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PD1-PDL1 axis in lymphoproliferative diseases: The pathologist's point of view

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The PD1-PDL1 axis is one of the major mechanisms of immune escaping exerted by several cancer types in which up-regulation of PDL1 is observed. The success of checkpoint blockade therapy in the treatment of different solid tumor encouraged the research for similar results in the spectrum of lymphoproliferative diseases. Several clinical trials of PD1-PDL1 blockade have been conducted in hematologic malignancies, in particular, in Hodgkin lymphoma. In order to improve the therapeutic usefulness of this approach, several studies were performed to investigate and quantify the PD1-PDL1 expression levels by immunohistochemistry (IHC) on formalin-fixed, paraffin-embedded tissue sections, in different B-cell and T-cell lymphoma entities and in classical Hodgkin lymphoma. As for other predictive biomarkers, reliable results are achieved by performing the staining in a standardized setting of pathology laboratory practice. Numerous critical issues are under evaluation to determine the reproducibility of PD1-PDL1 immunohistochemistry. The IHC labeling is sensitive to pre-analytical parameters (e.g. cold ischemia, the type and duration of fixation). Negative and positive control slides should be included in each staining run. An expert pathologist using a light microscope should assess the staining pattern, both in morphologically unequivocal tumor cells and in ineffective inflammatory infiltrating cells. The scoring may be achieved using 10-20x objectives and confirmed at 40x if needed. PDL1 expression should be semi-quantitatively evaluated in representative areas with the higher percentage of neoplastic cells while tumor areas with necrosis should be excluded. Cytological material usually does not allow correct evaluation of the cell stained with anti-PDL1 antibodies.

Biography

Antonella Bianchi completed her Graduation in Medicine and Surgery in 1991 and Post-graduate Diploma in Pathology at Catholic University of Rome in 1996. She is an Assistant at Pathology Unit of University Hospital Campus Bio Medico of Rome (Italy), is the referent for hematological pathology with numerous published papers in reputed journals. She attends national and international conferences and member of two scientific societies (SIAPEC and FIL). She performs teaching and tutorial activity for the School of Medicine.

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