

## **Structured summary**

### **Aim of the study:**

To compare the diagnostic reliability, accuracy, and safety of amniocentesis and amniotic fluid Interleukin-6 testing in the diagnosis of intrauterine inflammation of patients with preterm premature rupture of membranes.

### **Type of study:**

Prospective cohort study

### **Name and location of study site:**

Department of Gynaecology and Obstetrics, Faculty of Medicine, Charles University in Pilsen

### **Set and methodology:**

We prospectively examined patients with pPROM between the 23rd and 34th week of gestation in 2014 - 2017. All of them underwent amniocentesis and determination of IL-6 levels in amniotic fluid, leukocytes and bacteria in amniotic fluid as well as maternal blood examination for inflammation parameters. The results were compared to histological examination of the placenta after delivery for the presence of chorioamnionitis. Based on the values mentioned above the sensitivity, specificity, negative and positive predictive value, false positive and negative predictive value and accuracy of the test were determined together with an assessment of statistical significance. Furthermore, the feasibility and incidence of perioperative complications as well as the risk of secondary infection when pregnancy continued were evaluated by serial amniocenteses at weekly intervals. The prolongation of gestation in days in case of a negative outcome was also evaluated.

### **Results:**

Sixty patients were examined, histological chorioamnionitis was determined in 23 cases and excluded in 37 cases. The best diagnostic prediction of chorioamnionitis was achieved by amniotic fluid IL-6 testing with a sensitivity of 84%, specificity of 83%, PPH of 70%, NPV 92%, FP of 17% and FN of 16%, with an accuracy of 83% and the p-value of 0.0001. The examination of CRP, leukocytes and rods in maternal serum did not reach any statistical significance. In case of non-proven inflammation, the pregnancy was prolonged by 10 days on average, the median of 5 days (min 0, max 44 days). Serial repeat amniocentesis at weekly intervals confirmed the persistent negativity of the amniotic fluid findings. There was a 95% success rate of amniocentesis and a 1% risk of complications of the procedure.

### **Conclusion:**

Amniocentesis and Interleukin-6 testing in amniotic fluid is a safe and reliable diagnostic method for predicting histological chorioamnionitis of patients with preterm amniotic fluid discharge. It achieves much better statistical results compared to conventional maternal blood testing for inflammatory parameters.