



Gingival Health

in vivo study

A randomized 4, 8 week study to compare manual and powered toothbrushes for efficacy in plaque removal and reduction of inflammation in peri-implant mucositis

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Objectives

Philips Sonicare DiamondClean powered toothbrush was compared with a manual toothbrush to evaluate efficacy in plaque removal and gingival inflammation in patients with peri-implant mucositis.

Methodology

This randomized, prospective, controlled, clinical parallel study compared the efficacy of plaque removal between a manual toothbrush and Philips Sonicare DiamondClean powered toothbrush for implant restorations. Forty patients with BOP(+), pocket depth ≥ 5 mm and no radiological peri-implant bone loss were considered eligible for this study. Patients completed a questionnaire to evaluate oral hygiene habits, patient compliance and efficacy of toothbrushing. Time and frequency of toothbrushing were recorded by subjects to assess compliance. Clinical parameters were recorded at baseline, 4 and 8 weeks and included modified plaque index (mPI) and modified sulcus bleeding index (mSBI) and a buccal and lingual intraoral photograph.

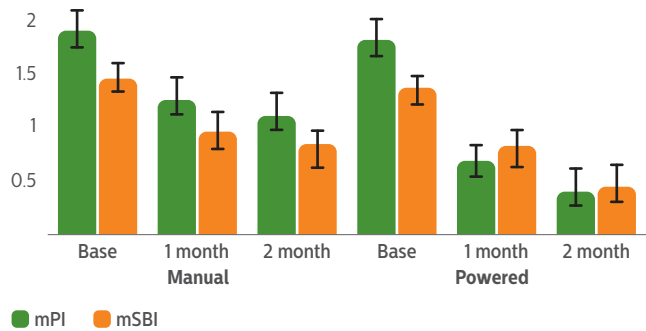
Results

There were statistically significant differences in the frequency of toothbrushing per day, time of brushing at 4 weeks and 8 weeks follow-up, while there were no statistically significant differences in other oral hygiene habits. There were statistically significant differences in patient compliance for toothbrushing at 4 weeks while no differences at 8 weeks. The mPI and mSBI score from baseline to 4 weeks, and 8 weeks follow-up were statistically significant in both toothbrushing groups.

Conclusions

Philips Sonicare DiamondClean toothbrush is beneficial to remove plaque and reduce bleeding in patients with one or more implant restorations.

Clinical assessments of mPI, mSBI by visit and group at the implant studies



Reduction in clinical parameters between baseline and post-baseline

Clinical Parameters	Base – 1 month		1 month – 2 months		Base – 2 months	
	Mean±SD	P-value ^{b)}	Mean±SD	P-value ^{b)}	Mean±SD	P-value ^{b)}
mPI						
manual	0.67±0.85	<0.001	0.09±0.68	0.439	0.76±0.90	<0.001
powered	1.07±0.91	0.001	0.20±0.71	0.134	1.27±0.87	<0.001
P-value^{a)}	0.104		0.499		0.043	
mSBI						
manual	0.48±0.91	0.006	0.09±0.77	0.491	0.58±0.79	0.001
powered	0.63±0.61	<0.001	0.30±0.60	0.013	0.93±0.87	<0.001
P-value^{a)}	0.300		0.242		0.100	

a) Mann-Whitney test, comparing between the groups

b) Wilcoxon signed rank test, comparing within the groups

