

Poster Presentations

Thursday, June 29



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Plaque Efficacy of Essential Oil Mouthrinse Measured with Digital Imaging

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Digital imaging techniques provide a unique tool for assessing efficacy of hygiene and antiseptic technologies for the therapeutic control of dental plaque (Sagel et al., Monographs in Oral Science 17; 2000). DPIA protocols offer the potential for objective assessments of chemotherapeutic efficacy without variability associated with subjective indices and clinician applied categorical indices. This may provide advantages in quantitatively assessing treatment effectiveness in diverse populations.

Objectives: This study examined the chemotherapeutic antiplaque effectiveness of essential oil mouthrinse in a clinical population in Warsaw assessed with Digital Imaging Techniques. **Methods:** Subjects were pre-qualified as plaque formers in a series of advance plaque examinations. Qualifying subjects were acclimatized to usage of standard sodium fluoride dentifrice with a standard manual brush (Blend-a-Med Pro-Mineral Action dentifrice; Oral B P35 medium brush). The first treatment phase included the objective Digital Imaging of plaque levels in subjects continuing the advance acclimatization treatments for two weeks with 6 replicate assessments. The baseline treatment phase was followed by treatment intervention including the additional use of essential oil mouthrinse (Listerine Cool Mint) following label instructions (2x/day 30-second rinsing post brushing). The rinse treatment period was also 2 weeks with 6 replicate plaque assessments. Plaque assessments included objective evaluation of % tooth coverage with plaque evaluated in morning pre-brushing and post-brushing respectively. **Results:** During the baseline (pre-rinse) period, pre-brush a.m. plaque tooth coverage averaged 11.8%. Treatment intervention with essential oil mouthrinse reduced pre-brush a.m. plaque levels to 5.99% (significant $p < 0.05$): Toothbrushing produced reductions in plaque from 33-50%. **Conclusion:** **Objective plaque assessments with DPIA were successfully applied to a Polish clinical population. Essential oil mouthrinse provided significant reductions in plaque formation consistent with the literature effectiveness of this treatment. Toothbrushing effectiveness in plaque removal also matched historical norms.**

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Digital Plaque Imaging in a China Clinical Population

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Digital imaging techniques provide a unique tool for assessing efficacy of hygiene and antiseptic technologies for the therapeutic control of dental plaque (Sagel et al., Monographs in Oral Science 17; 2000). Digital plaque imaging applications require precise color response evaluations and decision rules accounting for population tooth color. **Objectives:** This study surveyed the average plaque coverage of a Chinese population as assessed by DPIA. **Methods:** 70 volunteers pre-screened for participation in plaque studies signed an informed consent and were provided with commercial tubes of Crest® Regular dentifrice for use over 2 weeks time including morning and evening brushing with a standard manual toothbrush (Oral B® Indicator® Soft Regular 40). On separate grading days subjects reported to the image clinic for fluorescein disclosure and UV imaging – at morning prior to hygiene (pre brush a.m. - A), post brushing with assigned dentifrice (a.m. post brush - B) and in mid afternoon (p.m. regrowth – C). Decision rules for determining the % plaque coverage on teeth were developed using CIELAB color space analysis of defined measures. Following this plaque coverage was assessed on the basis of % tooth coverage. **Results:** Tooth plaque coverage in Chinese population practicing regular hygiene averaged 16 %. Brushing removed approximately half of plaque on the teeth. Plaque regrew from morning brushing through afternoon. Tooth stain and calculus complicated color analysis in some subjects – thus a prophylaxis may assist in quantitative accuracy of DPIA in populations with limited access to typical professional care. **Conclusion:** **DPIA was successfully applied to screening in Chinese population – though prophylaxis of dental stain may be necessary under some circumstances to improve precision of plaque coverage estimates.**