A Randomized 12-Week Clinical Comparison of an Oscillating-Rotating Toothbrush to a New Sonic Brush in the Reduction of Gingivitis and Plaque

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Abstract

• **Objective:** To evaluate the efficacy of a marketed oscillating-rotating (O-R) power toothbrush (Oral-B® Triumph with SmartGuide and FlossAction brush head, D34/EB25) to a new sonic toothbrush (Sonicare FlexCare Platinum) in the reduction of gingivitis and plaque over a 12-week test period.

• **Methods:** This was a single center, randomized, open label, examiner-blind, two-treatment, parallel group study. Subjects who met the entrance criteria were enrolled in the study and randomly assigned to either the O-R or sonic treatment group. Subjects brushed with their assigned toothbrush and a marketed fluoride dentifrice for two minutes twice daily at home for 12 weeks. Gingivitis and plaque were evaluated at Baseline, Week 6, and Week 12. Gingivitis was assessed using the Modified Gingival Index (MGI) and Gingival Bleeding Index (GBI), and plaque was assessed using the Rustogi Modified Navy Plaque Index (RMNPI). Data were analyzed using an Analysis of Covariance (ANCOVA) with Baseline as the covariate.

• **Results:** In total, 130 subjects (65 per group) were randomized to treatment and 127 subjects completed the study. Both brushes produced statistically significant (p < 0.001) reductions in gingivitis and plaque measures relative to Baseline. At Week 12, the O-R brush demonstrated significantly greater reductions than the sonic brush in whole mouth gingivitis measures (p = 0.007). Additionally, the O-R brush presented significantly fewer bleeding sites (p < 0.007) and significantly greater reductions in whole mouth plaque measures (p ≤ 0.035) at Weeks 6 and 12 versus the sonic brush. The benefit for the O-R brush versus the sonic brush at Week 12 was 11.7% for gingivitis, 19.8% for number of bleeding sites, and 12.2% for whole mouth plaque. There were no adverse events reported or observed for either brush.

• **Conclusion:** The oscillating-rotating toothbrush demonstrated statistically significantly greater reductions in whole mouth plaque at Weeks 6 and 12, as well as significantly greater gingivitis reductions over the long term (12 weeks), compared to the new sonic toothbrush.

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