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ASSESSMENT OF CYTOKINE STATUS IN PREMATURE NEWBORNS WITH PERINATAL PATHOLOGIES

Mukhamedova Sh. T
Bukhara State Medical Institute named after Abu Ali ibn Sina

Annotation: Cytokines play a leading role in the pathogenesis, clinical course and outcome of hypoxic and infectious diseases of newborns. They are an important informative indicator of the state of the child's immune system during the adaptation period and ensure the interconnection of various body systems [3].

Some cytokines are contained in the blood in extremely low concentrations, accumulating mainly in the focus of inflammation, in addition, the biological activity of cytokines can be masked by binding them to inhibitor molecules circulating in the blood[2].

Material and methods

Clinical and laboratory examination of 60 newborns was performed: 21 children with intrauterine infection (group 1), 18 newborns with perinatal central nervous system (CNS) lesion (2nd group) and 21 healthy newborn children.

The gestational age of the newborns was 28-32 weeks.The exclusion criteria were congenital malformations, traumatic lesions of the central nervous system. All newborns underwent conventional clinical and laboratory examination methods. Determination of the content of the main pro- and anti-inflammatory cytokines (INFu, IL-4, IL-6, TNFa) in urine and blood (INFu, IL-6, IL-8, TNFa) on the 8th and 22nd days of life was carried out by solid-phase enzyme immunoassay using sets of reagents from Vector companies-Best (Novosibirsk, Russia).

Results and discussion

As a result of the analysis of the cytokine content in the urine of newborns on the 8th and 22nd days of life, it was found that the concentrations of TNF-α, IL-4 in group 1 do not exceed the upper limit of the concentration range of these indicators in the group of healthy newborns.

The concentration of IL-6 in urine is characterized by an increase in dynamics starting from the 8th day of life from 7.2 times to 19.5 times on the 22nd day of life. Significant shifts in the ratio of interferon status in newborns with IUI are observed in the first 8 days of life in both blood and urine

Distinctive data were obtained in the study of these cytokines in the blood of newborns with VUI.

When assessing the condition of newborns with IUI, a significant decrease in the level of TNF-α in the blood was noted on the 8th day of life, followed by a significant increase by the 22nd day of life in newborns with a favorable clinical outcome. The confirmation is also based on the absence of changes in its concentration in urine in relation to the healthy group.

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