

Comparative analysis of biochemical markers for rheumatic diseases of adults and children in normality and pathology

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Abstract

Collagen is an intercellular substance of connective tissue, it plays an important role in the physiological processes of the body. Collagen consists of three polypeptide chains twisted in a spiral and in order to stabilize this structure, hydroxyproline is needed, its hydroxyl groups are involved in the formation of hydrogen bonds between the chains of polypeptides. The peculiarity of collagen is that 14% of the amino acids it contains are hydroxyproline, an amino acid that is not contained in other proteins. In this regard, the content of hydroxyproline in blood serum was used to assess the metabolism of collagen in the body.

We determined the content of hydroxyproline fractions in blood serum. Calcium, fibrinogen, erythrocyte settling rate and alkaline phosphatase level in children and adults with joint disease were also determined. The control group included healthy children and adults. The total hydroxyproline content in children with the disease was 9-11% lower than in healthy children. In adults with joint diseases, the total hydroxyproline content was 11% higher than in healthy patients. In children and adults with rheumatic diseases, the peptide-bound hydroxyproline content increased, while the protein-bound hydroxyproline content decreased in comparison with the control group control parameters. No significant changes in the content of calcium and fibrinogen were noted, but the level of alkaline phosphatase and the rate of erythrocyte sedimentation was increased, which is typical for people with inflammatory diseases.

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