EFFICACY OF SUBGINGIVALLY DELIVERED ATORVASTATIN AND SIMVASTATIN AS AN ADJUNCT TO SCALING AND ROOT PLANING IN THE TREATMENT OF CHRONIC PERIODONTITIS– A CONTROLLED CLINICAL TRIAL.

By

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ABSTRACT

Background and Objectives:

The role of statins (drugs used to lower cholesterol) is currently being investigated in the fields of orthopaedics and periodontics, owing to their bone stimulating and anti-inflammatory properties. The objective of this investigation was to assess the efficacy of locally delivered atorvastatin and simvastatin as an adjunct to scaling and root planing in treatment of chronic periodontitis.

Materials and Methods:

Local delivery systems for atorvastatin and simvastatin were prepared in sodium alginate suspension to be dispensed with calcium chloride solution and their physical properties were analysed in vitro. The clinical efficacy of their adjunctive use was evaluated in 42 sites in 23 subjects diagnosed with chronic periodontitis randomised into 3 groups: Group A (control, n= 13 sites) receiving scaling and root planing only; Group B (test, n= 15 sites) receiving scaling and root planing with subgingival delivery of 1.2% Simvastatin; Group C (test, n= 14 sites) scaling and root planing with subgingival delivery of 1.2% Atorvastatin.

Clinical assessment included evaluation of sulcus bleeding index, probing pocket depth, relative attachment levels at baseline and at 1 week, 1 month, 3 months and 6 months post-treatment. IL-1α levels in the GCF were assessed at baseline and 1 month after the treatment and alveolar defect depth at baseline and the end of 6 months.

Results:

Both atorvastatin and simvastatin in addition to scaling and root planing resulted in significant reductions in clinical parameters and the IL-1α levels in the GCF ($p < 0.05$). However, they failed to show any statistically significant reductions when compared to scaling and root planing alone.

Interpretation and Conclusion:

Subgingivally delivered atorvastatin and simvastatin in adjunct to scaling and root planing though efficacious, failed to demonstrate any added benefit as compared to scaling and root planing alone.

Keywords:

Atorvastatin calcium; alginic acid (sodium salt); human interleukin-1alpha; simvastatin.