

SUMMARY IN ENGLISH

Cleft lip and / or palate are one of the most common congenital facial cranial anomalies. In most cases, it is a congenital malformation with a complicated etiology, showing a multifactorial inheritance model that includes both genetic and environmental risk factors. There are many environmental factors that cause changes in specific signal proteins and thus induce cleft lip and / or palate. One of them includes MMPs and TIMPs, which are responsible for the destruction of the extracellular matrix and can participate in the cleft process of the lip and / or palate.

The aim of this work was to measure the concentration of metalloprotease -3 and -9 and their TIMP-3 inhibitor in the saliva of children with craniofacial cleft compared to the concentration of these MMPs and the inhibitor in patients after surgery due to a innate cleft defect and children without a cleft defect. Additionally, the diagnostic usefulness of the tested parameters was assessed based on the calculation of diagnostic sensitivity and specificity, positive and negative predictive values (PPV, NPV) and diagnostic test power.

The study included two subgroups of patients, the first of which was 40 patients with diagnosed craniofacial cleft, while the second - patients after surgery due to cleft lip and / or palate or after surgery. The control group consisted of 40 patients without craniofacial cleft.

The tested parameters (MMP-3, MMP-9, TIMP-3) were determined in saliva using the enzyme-linked ELISA method, which is widely used and is characterized by high sensitivity and specificity.

Based on the analysis of test results, it was shown that patients with untreated cleft lip and / or palate had higher MMP-3 levels compared to the control group. In addition, it was found that MMP-9 and TIMP-3 values in patients not yet operated were lower than in the control groups. In addition, when assessing the concentrations of all the parameters examined, it was found that they were lower after the surgery. However this phenomenon was statistically significant only in the case of MMP-3 and TIMP-3. In addition, MMP-3 levels were found to be higher in patients after surgery compared to controls, while MMP-9 levels were lower. Assessing diagnostic sensitivity, it was shown that it was the highest for MMP-9 both in patients before and after surgery. High diagnostic specificity was also observed for all tested parameters. MMP-3 determinations had the highest diagnostic power in the case of patients with cleft lip and / or palate. However, in the group of people after surgery, these values were the highest for MMP-9.

The presented results indicate that MMP-3 is involved in etiology of congenital cleft lip and/or palate.