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Analysis of immunity indicators in patients with acute uncomplicated pyelonephritis in combination with pelvic inflammatory diseases depending on the period of the menstrual cycle in women of reproductive age

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Introduction & Objectives: The objective of the study was to study immunity indicators in women of reproductive age with acute uncomplicated pyelonephritis in combination with pelvic inflammatory diseases, including the period and duration of the menstrual cycle.

Materials & Methods: In this work we present the results of the study of local and systemic immunity in 90 women of reproductive age with acute uncomplicated pyelonephritis (AUP) in combination with pelvic inflammatory diseases (PID), including the period and duration of the menstrual cycle (MC). Group I consisted of 30 patients with PID. Group II consisted of 30 patients with AUP combined with PID: in 14 patients the beginning of the disease occurred in the period from the 20th to the 5th day of MC (subgroup IIA), and in 16 patients (subgroup IIB) - the beginning of the disease occurred in the period from the 6th to the 19th day. For comparative analysis of the results, 30 clinically healthy women were examined in parallel, which we included in the control group.

Results: In $28,5 \pm 2,2\%$ of women with PID in accordance with $33,1 \pm 2,4\%$ of the control group there is a decrease in the content of T-helper cells. In women with AUP in combination with PID, the T-suppressors cells are significantly higher than in the comparison group ($23.0 \pm 1.54\%$ vs. $16.1 \pm 1.2\%$, $p<0,05$). Compared to the control group of women, a significant increase in IgM in patients with PID ($1.42 \pm 0.16\%$ vs. $0.97 \pm 0.22\%$ $p<0,05$) and IgM and IgA in patients with AUP in combination with PID ($1.68 \pm 0.27\%$ vs. $0.97 \pm 0.22\%$, $1.85 \pm 0.25\%$ vs. $1.35 \pm 0.22\%$, $p<0,001$). The increase of IgM and IgA levels was markedly more often in patients of group II IgM and IgA than in group I ($1,85 \pm 0,25\%$ vs. $1,52 \pm 0,15\%$, $1,68 \pm 0,27\%$ vs. $1,42 \pm 0,16\%$, $p <0.001$), which indicates a significant decreases in local immunity and a predictably more severe course of the disease.

Conclusions: The obtained results allow to say that changes in local immunity play a significant role in the occurrence of acute pyelonephritis, which forms against the background of pelvic inflammatory diseases in the period from the 20th to the 5th day of the menstrual cycle reliably predicting the adverse course of acute uncomplicated pyelonephritis. This provides an opportunity to re-evaluate the principles of prevention of this disease in women of reproductive age, and also timely and justified to prescribe antirecurrent courses of antibacterial and immunocorrective therapy. This approach will enhance the effect of antirecurrent therapy, and to reduce socio-economic losses associated with the treatment and rehabilitation of women of reproductive age.