

ABSTRACT

Background:

Attaining periodontal regeneration is the ultimate aim of any sort of periodontal therapy. Bone regeneration is based on fundamental principles of bone biology and physiology. Metformin, a widely used antidiabetic drug has shown to have osteogenic potential. Hence in the present study, we explored the efficacy of locally delivered 1% Metformin gel in regeneration of bone in grade II furcation defect.

Aim: To evaluate the efficacy of locally delivered 1% Metformin gel in the management of grade II furcation in chronic periodontitis

Methods: A total of 20 patients with grade II furcation defect in chronic periodontitis were selected and divided into two groups of 10 each. The first group (study group) was treated with 1 % metformin gel and collagen membrane while the second group (control group) was treated by collagen membrane alone. Clinical parameters like gingival bleeding index(GBI), plaque index(PI), clinical attachment level (CAL), vertical probing depth, horizontal probing depth, were recorded at baseline ,3 ,6 and 9 months post operatively in both study and control group. Radiographically defect depth and defect fill was evaluated both in study and control group at an interval of 3, 6, 9 months. The radiographs were digitized using digital camera and images were analysed by Image J software.

Results: Significant reduction in postoperative mean vertical probing depth and horizontal probing depth was noticed in both the groups compared to baseline. Radiographically at the end of 9 months a significant defect fill was evident in study group than control group ($p=0.006$). Percentage of bone fill was greater in study group (73.70 ± 16.86) as compared to control group (56.10 ± 14.30) at 9 months.

Conclusion: A significant bone fill was noticed in furcation defects treated with 1% metformin and absorbable guided tissue regeneration membrane versus open flap debridement and absorbable guided tissue regeneration membrane without 1% metformin in chronic periodontitis.

Key words: Chronic periodontitis, metformin, guided tissue regeneration.