COURSE OF CHRONIC LYMPHOCYTIC LEUKEMIA WITH COVID 19

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Abstract. Chronic lymphocytic leukemia (CLL) is a clonal malignant proliferative heterogeneous disease of small lymphocytes, characterized by accumulation of clonal cells in bone marrow, peripheral blood, lymph nodes, spleen, and liver. CLL incidence occurs in 2-6 patients per 100,000 population in 1 year, and after the age of 65, the incidence of the disease increases to 12.8 per 100,000 population. The article discusses the details of this issue.

Keywords: COVID-19, Chronic lymphocytic leukemia, lymphocyte, treatment, leukocytosis.

INTRODUCTION

In Western countries, the incidence of CLL during 1 year is up to 4.2 per 100,000 population. In patients over 65 years of age, the rate increases from 20 to 100 minutes, of which men (5.8 cases per year) and women (3.0 cases per year) are found. The incidence of CLL in patients 80 and older exceeds 30 cases per year. 10% occur in people younger than 55. The occurrence of CLL in 40-year-olds is 0.2 cases per year.

MATERIALS AND METHODS

The main symptom of CLL is lymphocytosis, the number of lymphocytes in the peripheral blood is 80-90% higher due to severe damage to the bone marrow. Even if there is a lot of leukocytosis, symptoms of anemia and thrombocytopenia are not observed in the blood. A characteristic sign of CLL is the Gumprecht-Botkin shade in the blood smear, which is due to the destruction of some lymphocyte nuclei during the preparation of the smear. During the course of the disease, a large number of prolymphocytes and lymphoblasts are found in the

blood and bone marrow, which is strongly manifested in the last stages. CLL is diagnosed when the absolute number of lymphocytes in the peripheral blood rises to 5x109/l for three months. Lymphocyte clonality can also be diagnosed by immunophenotyping [2].

RESULTS AND DISCUSSION

One of the most common complications of COVID-19 in chronic lymphocytic leukemia is hypercoagulability. A gradual increase in the level of D-dimer during the course of the disease is closely related to the worsening of the patient's condition and prognosis.

The tumor cells detected by microscopic examination of the blood smear resemble lymphocytes in their morphological appearance. The nucleus of the cell is covered with highly condensed chromatin, it does not have a nucleus, and it is covered with a short-framed cytoplasm. Sometimes there is an increase in the amount of young cells (prolymphocytes and paraimmunoblasts) (more than 10%). In such cases, differential diagnosis with prolymphocytic leukemia is indicated [1].

In the diagnosis of the disease, it is necessary to identify lymphocytes using cytometry, which is an immunophenotyping test. It can be detected in peripheral blood or bone marrow during examination. Immunophenotypic characteristic of CLL clone cells: SD5 marker in T-cell and SD19, SD23 marker in V-cell are characteristic. Also, detection of SD20, SD79b and IgM and IgD immunoglobulins was observed in normal V cells [1].

SD5, SD19, SD23 antigens are detected in the membrane of clone cells in CLL. Finding a smaller amount of IgM and antigens SD20 and SD22 in the cell membrane is also considered one of the diagnostic criteria for the disease [2]. The diagnosis of CLL is also made by immunophenotypic examination of lymph nodes and spleen biopsy.

The examined patients applied to the hospital at various stages of the disease. To define these stages, we used the classification of J. Binet (1981).

According to this classification, the clinical symptoms of chronic lymphocytic leukemia patients are as follows:

- Stage A - hemoglobin is higher than 100g/l, thrombocyte is higher than 100x109/l, enlarged lymph nodes are found in 1-2 places.

- Stage V - hemoglobin is higher than 100 g/l, thrombocyte is higher than 100 x109/l, but lymph nodes are enlarged in 3 or more places.

- Stage C - hemoglobin less than 100 g/l, platelet less than 100 x109/l.

It does not depend on the enlargement of lymph nodes and organs.

The diagnosis of CLL can be made based on the stages in the classification of J.L. Binet (1981).

Almost all of the C stage had clinical signs. We found that these patients come to the clinic at stages V and C. It was considered that patients in the C period are more likely to apply because their clinical symptoms are clearly known.

Also, one of the complications of CLL is the increase of the autoimmune process during covid-19. According to Vorobev A.I 2005, normal V-lymphocytes decrease, but T-cells increase in the spleen and blood. Overexpression of T-suppressors lowers hematopoietic precursors. Approximately 7-14 days after the initial symptoms, the clinical manifestations of the disease are determined by a clear systemic increase in pro-inflammatory cytokines. They can even be called a “cytokine storm”. CLL patients have an autoimmune nature of anemia, in which the indirect Coombs test is positive (+), the life span of erythrocytes is shortened, in which there is an increase in the laboratory criterion fraction and unbound bilirubin, reticulocytosis. During an immune crisis, lymphocyte activation and intensive production of cytokines are observed against the background of leukocytosis. Thrombocytopenia develops on the pathogenetic basis of cytokines (cell death) and led to the development of various hemorrhagic complications. Herpetic infections Herpes zoster and herpes zoster are common manifestations of infectious complications in patients. This required antiviral and symptomatic (analgesic) treatment for patients. Rituximab is slowly injected intravenously once

a week at a dose of 375mg/m once a day for 4 weeks (4 courses). This drug is very effective in all cells located in V-lymphocytes with SD20. Bendamustine was administered intravenously slowly at 90 mg/m for 1.2 days.

CONCLUSION

1. The results of the examination will help to identify patients with chronic lymphocytic leukemia early and to know the consequences during the period of covid-19. It helps patients to prevent infectious and immune deficiency complications.

2. In chronic lymphocytic leukemia patients, we observed a decrease in the clinical signs of the disease: weakness, sweating, headache, weight loss, enlarged lymph nodes, hepatomegaly, splenomegaly. it was found that the outcome of the disease was positive for the patients.

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