ABSTRACT

BACKGROUND: Modern day periodontics aims at maintaining the health of teeth and their supporting structures with the main goal of controlling the infection and regenerating the lost supporting structures. Bovine porous bone mineral is a Xenograft and they induce bone formation through osteoinductive property. One of the recent approaches is to enhance the bone graft healing by growth factors. Concentrated growth factor (CGF), an advanced second generation platelet concentrate is a rich autologous source of various growth factors and leukocytes and has a strong potential to influence the cellular mechanisms responsible for periodontal regeneration.

AIM: Aim of the present study is to evaluate, the effectiveness of Concentrated growth factor in combination with Bovine porous bone mineral as compared to Bovine porous bone mineral alone in the treatment of periodontal intrabony defects.

MATERIALS AND METHODS: A total number of 20 intrabony defects in 10 systemically healthy patients were selected randomly for the purpose of the study. After the Phase-I therapy, the defects were equally divided into two groups and treated with concentrated growth factor and bovine porous bone mineral and bovine porous bone mineral alone. Clinical parameters such as plaque index (PI), gingival bleeding index (GBI), probing pocket depth (PPD), and clinical attachment level (CAL) were recorded at baseline, 6 months and 1 year post-operatively. In both the groups, radiographic analysis was performed at baseline, 6 months and 1 year post operatively.

RESULTS: Significant reduction in the mean probing depth and gain in clinical attachment level was observed in CGF=BPBM and BPBM groups as compared to baseline but there was no significant difference between the two groups at 6 months ($p=0.655$ and $p=0.250$ respectively) and 1 year ($p=0.247$ and $p=0.70$ respectively). Radiographically, bone fill%, bone crest change% and defect resolution% was significantly higher in CGF=BPBM group than BPBM group at the end of 6 months ($p=0.005$, $p=0.02$, $p=0.019$ respectively) and at 1 year ($p=0.000$, $p=0.007$, $p=0.001$ respectively).

CONCLUSION: Within the limits of the present study, it can be concluded that both the modalities of treatment were efficient in improving the clinical as well as radiographic parameters. The addition of concentrated growth factor to bovine porous bone mineral has demonstrated significantly successful and promising results. Thus in future, clinical trials with larger sample size may be employed to further explore the potential benefits of CGF as a grafting material.

KEY WORDS: Concentrated growth factor, Bovine porous bone mineral, Intra bony defect, Periodontal Regeneration.