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MARKERS OF INFLAMMATORY RESPONSE AND METABOLIC ADAPTATION IN CHILDREN WITH RESPIRATORY PATHOLOGY

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Background: Acute inflammations of the mucous membrane and lymphoid structures of the oropharynx are usually self-limiting diseases in healthy children,. Due to an insufficiently developed immune system, children primarily suffer from acute respiratory disease (ARI) with the development of complications, including bronchitis, pneumonia, sinusitis, otitis.

Aims: To investigate and analyze the state of markers of metabolic adaptation in the children with respiratory pathology

Methods: The study group included school-age children (10-14 years old) with a diagnosis of ARI as a general group of inflammatory diseases of the respiratory tract with respiratory tract local inflammatory lesions and presented acute pharyngitis (60.0%), acute bronchitis (20.0%), acute tonsillitis (22.0%) and a control group (n=25), identical in age and sex.

Results: The indicators of inflammatory response of child's organism presented an valid increasing in levels of cytokines: IL-1 increased in 2 times, IL-4- in 10 times, IL-6- in 1.5 times, γ-IFN - in 3 times, TNF-α - in 25 times, Neopterin – in 9 times. An increasing in level of IgM (3.85±1.89 g/l, $p<0.01$) in 2 times, level of IgG increased in 10 times (147, 35 ± 56.12 g/l, $p < 0.01$) were revealed. There were significant differences in levels of Leptin ($p< 0.01$), C-Peptide ($p< 0.01$), TSH ($p< 0.01$), Free thyroxine ($p=0.002$). Predominance of reliable correlations of pro-inflammatory cytokines Il 1,4,6 in various degrees ($r=0.34$-0.45), IgG with Free Triiodothyronine ($r=0.45$, $p=0.004$), IgE with Thyroid Peroxidase Antibody are observed ($r=-0.45$, $p=0.004$).

Conclusions: The researched material indicates need to consider metabolic adaptation of children's organism systems during inflammatory process