A 12-Week Clinical Comparison of an Oscillating-Rotating Power Brush Versus a Marketed Sonic Brush with Self-Adjusting Technology In Reducing Plaque and Gingivitis

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Abstract

• **Objective:** The aim of this investigation was to assess the comparative gingivitis and plaque reduction efficacy of a leading oscillating-rotating power toothbrush and a recently introduced sonic toothbrush in adults with gingivitis.

• **Methods:** This was a 12-week, randomized and controlled, parallel group, examiner-blind, single-center clinical study of 130 adults with pre-existing gingivitis and plaque. At baseline, the Modified Gingival Index (MGI), Gingival Bleeding Index (GBI), and total number of bleeding sites were assessed, along with plaque levels (whole mouth, gingival margin, and interproximal) via the Rustogi Modified Navy Plaque Index (RMNPI). Qualified subjects were randomly assigned to one of two power toothbrush test groups: the Oral-B® Triumph with SmartGuide™ (marketed in the United States as the Oral-B® Professional Care SmartSeries 5000 [D34]) oscillating-rotating brush, or the Colgate® ProClinical™ A1500 (also marketed as elmex® ProClinical®) sonic brush. Subjects brushed at home for two minutes twice daily with their assigned power toothbrush and a marketed sodium fluoride dentifrice, and were re-evaluated for gingivitis at Week 4 and Week 12 via the MGI, GBI, and total number of bleeding sites, and for plaque reduction via the RMNPI.

• **Results:** Ninety-seven percent (97%) of the 130 enrolled subjects completed the trial and 62 and 65 subjects in the oscillating-rotating and sonic brush groups, respectively, had evaluable data for analysis. Statistically significant mean reductions in all three gingivitis parameters and plaque relative to baseline were seen at both Weeks 4 and 12 with unsupervised use of both test toothbrushes (p < 0.001). The oscillating-rotating power brush provided statistically significantly superior reductions compared to the sonic brush in mean adjusted MGI (31% and 29% at Weeks 4 and 12, respectively; p < 0.001), GBI (17% at Week 12; p = 0.047), and total number of bleeding sites (48% and 30% at Weeks 4 and 12, respectively; p = 0.002), and produced statistically significantly greater relative mean adjusted plaque reductions for RMNPI whole mouth plaque (38% and 24% at Weeks 4 and 12, respectively; p < 0.001), gingival margin plaque (36% at Week 4; p = 0.004), and interproximal plaque (39% and 26% at Weeks 4 and 12, respectively; p < 0.001). Both power toothbrushes were well-tolerated.

• **Conclusion:** An advanced oscillating-rotating power toothbrush produced substantial, statistically superior reductions in plaque and gingivitis via multiple outcome measures compared to a new sonic toothbrush after both four weeks and 12 weeks of tooth brushing.

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