

Hemostasis in patients with acute myeloblastic leukemia (AML) manifestation

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Abstract

Bleeding and infections in acute leukemia (AL) are the most frequent and dangerous complications. Autopsy results of 65 patients treated in our clinic from 1992 to 2000 testify the importance of studying blood coagulation disorders in AL: hemorrhages are cited as the cause of death in 28.6% of cases, thrombosis in 10.8% of cases. The aim was to estimate the hemostasis in patients with AML manifestation. A total of 74 patients with AML manifestation were observed (39 males and 35 females, aged 16–77 years, median age of 42). FAB classification variants of AML were as follows: M1 – 18, M2 – 39, M4 – 8, and M5 – 9. Of the 74 patients, 67 had complications, 27 of them infectious, and 46 hemorrhagic. Type I hemorrhagic syndrome was observed in 10%, II in 28%, III in 9% and IV in 20% (classification of Dabberha Nafa, 1992). A mild degree of thrombocytopenia was noticed in 25% of patients, moderate in 34% and deep in 11% (classification of Agranenko VA, 1998). The mean of APTT corresponded to the norm, but was prolonged in 17.6% of patients. Fibrinogen concentration was increased. Its decrease is revealed only in 13.5% of patients. Increase of intravascular coagulation markers was observed, such as soluble fibrin monomer by o-phenanthroline (25.7%), by ethanol tests (74.3%), and D-dimers (9.5%). There was plasminogen activation in all patients. Hageman-dependent euglobulin clot lysis on average was considerably prolonged, that in the case of hypofibrinogenemia did not exclude fibrinolysis activation. It is confirmed not only by literature data but also by our patients: in 7 patients its shortening was noted. Simultaneous antithrombin III activation and protein C consumption were established. Thus, in patients with AML manifestation high frequency of hemorrhagic complications was revealed. The complications are related not only to thrombocytopenia but also to changes in plasma coagulation.

Keywords: acute myeloblastic leukemia, AML, hemostasis, bleeding complications, hemorrhagic syndrome