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Sub-gingival simvastatin/chitosan gel in the treatment of chronic periodontitis in smokers

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Aim of the work: The present study was designed to evaluate clinically and radiographically the effect of sub-gingival delivered simvastatin with/without chitosan gel in the treatment of chronic periodontitis among smokers.

Methods: Twenty smoker patients with moderate to severe chronic periodontitis (40 sites) selected and divided into four treatment groups (split mouth study), 10 sites in each group as: group A, sites received scaling and root planning (SRP)+SMV gel. Group B, sites received SRP+chitosan gel, group C, 10 sites received SRP+(SMV+chitosan) gel and group D, sites received SRP alone and served as a control. The clinical parameters were recorded, at baseline (before SRP), after 1, 3 and 6 months they included: plaque index (PI), bleeding on probing (BOP), gingival Index (GI), probing pocket depth (PPD) and clinical attachment level (CAL). At baseline and after six months, radiologic assessment of intrabony defect (IBD) fill was done using computer-aided software.

Results: All subjects tolerated the drug, without any post application inflammation. All therapies resulted in significant improvements. Group C showed most significant improvement in all clinical parameters including: PI, GI, BOP, PD and CAL followed by group A and B, while group D showed the least improvement. In regards to radiologic assessment, group C also showed the most significant (IBD) fill followed by group B, A and D respectively.

Conclusions: The results showed that the use of SMV with Chitosan gel in addition to conventional periodontal therapy in treatment of chronic periodontitis in smokers reduced the GI and PI score more than SRP alone, as it produced more decrease in PPD, more gain in CAL, less BOP and increase IBD fill.