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The role of tumor necrosis factor and cytokine in the clinical course of cardiomyopathy in children

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Introduction: At present, there is no doubt that the pathogenetic relationship between circulatory insufficiency (CI) and increased expression of cytokines is undoubted.

Purpose: To study the importance of tumor necrosis factor (TNF- α) cytokines in the clinical course of cardiomyopathies and arrhythmias in children.

Materials & Methods: 104 children with cardiomyopathies were examined. The average age of children was 8.9 ± 0.6 . All patients underwent immunogenetic methods for the study of cytokines: TNF- α , IL-1, IL-8, IL-6 using standard test systems for the ELISA LLO (Limited Liability Organization) "Cytokine" (Name of organization) (St. Petersburg).

Results & Conclusion: The results of the research indicate an ambiguous effect of circulatory insufficiency and hypoxia on the ability of children to produce cytokines and TNF- α . The severe circulatory failure in dilated cardiomyopathy (DCMP) and hypertrophic cardiomyopathy (HCMC) has observed, thereby the level of TNF- α has decreased. A more pronounced decrease in TNF- α was observed with DKM NK IIB-III st. (6.9 ± 0.2 pg/ml). In a comparative aspect with NF first degree and IIA st., the level of TNF- α is significantly higher in children with DCM (P<0.01) than in children with HCM. We have revealed pronounced changes in the production of IL-1, IL-6 and IL-8, depending on the stage of NC and insignificant hyperproduction of IL-1 in patients with NK IIB-III st. with DCM and with HF II st. with HCM. In children with DCM and HCMC, their maximum concentration of IL-6 and IL-8 at the stage of NC IIA st. and the expressed stage of NC IIB-III st. with DCMC. Thus, cytokines play an important role in the progression of heart failure, determining the intensity of myocardial remodeling processes by adjusting the level of apoptosis and subsequent replacement fibrosis in the heart, which is a cause of disruption of its structure and insufficiency of the contractile apparatus in the progression of chronic heart failure.

Biography

Akhmedova N R has graduated from Tashkent Pediatric Medical Institute in 1998 and continued her Residency at 1st Tashkent Medical Academy. Since 2012 she has been working in Hospital Pediatrics Department as an Assistant. She is a Member of the Academic and Practical Commission in TPMI.

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