A Clinical Study of the Efficacy of a New Chewing Gum Containing Calcium Hydroxyapatite in Reducing Dentin Hypersensitivity

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Abstract

• **Objective:** A controlled, clinical, double blind study was conducted to assess the efficacy of a sugar-free chewing gum containing calcium hydroxyapatite on dentin hypersensitivity, versus a placebo chewing gum with no active ingredients, after one and two weeks.

• **Methods:** One hundred and seven subjects joined the trial and were allocated into the test or the control (placebo) group by a random table. The test chewing gum contained calcium hydroxyapatite and dicalcium phosphate dihydrate; the control chewing gum was identical, but without those ingredients. Participants were required to chew two pieces of their assigned chewing gum three times a day. Dentin hypersensitivity was evaluated following three clinical test indexes (tactile, air blast, cold water) and one subjective index.

• **Results:** One hundred subjects completed the study with 50 allocated to each group. The clinical test index reductions after one and two weeks in the test group were, respectively, 36% and 54% for tactile, 35% and 66% for air blast, and 24% and 49% for cold water. The clinical test index reductions after one and two weeks in the control group were, respectively, 16% and 30% for tactile, 11% and 25% for air blast, and 14% and 31% for cold water. These reductions at one and two weeks were significant for the test group (p < 0.01). For the control group they were significant (p < 0.01) only at two weeks. The comparisons between the groups at two weeks showed a significant statistical difference between the test and the control gum for tactile (p < 0.01), for air blast (p < 0.001), for cold water (p < 0.05), and for the subjective index (p < 0.05).

• **Conclusion:** In this trial, the group using the chewing gum containing calcium hydroxyapatite had a statistically significant reduction in all clinical test indexes for dentin hypersensitivity after one and two weeks, and a statistically significant reduction compared to the control gum group.