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The effect of antipsychotic drugs on nonspecific inflammation markers in the first episode of schizophrenia

Efekat antipsihotika na nespecifične markere inflamacije u prvoj epizodi shizofrenije

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Abstract

Background/Aim. Immune system disorder, including inflammation, takes a significant place when considering still unclear etiology of schizophrenia. The aim of this study was to determine the blood levels of nonspecific inflammation markers in the first episode of schizophrenia and their relation to the therapy response. **Methods.** In this study we determined the blood levels of nonspecific inflammation markers: white blood cells count (WBC), C-reactive protein (CRP), erythrocytes sedimentation rate (ESR) and the elements of differential white blood cell counts (or the leukocyte formula): granulocytes (Gra), lymphocytes (Lym) and monocytes (Mon), in the first episode of schizophrenia, in 78 patients hospitalized at the Clinic for Psychiatric Disorders “Dr Laza Lazarević” in Belgrade. The levels were measured at admission to the clinic, as well as after 4 weeks of antipsychotic treatment. The Positive and negative syndrome scale for schizophrenia (PANSS) was applied to measure the severity of psychopathology and response to the treatment. **Results.** During the first episode of schizophrenia, before

initiation of antipsychotic treatment, the frequency of abnormal values was high ($\geq 25\%$ of the patients) for the following non-specific inflammation markers: WBC, CRP, ESR and Gra, in the leukocyte formula, but dropped after 4 weeks of antipsychotic treatment at the level of high statistical significance for WBC and Gra ($p < 0.001$). The ESR remained unchanged in as many as 50% of the patients even after 4-week antipsychotic treatment, at the level of statistical significance in the non-responders compared to the responders ($p = 0.045$). **Conclusion.** The obtained results indicate that in the first episode of schizophrenia the blood levels of non-specific inflammation markers (WBC, CRP, ESR and Gra from the leukocyte formula) were high in the subpopulation of patients with the tendency towards normalization of inflammation parameters after a 4-week antipsychotic treatment.

Key words: schizophrenia; antipsychotic agents; inflammation mediators; sensitivity and specificity; predictive value of tests.

Apstrakt

Uvod/Cilj. U razmatranju još uvek nepoznate etiologije shizofrenije, disfunkcija imunskog sistema koja uključuje i inflamaciju zauzima značajno mesto. Cilj našeg rada bio je da se odrede koncentracije nespecifičnih markera zapaljenja u krvi, u prvoj epizodi shizofrenije i njihova povezanost sa terapijskim odgovorom na antipsihotike. **Metode.** U radu smo određivali koncentracije nespecifičnih markera zapaljenja u krvi: leukocita (WBC), C-reaktivnog proteina (CRP), sedimentacije eritrocita (SE) i elemenata leukocitarne formule: granulocita (Gra), limfocita (Lym) i monocita (Mon), i to u prvoj epizodi shizofrenije, kod 78 hospitalizovanih bolesnika u Klinici za psihijatrijske bolesti „Dr Laza Lazarević“ u Beogradu. Njihove koncentracije odre-

đivali smo pri prijemu i četiri sedmice nakon antipsihotičke terapije. Težinu psihopatologije i farmakoterapijski odgovor pratili smo primenom Skale pozitivnih i negativnih sindroma shizofrenije (Positive and negative syndrome scale for schizophrenia – PANSS). **Rezultati.** U prvoj epizodi shizofrenije, pre uvođenja antipsihotika, postojala je visoka učestalost abnormalnih laboratorijskih vrednosti ($\geq 25\%$ bolesnika) sledećih nespecifičnih markera inflamacije: WBC, CRP i SE, kao i Gra u leukocitarnoj formuli, ali i smanjenje svih njih nakon četiri sedmice antipsihotičke terapije, na nivou visoke statističke značajnosti za WBC i Gra ($p < 0.001$). Sedimentacija eritrocita ostala je povećana kod čak 50% bolesnika i nakon 4-sedmičnog antipsihotičkog lečenja, na nivou statističke značajnosti kod onih koji nisu reagovali na terapiju u odnosu na one koji jesu ($p =$

