SUMMARY

In the oral cavity there are constant reactions between food, glandular secretions and bacteria. The most important fluid in this environment is saliva. The composition of saliva determines the health of the oral cavity. The aim of the study was to examine the level of leptin, fibronectin, MMP-1 and MMP-2 in saliva in the early phase of orthodontic treatment.

The study included 50 patients planned for orthodontic treatment and 50 people from the control group.

Results: The level of leptin in saliva was significantly elevated before orthodontic treatment compared to the control group, and its significant increase was also observed during orthodontic tooth movement. The concentration of fibronectin in saliva was significantly elevated before orthodontic treatment, and decreased during orthodontic tooth movement, without reaching normal values. MMP-1 concentration in saliva was significantly higher before orthodontic treatment compared to the control group. Its decrease was observed during orthodontic movement of the tooth without statistical significance. Also, the concentration of MMP-2 in saliva was significantly higher before orthodontic treatment, its level was even higher during orthodontic tooth movement, but this increase was not statistically significant.

Conclusion: There was an increase in salivary leptin levels during orthodontic treatment. Significantly higher concentrations of leptin, fibronectin, MMP-1 and MMP-2 were also found in saliva before orthodontic treatment, probably due to an additional intervention performed the day before the procedure and saliva sampling - scaling and sandblasting of teeth. Fibronectin and MMP-1 levels decreased during orthodontic tooth movement, 15 minutes and one month after braces insertion, in contrast to MMP-2 levels, which increased during orthodontic tooth movement, but these changes were not statistically significant.

The results of the study showed an increase in the level of leptin in saliva during orthodontic treatment. Leptin stimulates wound healing and angiogenesis in the oral cavity, and is also a mediator of orthodontic tooth movement. This may be related to the simultaneous reconstruction of bone tissue in the apposition area.

The level of fibronectin decreased with the progress of tooth movement. This may be related to the onset of early inflammatory processes in the bone tissue. Fibronectin is known to be present over time in oral health.

Levels of MMP-1 and MMP-2 known as mediators of the inflammatory process differed. MMP-1 decreased while MMP-2 increased during the early phase of orthodontic treatment.

At the moment, there are few publications describing the levels of mediators selected by me in the early phase of orthodontic treatment. It is worth expanding this topic in order to better understand and plan orthodontic movements.