

**EVALUATION OF THE EFFECTS OF LOCAL DELIVERY OF
SIMVASTATIN AS AN ADJUNCT TO SCALING AND ROOT
PLANING**



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ABSTRACT

Background and Objectives: Periodontitis results in progressive destruction of the periodontal ligament and alveolar bone. The stimulation of local bone formation is an important factor in the repair of isolated bony defects found in periodontitis. 3-hydroxy-3-methyl-glutaryl-co-enzyme-A (HMG-CoA) reductase inhibitor, simvastatin, has been shown to stimulate bone growth over mouse calvaria *in vivo*. The purpose of this study was to evaluate the clinical and radiographic changes with local delivery of 1.2mg simvastatin as an adjunct to scaling and root planing.

Methods: A total of 60 sites in 27 patients were selected with at least one interproximal site having a vertical defect in each patient. The 60 sites were divided into 30 control and 30 test sites. Test group comprised of periodontal pockets treated with scaling and root planing (SRP) plus local application of 1.2mg simvastatin, whereas control group was treated with SRP alone. Clinical parameters such as modified sulcus bleeding index (mSBI), gingival index (GI), pocket depth (PD) and clinical attachment level (CAL) were recorded at baseline, 3 months and 6 months post-operatively. In both the groups radiographic assessment was done for each site before the therapy and at 6 months using IOPA paralleling technique.

Results: The change in the clinical parameters (mSBI, GI, PD and CAL) was statistically significant after 6 months in both the groups. But no significant difference was found when test and control group were compared. The amount of defect fill ($p=0.000$), percentage of defect fill (33.81%) and amount of defect resolved (25.33) were statistically significant in the test group.

Conclusion: Within the limits of this study, there was no difference in the reduction in mSBI, GI and PPD and RAL when test and control groups were compared. But significant intrabony defect fill was found at test sites in chronic periodontitis patients.

Keywords: Periodontitis, simvastatin, defect fill