EFFECT OF FLUORIDE VARNISHES CONTAINING TRI-CALCIUM PHOSPHATE SOURCES ON REMINERALIZATION OF INITIAL PRIMARY ENAMEL LESIONS

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Abstract. The aim of this study was to evaluate the effect of fluoride varnishes containing tri-calcium phosphate on remineralization of primary enamel lesions. Forty-eight sound primary incisors were coated with nail varnish, leaving two 1x1 mm windows before being placed in a demineralizing solution for four days. After demineralization, all the specimens were coated with nail varnish over one of the windows and were randomly assigned to one of four groups: Group A: deionized water; Group B: Duraphat® Fluoride Varnish; Group C: Clinpro™White Varnish; Group D: TCP-fluoride varnish. Polarized light microscopy was used to evaluate initial lesion depth and after a 7-day pH cycle. Lesion depth was measured using a computerized method with the Image-Pro Plus Program. The differences in mean lesion depths were compared among the groups using the One-Way ANOVA and Tukey’s multiple comparison tests at a 95% confidence interval. Group A had a significant increase in lesion depth compared to the other groups. No significant differences were found among Groups B, C and D. We concluded fluoride varnishes containing tri-calcium phosphate inhibit progression of initial primary enamel lesions, and the brands tested were not significantly different from each other in efficacy.

Keywords: fluoride varnish, primary teeth, remineralization, tri-calcium phosphate