

The role of calcium in saliva in the differential diagnosis of Dentinal hypersensitivity



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Purpose

To show a diagnostic and therapeutic approach to dentin hypersensitivity. Secondly we addressed whether calcium levels in the saliva can be used as a parameter of prognosis in this condition.

Methods/Materials:

Herein we report a case of a 48 year old female patient presenting intraoral traumatic injuries in the marginal gingiva, tooth wear and inactive caries. After eliminating potential bias (active caries, recurrent caries, dentin cracks, tooth fractures and lost fillings) we assessed dietary and hygiene habits (brushing method and type of toothpaste). Salivary flow rate was determined (stimulated and unstimulated), pH of saliva was measured (pH meter GLP 22-Crison); CRT buffer[®] and CRT[®] bacteria determined the buffer capacity of saliva and M. streptococci and Lactobacilli counts to assess the caries risk, respectively. Subsequently we addressed the calcium levels in the stimulated and unstimulated saliva using a 4 kW commercial WDXRF system (S4 Pioneer. Bruker AXS). Upon diagnosis it was prescribed: a new toothpaste - low abrasive gel (RDA=32), 5% potassium nitrate and 0.32% sodium fluoride (Desensin[®]Gel), a mouthwash-0.05% sodium fluoride and 1% potassium nitrate (Desensin[®]). On a follow up appointment (21 days after) the therapeutic resulted in slight decrease and we applied a fluoride varnish 0.1% (Fluor Protector[®]) resulting in immediate regression of osmotic and thermal pain. Maintenance therapy continued for 45 days, without symptoms.

Tooth wear lesions



Salivary pH=7.8



Buffer Capacity - High



1st appointment



21 days after



Results

Frequent consume on her daily routine: vinegar; red wine; tea; 3 coffees; 1.5 L of lemon juice with Keffir; lemon yogurt with Keffir. Traumatic brushing. Tooth wear lesions were observed and the application of fluoride varnish in an initial phase of the treatment was beneficial, it eliminated the symptoms right on the moment. The pH value was 7.48, buffer capacity and the caries risk of Lactobacilli was high, in stimulated saliva. Moreover we determined that the values of stimulated and unstimulated saliva were 1,8 ml/min and 0,8 ml/min respectively, and the calcium levels of stimulated and unstimulated saliva were 13.6 mg/ml and 1.95 mg/ml, respectively.

Conclusions

The results obtained suggest that the presence of calcium in the saliva can have a protective role in HAp and in hypersensitivity. Other than this we consider to be of great importance to educate the patients regarding the etiological factors of hypersensitivity and that the application of fluoride varnish on the initial phase of the treatment is beneficial to eliminate discomfort. Nonetheless we emphasize that maintenance therapy should be prescribed.