

CYTOMORPHOLOGICAL FEATURES OF CHRONIC LYMPHOCYTIC LEUKEMIA

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<https://doi.org/10.5281/zenodo.20697259>

Relevance of the problem. Chronic lymphocytic leukemia (CLL) is a common oncohematological disease in adults, characterized as a clonal malignant proliferative heterogeneous disorder of small lymphocytes. It is associated with the accumulation of clonal cells in the bone marrow and reticular system. In many cases, CLL follows an indolent course; however, in some instances, it progresses rapidly and may lead to fatal outcomes. Therefore, determining the prognosis of this disease requires an individualized approach.

In recent years, there has been a growing number of studies aimed at a deeper understanding of the biological characteristics of the disease. In particular, the systematic analysis of cytomorphological changes plays an important role in identifying the mechanisms of disease progression and in developing individualized treatment strategies.

Aim of the Study. To identify the specific features of cytomorphological changes in patients with chronic lymphocytic leukemia and to comprehensively assess their relationship with clinical course and laboratory parameters.

Materials and Methods. The study was conducted using retrospective and prospective methods based on data from 65 patients with chronic lymphocytic leukemia who were treated in the hematology and laboratory departments of the Khorezm Regional Multidisciplinary Medical Center between 2021 and 2025.

Among the patients, 42 (61.5%) were male and 23 (38.5%) were female (ratio 1.6:1). The examinations included cytomorphological analysis of peripheral blood smears, bone marrow punctate examination, and evaluation of hematological parameters.

Results. The study results showed pronounced lymphocytosis (80–90%) in the peripheral blood of patients. The lymphocytes were small in size, with dense chromatin in the nucleus, narrow cytoplasm, and in some cases showed vacuolization. In most cases, Gumprecht–Botkin shadow cells were identified. In patients with chronic lymphocytic leukemia, characteristic clinical symptoms such as weakness, sweating, headache, weight loss, lymphadenopathy, hepatomegaly, and splenomegaly were observed to decrease following treatment.

In Group I patients, lymphocyte levels decreased from $86.4 \pm 2.46\%$ before treatment to $40.9 \pm 1.03\%$ after treatment ($p < 0.001$), while bone marrow lymphocytes decreased from $81.1 \pm 4.06\%$ to $22.9 \pm 1.40\%$ ($p < 0.001$).

In Group II patients, lymphocyte levels decreased from $90.73 \pm 1.88\%$ before treatment to $34.9 \pm 1.35\%$ after treatment ($p < 0.001$), and bone marrow lymphocytes decreased from $86.4 \pm 2.35\%$ to $15.9 \pm 0.61\%$ ($p < 0.001$).

Conclusion. The obtained results indicate that cytomorphological changes in chronic lymphocytic leukemia represent one of the key diagnostic criteria. The degree of lymphocytosis, chromatin structure of the nucleus, and the presence of shadow cells are important for accurate diagnosis.

The predominance of lymphoid proliferation in the bone marrow serves as an additional criterion for determining prognosis. Cytomorphological changes observed in CLL are closely associated with clinical manifestations and prognostic indicators. Their comprehensive evaluation is essential for accurate diagnosis and for selecting individualized treatment strategies.

Adabiyotlar, References, Литературы:

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