3. IMMUNOHISTOCHEMICAL PARTICULARITIES AS PROGNOSTIC FACTORS IN DIFFUSE LARGE B-CELL NON-HODGKIN LYMPHOMA

Author: Dudnic Cristina

Scientific advisor: Buruiană Sanda, PhD, Associate Professor, Head of Hematology Discipline, Department of Internal Medicine, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Diffuse Large B-Cell Lymphoma (DLBCL), the most common type of Non-Hodgkin Lymphoma (NHL) globally, is classified into two distinct biological categories based on the gene expression profile (GEP): the germinal center B-cell (GCB) subtype and the activated B-cell (ABC) or non-GCB subtype.

Aim of study. Identification of Immunohistochemical Particularities as Prognostic Factors in Diffuse Large B-Cell Non-Hodgkin Lymphoma.

Methods and materials. Data from medical scientific literature were examined, identified through Google Search and databases such as PubMed, Cochrane, Scopus, along with international clinical guidelines from NCCN and ESMO.

Results. Studies have indicated that determining the cell of origin phenotype in DLBCL using gene expression profile (GEP) is significant for establishing the prognosis. Tumors with the GCB phenotype showed a better clinical course compared to those with the ABC/non-GCB phenotype. The classification into GCB and non-GCB subtypes, using the Hans algorithm, suggests a correlation between the expression of CD10 and BCL6 genes in DLBCL GCB and MUM1 in DLBCL non-GCB. In a study led by Patrascu A-M and his team (2017) on a sample of 601 patients, subjects with GCB type DLBCL exhibited a higher overall survival rate and progression-free survival compared to those with non-GCB DLBCL, although the prognosis may vary depending on the specific markers expressed within the same subtype. Studies using fluorescent in situ hybridization (FISH) reported that 7% to 10% of DLBCL cases harbored genetic translocations MYC, BLC2, and/or BCL6 and were termed “double-hit” lymphoma (DHL) or triple-hit lymphoma. More than 90% of patients with DHL present high-risk clinical features, such as leukocytosis, central nervous system (CNS) involvement, lactate dehydrogenase values three times above the upper limit, and an advanced disease stage. The presence of MYC rearrangements in combination with BCL2 and/or BCL6 has been described as a distinct entity with prognostic significance, presenting a poor long-term prognosis, refractoriness to therapy, and an increased risk of relapse.

Conclusion. Research and studies emphasize the importance of evaluating the expression of MYC, BCL2, and BCL6 genetic rearrangements, through IHC and FISH, in patients recently diagnosed with DLBCL, for a more accurate assessment of disease progression, prognosis, and progression-free survival.

Keywords. Large B-Cell Non-Hodgkin Lymphoma, Immunohistochemistry, BCL-2, BCL-6, MYC