SUMY STATE UNIVERSITY
MEDICAL INSTITUTE

«BIOMEDICAL PERSPECTIVES»

ABSTRACT BOOK

International Scientific and Practical Conference
of Students, Postgraduates and Young Scientists

(Sumy, October 16-18, 2019)

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Sumy State University
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MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
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INDICATORS OF ENDOGENOUS INTOXICATION AND IMMUNOREACTIVITY IN HIV-INFECTED PATIENTS

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Introduction. Ukraine is one of the first countries in the European region in terms of the number of HIV-positive people (an estimated 244,000 people). During 2018, 3,448 people died from AIDS-related illnesses, up 150 from 2017.

The aim of the study – to determine changes in endogenous intoxication and immunoreactivity indices in HIV-infected persons.

Materials and methods. 72 HIV-positive patients undergoing treatment at an infectious disease clinic, Sumy, Ukraine were surveyed. Clinical blood counts of patients with HIV infection and 44 clinically anamnestic healthy blood donors were calculated. Endogenous intoxication and immunoreactivity indicators were calculated: leucocyte intoxication index (LII), hematological index of intoxication (HII), index of leukocytes shift (ISL), Krebs index (KI), immunoreactivity index (IR), lymphocytic-granulocytic index (ILG), neutrophil-monocytes ratio (NMR), lymphocyte-monocyte ratio (LMR), neutrophil reactive response (NRR), index of leukocyte and ESR ratio (ILESR), lymphocyte index (Ilymph), eosinophils-lymphocytes ratio (ELR), index of allergization (IA), nuclear index (NI), index of intoxication severity (IIS).

Research results. It was found that a decrease in the lymphocyte formula and an increase in the number of band neutrophils in HIV patients led to an increase in integrative endogenous intoxication rates: LII by 3.4 times ($p < 0.001$), ISL - 1.8 times ($p < 0.01$), HII - 7.6 times ($p < 0.001$), IIS - 36.6 times ($p < 0.001$), NRR 4.2 times ($p < 0,001$). The indexes indicate endogenous intoxication and the presence of an inflammatory process due to opportunistic infections.

Nonspecific reactivity indices have increased NMR by 1.6 times ($p < 0.05$) and NI by 4.8 times ($p < 0.001$), due to the shift of the leukocyte formula toward neutrophils and the prevalence of non-segmented forms over the segmented ones, indicating an inflammatory response.

KI in patients with HIV infection was 2.1 times higher than in relatively healthy subjects ($p < 0.001$). The index reflects the percentage of neutrophils to the number of lymphocytes, the ratio of humoral to the cellular level of immunity, indicating greater activity of the humoral level in the examined. In particular, a 4.9 times increase of ILESR ($p < 0.001$) indicates the presence of endogenous intoxication due to an autoimmune process.

Conclusions. Integrative endogenous intoxication indices are increased in HIV-infected people: LII, ISL, HII, IIS, NRR and non-specific reactivity indices - NMR, NI, KI, ILESR. These changes indicate a greater activity of humoral immunity and the presence of endogenous intoxication due to the autoimmune process.

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