P&G Oral Presentations

Wednesday, March 9

0102

Plaque Removal with a Battery Operated Power Toothbrush

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Background: The effectiveness of power toothbrushes is well established. **Objective:** This clinical study was conducted to evaluate the plaque removal efficacy of a novel battery-powered toothbrush with a translational head compared to a manual toothbrush **Methods:** This study was a randomized, examiner-blind, 6-period crossover design, which examined plaque removal with the two toothbrushes following three repeated single uses with each toothbrush in 86 completed subjects. Plaque was scored before and after brushing using the Turesky Modification of the Quigley-Hein Index. **Results:** Baseline plaque scores were 2.322 and 2.305 for the power toothbrush and manual toothbrush treatments, respectively. With respect to all surfaces examined, the power toothbrush delivered an adjusted (via analysis of covariance) mean difference between baseline and post-brushing plaque scores of 0.633 while the manual toothbrush delivered an adjusted mean difference of 0.576. The power toothbrush treatment, on average, had a 10% larger plaque removal score than the single motion toothbrush treatment. These results were statistically significant (p=0.01). With respect to buccal surfaces examined, the power toothbrush delivered an adjusted (via analysis of covariance) mean difference between baseline and post-brushing plaque scores of 0.885 while the manual toothbrush delivered an adjusted mean difference of 0.781. The power toothbrush treatment, on average, had a 13% larger plaque removal score than the single motion toothbrush treatment. These results were statistically significant (p=0.002). Plaque removal results on the lingual surfaces were not statistically significantly different. **Conclusion: The battery-powered toothbrush with a translating head was found to remove statistically significantly more plaque than the control manual toothbrush.**

Thursday, March 10

0284

Meta-Analysis of Direct-to-Consumer Whitening Products: Measurement Reversals

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Objective: This research was conducted to systematically evaluate the clinical effectiveness of the 4 most popular direct-to-consumer whitening "intensive" systems. **Methods:** A meta-analysis was conducted using an inclusive dataset from 10 randomized clinical trials having common entrance criteria and methods. Each study compared 2 or more of the most popular direct-to-consumer, peroxide-based tooth whitening system under labeled 2-week usage conditions. Treatments were Crest® Whitestrips® (WS), Crest® Night Effects™ (NE), Colgate® Simply White™ (SW), or Colgate® Simply White® Night (SWN). Effectiveness was measured objectively as L*a*b* color change using digital image analysis. Comparative efficacy was evaluated using a mixed model that adjusted for study, age and baseline color. **Results:** The pooled sample included 420 subjects (18-75 years of age) who used the strip or brush-applied products. After 14 days, adjusted mean (SE) Δb^* (yellowness) was –2.4 (0.08), –1.0 (0.08), –0.3 (0.07), and –0.3 (0.09) for WS, NE, SW and SWN, respectively. Results were similar for ΔL^* (lightness). Except for SW compared to SWN, groups differed significantly ($p < 0.0001$) in Δb^* and ΔL^*. Less effective treatments had significantly ($p < 0.0001$) fewer two-parameter color improvements ($-\Delta b^*$ and $+\Delta L^*$), with 100% of subjects in WS having two-parameter color improvements, compared to 81% in NE, 53% in SW, and 40% in SWN. For some subjects, use of peroxide for tooth whitening without a barrier resulted in color degradation. These outcomes were expected given the use of objective color measurement blinded as to treatment assignment and time. **Conclusion: This meta-analysis demonstrated that whitening strips and percarbonate film provided significant color improvement (yellowness and lightness) compared to two popular paint-on gels.**