PB2055 A RARE CASE OF HIGH-RISK HEREDITARY THROMBOPHILIA COMBINED WITH PRIMARY MYELOFIBROSIS

Topic: 16. Myeloproliferative neoplasms - Clinical

Sviatlana Khoduleva¹, Dmitry Novik², Dmitry Blizin², Irina Malishevskaya⁴, Alla Demidenko², Irina Romashevskaya², Ekaterina Mitsura², Lyudmila Karataeva⁴

¹ Hematology department, Gomel State University, GOMEL, Belarus; ² Hematology department, Republican Research Center for Radiation Medicine and Human Ecology, GOMEL, Belarus; ³ Molecular Genetics Laboratory, Republican Research Center for Radiation Medicine and Human Ecology, GOMEL, Belarus; ⁴ Clinical Laboratory, Republican Research Center for Radiation Medicine and Human Ecology, GOMEL, Belarus

Background:

The risk of venous thrombosis in high-risk hereditary thrombophilia reaches 80%. Among the numerous acquired thrombogenic factors, Ph-negative myeloproliferative diseases (MPD) deserve special attention, which are manifested by thrombosis already at the initial diagnosis in 20% of cases. The risk of thrombosis in MPD is associated with thrombocytosis, plethoric syndrome, and the presence of the JAK2V617F mutation. There is no doubt that the combination of hereditary thrombophilia and MPD significantly increases the risk of thrombotic complications.

Aims:

to present a clinical case of high-risk thrombophilia combined with primary myelofibrosis.

Methods:

The analysis of the clinical course of primary myelofibrosis in a 28-year-old patient with high-risk thrombophilia was carried out: double heterozygous: Leiden mutation and mutation of the prothrombin G20210A gene. The diagnosis of primary myelofibrosis was verified in accordance with the WHO criteria, revised in 2016. The diagnosis of thrombophilia included an assessment of antithrombin III activity, proteins C and S, and homocysteine levels. Thrombogenic mutations were assessed by polymerase chain reaction (PCR).

Results:

The patient complained of spontaneous thrombosis of the portal and splenic veins, and two episodes of miscarriage at 6 and 10 weeks. Primary diagnosis: Portal vein thrombosis. Portal hypertension. Varicose veins of the esophagus of the 3rd degree complicated by bleeding. Condition after endoscopic ligation of varicose veins of the esophagus. Splenomegaly. Ascites. Examination revealed dilatation of the saphenous veins of the chest and abdomen, enlargement of the spleen up to 6 cm below the edge of the costal arch. During dynamic observation the general blood test revealed the following states: leukocytosis up to 17x10⁹/l; thrombocytosis (800-1100x10⁹/l); anemia of mild severity, normocytic, normochromic, normoregenerative (hemoglobin - 98g/l). The level of lactate dehydrogenase in the patient's blood serum was 400 U/l (reference values - 115-300 U/l). Molecular genetic studies using polymerase chain reaction for the presence of genes-potential markers of Ph-negative MPDs (JAK2V617F, CALR and MPL) revealed a mutation in the JAK2V617F gene. The image of the bone marrow according to trepanobiopsy: the bone marrow is sharply hypercellular. Adipose tissue less than 10%. Red lineage in the form of medium-sized focal clusters, without megaloblastoidity, without redistribution, not expanded. The granulocytic lineage with maturation is sharply hyperplastic. Megakaryocytes in the amount of more than 50 in the lacuna, polymorphic "ugly", with lobular nuclei, located diffusely (with a tendency to paratrabecular location), with the formation of "loose" and "dense clusters, with the phenomena of emperipolisis. Diffuse fibrosis. In the course of a diagnostic study under the thrombophilia program, mutations of the following genes were found: FII G20210A(G/A);
FV G1691A (G/A); PAI-I (5G/4G); MTHFR C677T (C/T). Based on the above clinical examination data and indicators of laboratory and instrumental studies, the main clinical diagnosis was determined: Peripheral myelophibrosis, prefibrotic stage Hereditary thrombophilia: double heterozygous: Leiden mutation and mutation of the prothrombin G20210A gene.

Summary/Conclusion:

The described case demonstrates the importance of screening patients with newly diagnosed PMD for high-risk hereditary thrombophilia. On the one hand, this will allow optimizing the antithrombotic prophylaxis regimen, on the other hand, it may be an additional indicator in determining the risk group.