Effect of Rennou containing Varnish on Enamel Remineralization

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AIM

This study aimed to evaluate the remineralization potential of experimental varnish 3 % Rennou (theobromine, calcium and phosphate) under pH-cycling conditions.

MATERIAL & METHODS

Sample preperations: A total of 30 enamel blocks of were sectioned 5 x 5 mm from the buccal surfaces of extracted human third molars and were randomized into 3 groups:

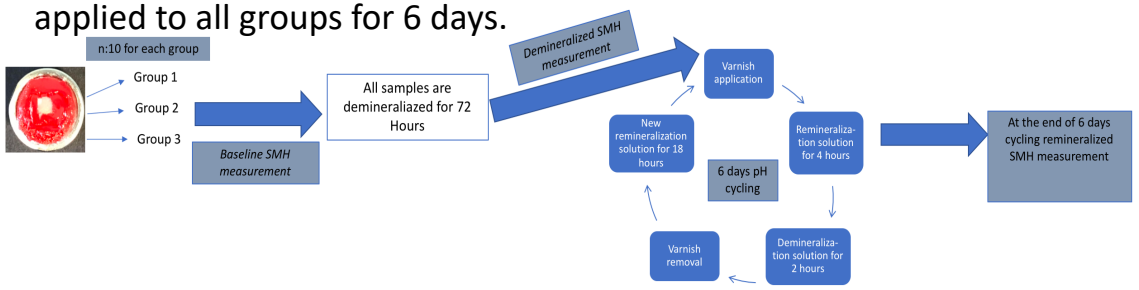
G1: 5 %Sodium Fluoride (NaF) + 3 %Rennou

G2: 3% Rennou (Theodent LLC, New Orleans, La., USA**)**

G3: 5 % NaF

The enamel blocks were ground at with a rotary electric polisher and aluminum oxide abrasive paper of four different granulations: 600, 800, 1000, 1200.

pH-cycling regime: Remineralization solution (1.5 mM CaCl, 0.9 mM NaH PO, and 0.15 mM KCl, which was at pH 7.0) and demineralization solution (2.2 mM CaCl, 2.2 mM NaH PO, and 0.05 mM acetic acid, with the pH adjusted with one mM KOH to be 4.4) were prepared. Demineralization and remineralization cycling were applied to all groups for 6 days.



Flow chart of the pH-cycling model

SMH analysis: The Vicker's hardness test determined surface microhardness under a load of 200 g for 15 seconds at the three separate times (before treatment, after demineralization, and after the corresponding treatments).

Surface microhardness recovery (SMHR %) is calculated based on these 3 measurements.

Statistical analysis Multiple comparisons between groups were performed using paired t-tests and post-hoc Tukey tests. P values <0.05 were considered statistically signifcant

RESULTS

SMHR% of the Varnishes

	SMHR% mean±SD	p
5 % NaF + 3%Rennou	94.62±60.21	0.142
3% Rennou	68.65±26.99	
5 % NaF	57.53±28.53	

Intergroup pairwise comparisons of SMHR%

p values	5% NaF + 3 %Rennou	3% Rennou	5% NaF
5 % NaF + 3 %Rennou		0.355	0.132
3% Rennou	0.355		0.822
% NaF	0.132	0.822	

CONCLUSION

All varnishes treated artificial enamel lesions at different degrees. Theobromine calcium and phosphate-based Rennou varnish was as effective as fluoride-varnish in remineralizing initial caries lesion.

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