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**LYSOSOMAL CATIONIC PROTEINS AS A DIAGNOSTIC BIOMARKER
OF THE RISK IN KIDNEY PATHOLOGY DEVELOPING IN OFFSPRING
UNDER PRENATAL INFLUENCE OF MATERNAL CHRONIC
BACTERIAL GENITOURINARY SYSTEM INFLAMMATORY DISEASE**

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Background: Identifying of diagnostic markers of risk for developing nephropathology in offspring under influence of maternal chronic genitourinary system inflammatory process (CGUTIP) during pregnancy is a pressing issue today. Lysosomal cationic proteins (LCPs) suppress bacterial proteases production found in neutrophil extracellular traps (NETs).

Keywords: lysosomal cationic proteins (LCPs), biomarkers for risk of developing nephropathology in offspring, experimental study.

The aim: to determine LCPs role as biomarkers of the risk in developing

nephropathology in offspring under prenatal influence of maternal CGUTIP at various times after birth.

Methods: Microbiological (MIKROLATEST[®], ERBA, Lachema), experimental (WAG rats), immunologic (ELISA), statistical (Statistica 7 program) methods were used.

Results: It was revealed that in 7-day-old rats exposed to maternal *Streptococcus pyogenes* CGUTIP during prenatal period LCPs level was increased ($1,45 \pm 0,6$ units), while in 1- and 2-month-old rats was decreased ($1,19 \pm 0,8$ and $1,02 \pm 0,2$ units) compared to control values. In rats exposed to maternal *Proteus mirabilis* CGUTIP during the prenatal period, a marked decrease in LCPs content was observed: in 7-day-old rats – $1,16 \pm 0,8$ units, in 1-month-old rats – $1,08 \pm 0,6$ units, in 2-month-old rats – $0,9 \pm 0,08$ units.

Correlation analysis revealed that in 7-day-old rats exposed to *Streptococcus pyogenes* there were strong direct correlations between LCPs and N-acetyl-b-D-glucosaminidase ($r=+0,85$) and antigens in NETs (Ag-NETs) ($r=+0,81$), and inverse between LCPs and IL-17 ($r=-0,8$); moderate correlation between LCPs and erythropoietin ($r=-0,63$).

In group of 1-month-old rats exposed to *Streptococcus pyogenes* a moderate direct correlation was found between LCPs and IL-10 ($r=+0,51$) and inverse correlation with IL-17 ($r=-0,54$). In group of 1-month-old rats exposed to *Proteus mirabilis* inverse correlation was found between LCPs and γ -glutamyltranspeptidase ($r=-0,53$).

In group of 2-month-old rats exposed to *Streptococcus pyogenes* moderate inverse correlation was found between LCPs and Ag-NETs ($r=-0,53$) and direct with CD4 ($r=+0,49$). In group of 2-month-old rats exposed to *Proteus mirabilis* inverse correlation between LCPs and circulating immune complexes level ($r=-0,91$) was found.

Conclusions: Increase of LCPs levels in phagocytes in 7-day-old rats exposed to *Streptococcus pyogenes* indicates a compensatory increase in phagocyte bactericidal activity, and a subsequent decrease in LCPs levels in 1- and 2-month-old

rats and a significant decrease of LCPs content in rats exposed to *Proteus mirabilis* leads to suppression of phagocytosis completion mechanisms and is a diagnostic marker for risk of developing nephropathology and further unfavorable course of inflammatory process.

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