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Congress Abstract

Diagnostic Algorithm for B-Cell Lymphomas Under Conditions of a Limited Antibody Panel

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Introduction: Under conditions of limited availability of immunohistochemical antibodies, the key challenge is the rational use of a minimal panel that allows confirmation of the lymphoid nature of the tumor, determination of B- or T-cell lineage, and selection of the further direction of investigation.

Objective: To evaluate the feasibility of a stepwise diagnostic algorithm for B-cell lymphomas using a limited antibody panel.

Materials and Methods; A retrospective analysis of 139 cases of lymphoproliferative diseases was conducted. At the first stage, CD45, CD20, CD3, PanCK, and Ki-67 were used. CD45 was used to confirm the lymphoid nature of the process, PanCK to exclude epithelial tumors, CD20 and CD3 to determine B- or T-cell lineage, and Ki-67 to assess proliferative activity. Additional antibodies were ordered based on morphological and immunophenotypic indications, taking into account their actual availability.

Results: A B-cell phenotype was established in 100 of 139 cases (71.9%), Hodgkin lymphoma in 35 (25.2%), and T-cell lymphomas in 4 (2.9%). Among the 100 B-cell lymphomas, in 32 cases (32.0%), the diagnosis was formulated at the level of B-cell lymphoma without precise nosological subclassification. Diffuse large B-cell lymphoma/large B-cell lymphoma was diagnosed in 36 cases (36.0%), follicular lymphoma in 10 (10.0%), small/middle B-cell lymphomas, including SLL/CLL, in 9 (9.0%), marginal zone lymphomas/MALT-type in 7 (7.0%), Burkitt lymphoma/highly aggressive B-cell lymphoma in 4 (4.0%), and mantle cell lymphoma in 2 (2.0%). The high proportion of diagnoses without complete subclassification reflects the limited availability of additional markers, whereas the basic panel allowed lineage determination and identification of the need for a second diagnostic stage.

Conclusion: The CD45/CD20/CD3/PanCK/Ki-67 panel is a practical first step in the diagnosis of lymphoproliferative diseases under resource-constrained conditions. Expansion of the panel should be performed in a targeted manner, based on morphology and the results of the first stage. In the absence of the necessary antibodies, establishing the B- or T-cell phenotype is a justifiable level of diagnostic conclusion and allows avoidance of unjustified nosological verification.

Keywords: B-Cell Lymphomas; Immunohistochemistry; CD20; CD3; CD45; PanCK; Ki-67; Diagnostic Algorithm