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C-reactive protein (CRP) concentration in patients with acute myeloblastic leukemia (AML) manifestation

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Abstract

The aim of the study was to estimate the dependence of CRP concentration from the presence of an infection and the amount of leukocytes and blasts in patients with AML manifestation. We observed 24 patients with AML at the stage of diagnosis of the disease (12 male, 12 female; aged 20–76 years; median age, 49). FAB classification variants of AML were: M0–2, M1–2, M2–14, M4–5 and M5–1. CRP concentration was measured by immunoturbidimetric assay. The statistical difference between groups was assessed by Dann's test. Spearman's rank correlation coefficient was calculated to measure the degree of association between CRP concentration and the amount of leukocytes and blasts.

All patients were divided into 3 groups: 1 – patients without fever and infection (n=10); 2 – patients with fever and infection focal (n=7); 3 – patients with fever but without the visible focal of infection (n=7). CRP levels in group 1 ranged from 0 to 0.043g/l (median – 0.000g/l); in group 2, from 0.007 to 0.383g/l (median – 0.044g/l); and in group 3, from 0.015 to 0.260g/l (median – 0.160g/l). When comparing groups 1 vs. 2 and 1 vs. 3, differences were significant ($p<0.05$); between groups 2 and 3, difference was absent ($p>0.05$). The correlation between CRP concentration and the amount of leukocytes and blasts was observed in the patients in group 1 (rs 0.718 and 0.676 accordingly; $p<0.05$). These parameters did not correlate in the patients with infectious complications (groups 2 and 3).

Thus, in patients with AML manifestation the increase in the number of leukocytes and blasts in peripheral blood influences CRP production in patients with AML manifestation. Its concentration increases even more with the presence of an infection. The results enable us to consider this parameter as a marker of infection during AML manifestation.

Keywords: acute myeloblastic leukemia, AML, C-reactive protein, CRP, infection complications