Endotoxin in Serum of HIV Infected Patients

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Introduction. Novel data indicate that gut-derived endotoxin (lipopolysaccharide) may be responsible for systemic inflammation reactions in certain clinical cases and conditions. Besides, the gastrointestinal tract is a major site of HIV replication which results in massive depletion of CD4 T-cells, particularly, during acute infection.

The aim. Our study aimed to examine the presence and importance of serum endotoxin in HIV infected patients.

Materials and methods. Overall, 52 HIV infected patients were included in this study: 11 of them were ART (antiretroviral therapy) – naive, 13 – on ART; 9 – HIV + HCV coinfected, without ART, 15 – with HIV + HCV coinfection + ART and 4 patients with HIV + HCV infection + tuberculosis + ART. The Limulus Amebocyte lysate (LAL) chromogenic endpoint assay (Hycult Biotech, the Netherlands) was used to determine serum endotoxin levels. Statistical analysis was carried out; variables were expressed as mean ± standard error (SE). Probability values (two-sided) were considered significant at $p < 0.05$.

Results. Serum endotoxin level was significantly higher in all above mentioned HIV infected patient groups if compared with healthy controls, when this value was less than 3–4 EU/ml. No statistically significant endotoxin level difference among separate patient groups was found: in HIV infected, ART-naive patients endotoxin level was 9.87 ± 0.79 EU/ml; in HIV infected + ART – 10.83 ± 0.73 EU/ml, in HIV + HCV coinfection – 11.78 ± 1.35 EU/ml, in patients with HIV + HCV+ tuberculosis + ART serum endotoxin concentration was 10.99 ± 1.23 EU/ml. However, the high tendency to significant increase of serum endotoxin in case of HIV + HCV coinfection was observed.

Conclusion. The preliminary initial results of present study confirm the elevation of circulating endotoxin in all examined cases of HIV infection. The gut flora, microbial translocation and subsequent endotoxemia may be very important components of pathogenesis and progression of HIV infection.