A pilot study on antiplaque effects of mastic chewing gum in the oral cavity

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Abstract

Background: Chemical plaque control is a useful aid in mechanical oral hygiene, and various chemical agents have been evaluated as antiplaque agents. It has been shown that mastic chewing gum has antibacterial effects on Helicobacter pylori. In this study, the antiplaque effect of mastic chewing gum was investigated.

Methods: Twenty dental students who were both systemically and periodontally healthy participated in this study. The effects of mastic gum were assessed from 2 double-blinded, randomized studies. In the first trial, after mechanical toothbrushing, the inhibitory effect of mastic gum on bacteria in saliva following its use was compared to a placebo gum. Saliva samples were collected at the end of 1, 2, 3, and 4 hours; diluted; inoculated onto 10% horse blood chocolate agar plates; and cultured
anaerobically at 37 degrees C for 48 hours. The total number of bacterial colonies on each plate was calculated (n = 20). In the second trial, the effects of mastic gum on de novo plaque formation on tooth surfaces and gingival inflammation were evaluated over a 7-day period without mechanical oral hygiene following random use of either mastic or placebo chewing gum. The degree of plaque accumulation and gingival inflammation were compared between the 2 groups (n = 10).

Results: The total number of bacterial colonies was significantly reduced during the 4 hours of chewing mastic gum compared to the placebo gum (P < 0.05, Student t test). The mastic group showed a significantly reduced plaque index (2.69 +/- 0.29 versus 3.15 +/- 0.24; P = 0.001, Student t test) and gingival index (0.44 +/- 0.15 versus 0.66 +/- 0.23, P = 0.021, Student t test) compared to the placebo group.

Conclusion: These results suggest that mastic chewing gum is a useful antiplaque agent in reducing the bacterial growth in saliva and plaque formation on teeth.

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