ABSTRACT

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Evaluation of selected biomarkers for early detection of intraamnial inflammation in women with preterm premature rupture of fetal membranes (PPROM)

Diploma thesis

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Background: The aim of this work is to evaluate selected parameters of innate immunity and inflammation in connection with their clinical use in early prediction of premature labor complicated with premature rupture of fetal membranes (PPROM). Potential biomarkers include the following components of the complement system: C3 component, activated C3 component (C3a), C5 component and activated C5 component (C5a). The regulatory protein of the complement system, the protectin (CD59) was also added to the list.

Methods: The study was conducted with a group of 136 patients selected according to specific criteria such as a single pregnancy or PPROM. Using immunochemical methods, the concentration of interleukin 6 in amniotic fluid was determined and bacterial nucleic acid was detected by microbial colonization of the amniotic cavity by a polymerase chain reaction. Enzyme immunoassay (ELISA) was chosen for the analysis of selected components of the complement.

Results: There was a statistical difference in C3, C3a, and CD59 concentrations between patients with and without inflammation; insufficient difference at C5 and C5a levels are evident in patients with or without inflammation.

Conclusions: Complement components C3, C3a, and CD59 are identified as detecting the risk of intra-amniotic inflammation in pregnant patients with a potential risk of PPROM.

Key words: Intra-amniotic Inflammation, PPROM, Preterm Labor, Complement System