**INFLUENCE OF MMP 20 GENE POLYMORPHISM IN THE DEVELOPMENT OF EROSION OF TEETH IN YOUNG PEOPLE.**

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**Introduction.** The peculiarity of dental status of youth is high prevalence of caries, erosion of teeth and diseases of periodontal tissues. According to the literature, the role of genetic factors in the formation of physicochemical and morphological properties of the enamel of the tooth is known, which makes it possible to consider that the role of heredity in the development of caries and erosion of teeth is essential (Gorbunova I.L. 2016). Among the informative genetic markers are number of polymorphisms of the gene MMP-20, which encodes the formation of an enzyme-calcium-dependent proteinase, which affects the formation of organic matrix enamel.

**Methods:** As a result of dental survey, 60 students aged 17-20 years are divided into groups: I (n=20) - caries on the background of periodontal tissues diseases; II (n=21) - erosion on the background of periodontal tissues diseases; III (n = 19) - erosion on the background of intact periodontium. To conduct a molecular genetic study for determining the presence of MMP-20 gene, epithelium from the inner surface of the cheeks was taken in all subjects.

Statistical analysis was conducted using Microsoft Office Excel applications.

**Results:** When conducting comparative analysis of the obtained material, significant differences (p <0.05) were observed for MMP20 gene. Comparison of the data of groups I and III revealed differences, especially for genotype TT (χ2 = 3,12, p = 0.077, OR = 0.25, 95CI%: 0.07-0.94). The presence of allele C in homozygous state leads to a 3-fold increase of risk of teeth erosion on the background of intact periodontium (χ2 = 4.55, p = 0.033, OR = 3.43, 95CI%: 1.21-9.69). In the comparative analysis of groups I and III, the protective effect of genotype AA (χ2 = 6,12, p = 0,013, OR = 0,07, 95CI%: 0,01-0,61) and the negative effect of allele C on the risk of erosion on the background of intact periodontium increased 3 times (χ2 = 5.16, p = 0.023, OR = 3.21 95CI%: 1.27-8.10). Statistical differences for polymorphism T/C of MMP20 gene (rs1784423) between groups II and III were not detected (p>0.05). The polymorphism A/C of MMP20 gene (rs2245803) revealed significant differences between groups I and II. The protective effect of AA genotype of MMP20 gene (rs2245803) to the development of erosion on the background of periodontal tissue diseases was established (χ2 = 4.88, p = 0.027, OR = 0.13, 95CI%: 0.02-0.71).

**Сonclusion:** The presence in the buccal epithelium of AA genotype of MMP20 gene prevents the development of teeth erosion, and the presence of TT genotype of MMP20 gene indicates the possibility of predicting the emergence of erosions in young people and the formation of a risk group on the development of this pathology of hard tissues of the tooth.