Changes of the connective tissue in case of pronounced functional disorders of the thyroid gland are described in endocrinology. For example, in case of hypothyroidism hydrophilic GAG and the products of their breaking down are accumulated causing mucous swelling of the interstitial tissues [4]. Meanwhile, scientific literature practically does not contain the information concerning disorders in GAG metabolism and the products of their breaking down in children suffering from chronic or acute periodontal pathologies. The results of the study showed that in children suffering from CCG a reliable difference between the indices was found as well: IA group – (0,22±0,02) g/L, IIА – (0,31±0,03) g/L (р<0,05). Attention is drawn to the fact that GAG content in oral fluid of children with healthy gums (n=30) is twice as much: IA group – (0,16±0,01) g/L, IIА – (0,31±0,03) g/L (р<0,05). In children with clinically intact periodontium the difference between the indices was not found to be approximately twice as much: IA group – (0,16±0,01) g/L, IIА – (0,31±0,03) g/L (р<0,05). In children suffering from CCG a reliable difference between the indices was found as well: IB group – (0,22±0,02) g/L, IIb – (0,38±0,01) g/L (р<0,05). Attention is drawn to the fact that GAG content in the oral fluid of children: crude protein level by O.H. Lowry’s method; glycoproteins level by E.G. Romanenko’s method [5]; GAG level and their fractions by E.V. Kariakina’s method [6]. The results obtained were statistically processed applying variation statistics methods.

Results. Changes of proteoglycans metabolism are reflected in changes of quantitative and qualitative GAG content in biological fluids of the human body. Due to this fact we consider it to be reasonable to determine general and fractional GAG content of the oral fluid in children under conditions of periodontal tissue pathology and comorbid pathology of the thyroid gland. The results of the study showed that in children under conditions of DNG general GAG level in the oral cavity is reliably higher than that of the somatically healthy children. Particularly, in case of clinically intact periodontium the difference between the indices was found to be approximately twice as much: IA group – (0,16±0,01) g/L, IIА – (0,31±0,03) g/L (р<0,05). In children suffering from CCG a reliable difference between the indices was found as well: IB group – (0,22±0,02) g/L, IIb – (0,38±0,01) g/L (р<0,05). Attention is drawn to the fact that GAG content in the oral fluid of children with underlying DNG without pathology of the periodontal tissue was (0,31±0,03) g/L, which is 42 % more than that of somatically healthy examined children with CCG – (0,22±0,02) g/L (р<0,05). An increased amount of free GAG is known to be in direct relation with the processes of the main substance degradation. Considering this nature of mucopolysaccharides origin it can be suggested that even when clinical signs of inflammatory processes are absent, certain metabolic disorders occur in the gums of children under conditions of DNG, which mostly promote development of periodontal tissue pathology. It is evidenced by the results of clinical examinations which determined reliably higher spread and intensity of periodontal tissue damage in children with the examined thyroid pathology. In GAG structure in children from all the groups of observation the fraction of sulfated GAG (SGAG) prevailed. The variants of it are the following compounds: chondroitin-4-...
sulfate, chondroitin-6-sulfate, dermatin-sulfate, and heparin-sulfate. Due to a high negative charge they bind water well and thus regulate water-salt metabolism in tissues. Increased amount of SGAG is a characteristic feature of such typical pathological process as inflammation, since they take part in the formation of tissue swelling. Therefore, increase of these metabolites in children suffering from CCG is quite obvious: in IB group – to (0,16±0,01) g/L and in IIB group – to (0,33±0,01) g/L. Although, in the examined children with DNG twice as much amount of SGAG is found than that of clinically intact periodontium, which is indicative of depolymerization processes in the periodontal tissues under conditions of thyroid gland hyperplasia. The content of non-sulfated GAG (NSGAG) with hyaluronic acid as the main representative did not change considerably in the oral fluid of children. Only in children from IIB group a reliable decrease of NSGAG concentration was registered compared with the examined children in IB group from (0,05±0,005) to (0,06±0,004) g/L (p<0,05). It can be an additional negative factor in the development of periodontal pathology, since a decreased content of hyaluronic acid promotes disorders of the barrier functions of the mucous membrane and skin. The correlation analysis determined availability of a moderate positive dependence between general GAG level and SGAG level in the oral fluid of children from IA group (r=0,59, р<0,05), IB group (r=0,68, р<0,05) and IIA group (r=0,54, р<0,05). Interrelations between changes of SGAG and NSGAG amount in the oral fluid of children considering somatic or dental pathology were not found.

Conclusions. The applied biochemical methods of investigation enable to assess the state of the connective tissue components of the dental-maxillary system under different conditions and determine a risk group of children who do not possess clinical changes in the periodontal tissues, but could reliably have them in future.

Prospects of further studies include experimental substantiation and clinical application of chondroprotectors with the purpose to normalize the state of the connective tissue components condition in the dental-maxillary system.

References:

Key word: children, gingivitis, diffuse nontoxic goiter, glycosaminoglycans, hyaluronic acid.

interrelation between level of interleukins and density of alveolar bone in postmenopausal women

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Recent studies have showed that interleukins may play significant role in bone metabolism. Meanwhile, little is known regarding correlation of serum concentration IL -1β, IL-6, TNF-α with density of alveolar bone in postmenopausal women after prosthodontics treatment [1,2,3]. The aim of our study was to assess the correlation of serum concentration interleukins and density of alveolar bone in postmenopausal women with fixed dental prosthesis.

Materials and Methods. We studied 35 women, aged 55-65, an average age 60,2 ± 1,4 years old. The study had got some groups. The first one consisted of 12 patients with normal density of alveolar bone (T-criteria >1,0 SD), without prosthetic treatment. The other one included 10 patients with fixed dental prostheses and normal density of alveolar bone (T-criteria >1,0 SD). The third one included 13 patients without prosthetic treatment, they had reduction of alveolar bone mineral density (T-criteria < - 1,0 – 2,5 SD). In the fourth group (12 patients) were produced fixed dental prothesis and they had reduction of alveolar bone mineral density.