

Abstract

Introduction:

Dental caries remains one of the most common childhood diseases worldwide. Recently the strategy for prevention of initiation and interruption in progression of early lesions has been advocated. Casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) derived from milk protein casein has been reported to reduce demineralization of the tooth structure and enhance remineralization. The aim of this in vitro study was to find out the efficacy of two type of CPP-ACP paste in calcium uptake of enamel surface.

Materials and Methods:

A total of 40 selected premolars were longitudinally bisected into experimental and control halves then coated with nail varnish, leaving an enamel window of 4 mm × 4 mm. All the samples were subjected to cycling in a demineralizing solution and classified into two groups: I: Tooth Mousse CPP-ACP paste, II: Misswake CPP-ACP paste. Calcium contents of each half were evaluate using Acid Etch Enamel Biopsy technique then measured by Atomic absorption. The values were statistically evaluated using Kolmogorov–Smirnov and one – way ANOVA.

Results:

Enamel surfaces treated with the pastes exhibited the higher calcium contents than control group. Difference between the calcium uptakes from the two pastes were significant and Tooth Mousse CPP-ACP paste group showed higher calcium uptakes. (P-value<.05)

Conclusion:

Although the Tooth Mousse CPP-ACP paste offered some protective potential, samples treated with Misswake CPP-ACP paste were best able to calcium uptake. Theas pastes were effective means of practising caries prevention in susceptible patients to dental caries.

Keywords: casein phosphopeptide-amorphous calcium phosphate, demineralization, calcium, enamel