Determination of Plaque Viability Following a Single Brushing with Commercial Toothpastes

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Abstract

- **Objective:** The purpose of this study was to determine the viability of dental plaque at 12 hours following brushing with Colgate® Great Regular Flavor (0.83% MFP), Crest® Pro-Health (0.454% SnF), and Colgate® Total® Clean Mint Toothpaste (0.3% triclosan/copolymer/0.22% NaF).

- **Methods:** Thirty-two healthy volunteers from Bangkok, Thailand were chosen to participate in a double-blind clinical crossover study for three one-week treatment periods. They were randomly assigned to three groups using different sequences of test toothpastes. The plaque samples were collected at baseline (prior to brushing) and 12 hours after brushing with assigned toothpastes at the scheduled appointments. Scores and percentages of plaque viability were examined under a fluorescent microscope using a mixture of 40 µl of green and red fluorescent dyes, and were statistically analyzed using a two-way ANOVA.

- **Results:** Plaque viability scores and percent plaque viability at baseline with all test toothpastes showed no significant differences with a p-value > 0.05. The post-treatment mean values of plaque viability scores for Colgate Great Regular, Crest Pro-Health, and Colgate Total 12 hours after brushing were 1.39, 3.01, and 3.37, and represented 90.06, 49.80, and 40.77 percent viable plaque, respectively. The Analysis of Variance (ANOVA) showed statistically significant differences when comparing Colgate Great Regular and Crest Pro-Health, Colgate Great Regular and Colgate Total, and Crest Pro-Health and Colgate Total using Tukey’s test with a p-value < 0.001.

- **Conclusion:** Colgate Total, containing triclosan/copolymer/NaF as the active ingredients, is effective and superior to Crest Pro-Health and Colgate Regular in controlling the viability of oral bacteria in dental plaque.

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