicator in patients with UM.

Keywords: Uveal melanoma (UM); small epithelioid cell

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