Subsequent follow-up (during the first year of life) showed that in children of the main group were less frequently detected functional disorders of the gastrointestinal tract (15.8% vs 36.5%, P=0.034) and allergic diseases (1.2% vs 5.8%, P=0.056).

In newborns whose mothers received a probiotic during the 6 weeks before delivery, after birth levels of both markers of intestinal inflammation (fecal eosinophil-derived protein and fecal calprotectin) were significantly lower than in comparison group (children whose mothers not used probiotics).

In addition, in children of the main group in the first year of life were less than half detected such conditions as functional disorders of the gastrointestinal tract and manifestations of food allergies.

**Introduction**

Maternal obesity is considered one of the several key factors that affect development of the immune system of newborns. Experimental and clinical data indicate an increased risk of developing autoimmune, allergic diseases and obesity in the offspring of obese mothers. The main mechanisms of the relationship between mother’s body weight and the immune system of a newborn person remain poorly understood.

**Objectives**

Aim of this study was to analyze the cytokine status of umbilical cord blood of children born to mothers with obesity.

**Methods**

Umbilical cord blood samples were taken from 65 children born to thin (n = 24), with overweight (n = 9) and obese mothers (n = 32). The levels of TNFα, TGFβ1, IL 18, IL 12, IL10 and IFNγ were quantified by IFA. Statistical processing of data was performed on a personal computer using licensed computer software ‘Microsoft Excel 2016’ and ‘STATISTICA 12’. The Student t-test was used while analyzing the distribution of quantitative data. The criterion of statistical significance level was p<0.05.

**Results**

Compared to children born to thin mothers, children born to obese mothers had higher levels of umbilical cord blood plasma TNFα (12.75±10.80 pg/ml and 4.94±3.55 pg/ml; P1,3=0.005408) and IFNγ (798.90±565.96 pg/ml and 311.05±249.08 pg/ml; P1,3=0.014947).

**Conclusion**

These results confirm the hypothesis that maternal obesity affects programming of the immune system of newborns providing a potential connection with an increase in the incidence of chronic inflammatory diseases and obesity in offspring.