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БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

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з міжнародною участю
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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MOLECULAR GENETIC PREDICTORS OF DENTAL CARIES IN CHILDREN

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Introduction. Many factors lead to the caries development, one of which is a disorder of the hard tissue structure during its formation. Defects in the embryonic enamel development are almost irreparable. Among patients, there are people with genetically determined incomplete amelogenesis, which is associated with a defect in the AMELX gene in the chromosomes of enameloblasts. As a result, the amino acid composition of the synthesised amelogenins changes, and the growth of crystals on the organic matrix is impaired.

The aim of the study was to study the molecular genetic predictors of dental caries in children of Bukovyna region.

Material and methods. The dental examination was carried out in children aged 6 years. Children were divided into groups depending on the residence region and caries intensity level, namely 75 examined in Vyzhnytsia district, 89 examined in Dniester district and 51 examined in Chernivtsi district. During the dental examination, samples of buccal epithelium were taken. The real-time reverse transcription polymerase chain reaction method was used to analyze gene expression using the AMELX, Human amelogenin, Real Time PCR Primer Set and DSPP, Human dentin sialophosphoprotein, Real Time PCR Primer Set primer sets. The primer set ACTB, Human actin, beta, Real Time PCR Primer Set was used as a reference gene. The study was conducted on the BSMU educational and research laboratory basis.

Results. The buccal epithelium molecular genetic study revealed differences in the expression of AMELX gene mRNA in children from different regions of Bukovina. The highest level of gene mRNA expression was in children of Vyzhnytsia district (31.51±0.17). In the Dniester and Chernivtsi districts, the level of gene expression was lower by 1.74 and 5.36% compared to the data from the mountainous district. The gene expression level did not differ with an increase in the number of carious teeth. Our results indicate that the residents of Vyzhnytsia district have the strongest enamel genetically.

The results of the DSPP gene mRNA study indicate that the gene expression in children from Bukovyna is 16.43% higher compared to the normal gene. These results indicate that children have normal dentin development and no defects in its development.

The highest level of expression in children from Vyzhnytsia disrtict was (30.25±0.16) points, the lowest one was in children from Chernivtsi district (29.21±0.11). Depending on caries intensity level, we observed an increase in the number of genes from (28.38±0.14) in low to (30.69±0.14) in high caries intensity.

Conclusions. Thus, the results of the molecular genetic study indicate that children have no hereditary disorders of enamel and dentin. The highest level of mRNA expression of the AMELX gene was found in children from Vyzhnytsia district, indicating that this region has the strongest enamel genetically. The gene expression did not depend on the number of cariously affected teeth. With increasing caries intensity, the expression of DSPP gene mRNA increased.

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PREVENTION AND TREATMENT OF OCCLUSIVE DISTURBANCES OF THE JAWS AND PAIN DYSFUNCTION OF THE TEMPOROMANDIBULAR JOINTS

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Introduction. Every year the problem of dysfunctional conditions occurring in the temporomandibular joints (TMJ) increases against the ground of occlusive disturbances due to difficult eruption of third molars. A common approach to the treatment of difficult eruption of third molars and all the concomitant complications is to refer a patient to the Department of Maxillofacial Surgery with recommendation to remove third molars. In the process of observation, a conclusion