

Abstract

Introduction:

Dental caries is a multifactorial, transmissible, infectious oral disease caused primarily by the complex interaction of cariogenic oral flora (biofilm) with fermentable dietary carbohydrates on the tooth surface over time. Cariogenic bacterial in the biofilm metabolize refined carbohydrates for energy and produce organic acid by producte. These organic acid, if present in the biofilm ecosystem for extended periods, can lower the pH in the biofilm to below a critical level. The low pH drives calcium and phosphate from the tooth to the biofilm in an attempt to reach equilibrium, hence resulting in a net loss of minerals by the tooth, or demineralization. Different fluoride varnishes are used for the prevention of the carious processes. The aim of this study was to compare the antimicrobial effect of conventional and different fluoride varnish against *Streptococcus mutans*.

Material and Methods:

In this in vitro study, the antibacterial effect of four varnishes was evaluated against *Streptococcus mutans* include Polimo and V-varnish (fluoride varnish containing xylitol), MI varnish (fluoride varnish containing CPP-ACP) and Preventa. The disc diffusion and well diffusion method were used for testing bacterial sensitivity. The data were analyzed using two way ANOVA analysis.

Result:

In comparison of the disc diffusion and well diffusion for the four varnishes, Polimo showed higher statistically significant antibacterial effects ($P < 0/001$). Growth inhibition zone didn't observed in V varnish and Preventa. The mean diameter of inhibition zone around the MI varnish was statistically significant higher of V varnish and Preventa ($P < 0/001$).

Conclusion:

Fluoride varnish containing xylitol and CPP-ACP can be more effective in the prevention of caries.

Keywords: CPP-ACP, fluoride varnish, streptococcus mutans, xylitol