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Long term evaluation of re-mineralization of human enamel with bioactive glass and CPP-ACP using laser fluorescence and scanning electron microscope analysis for early caries defense

H T Ajay Rao

Yenepoya Dental College, India

This study evaluated the re-mineralization produced by Calcium Sodium Phospho-silicate (NOVAMIN) and CPP-ACP (GC TOOTH MOUSSE) on artificially produced de-mineralized lesions and also compared their re-mineralization efficacy. 120 caries free extracted premolars were included in the study. Teeth were divided into 3 groups of 40 teeth in each group. Teeth were painted with nail varnish exposing a window of 2x2 mm on buccal and lingual surfaces and assigned into experimental group I (Novamin), positive control group II (GC Tooth mousse) and negative control group III (Artificial saliva). The samples were subjected to a daily treatment regimen (pH cycling) alternating between demineralization and re-mineralization solution for a period 21 days. Samples were evaluated for the amount of re-mineralization by laser fluorescent device (DIAGNOdent) and by observing the surface topography of enamel surface under scanning electron microscope at 21 days. The laser fluorescent readings of the samples belonging to the experimental group, positive control group and negative control group from their baseline, demineralization and re-mineralization were analyzed using paired t-test. The comparative re-mineralization component seen in positive control II GC Tooth mousse was higher compared to that of experimental group I Novamin. Both laser fluorescence and the scanning electron microscope observations proved that application of Novamin and GC Tooth Mousse significantly re-mineralizes the de-mineralized enamel samples *in vitro*.

Biography

H T Ajay Rao has completed his Bachelors in Dental Surgery in 2000 and his Masters in Dental Surgery in Pediatric Dentistry in 2006. He is presently serving as a Professor and a Post Graduate guide in the Dept. of Pediatric & Preventive Dentistry in Yenepoya Dental College Mangalore. He has around six national and international publications and has attended various workshops and conferences. He has his own private practice in Mangalore city and is also a consultant for various clinics in and around Mangalore.

drajayrao@gmail.com

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