

**PREDICTING OF THE DEVELOPMENT OF AIDS-INDICATING
OPPORTUNISTIC INFECTIONS IN HIV-INFECTED PATIENTS ON
ANTIRETROVIRAL THERAPY (RETROSPECTIVE COHORT STUDY)**

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Introduction. HIV remains one of the actual problems of modern medicine. The search for predictors of the development of AIDS-associated opportunistic infections (OI) in patients on antiretroviral therapy (ART) is an urgent scientific and practical task.

Aim of the study is to investigate the predictors of progression and to create a prognostic model for the development of AIDS-related opportunistic infections in HIV-infected patients receiving ART based on the determination of clinical genetic markers.

Materials and methods. A retrospective cohort study of 181 HIV-infected patients was conducted. Logistic regression and ROC analysis were used for statistical data processing.

Results. As a result of the analysis of 27 potential predictors of the development of AIDS-associated OIs in patients on ART, 10 significant patients were identified in HIV-infected patients, on which the progression of HIV depends, namely: male sex (OR = 3.30 [95% CI 1.21–9.0], $p = 0.020$), injecting drugs (OR = 2.49 [95% SO 1.02–6.07], $p = 0.044$), incarceration experience (OR = 2.29 [95% CI 1.07–4.91], $p = 0.033$), smoking (OR = 2.46 [95% CI 1.14–5.27], $p = 0.021$), immunological failure of ART (OR = 4, 48 [95% CI 1.98–10.13], $p = 0.000$), low adherence to ART (OR = 3.03 [95% CI 1.13–8.09], $p = 0.027$), BMI less 18.5 (OR = 6.13 [95% CI 2.77–13.56], $p = 0.000$), hemoglobin level lower than 100 g/L (OR = 2.99 [95% CI 1.41–6.32], $p = 0.004$), the 299Gly allele of the TLR4 gene carrying (OR = 3.38 [95% CI 1.41–8, 12], $p = 0.006$) and the normal genotype (Gln11Gln, 11Gln/-) of the TLR7 gene (OR = 2.90 [95% CI 1.06–7.95], $p = 0.038$).

Conclusions. A prognostic model of 5 predictors (male sex, immunological failure of ART, hemoglobin level lower than 100 g/L, BMI below 18.5 kg/m² and carrier of the allele 299Gly of the TLR4 gene) was created (statistically significant ($\chi^2 = 59.88$, $g < 0.001$) with operational characteristics: sensitivity - 73.0%, specificity - 79.0% and had a high predictive efficiency (area under the ROC curve - 0.8580).

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