

PR-II-10. The Effects of Hydroxyapatite/Calcium phosphate glass scaffold and surface modification with Bovine Serum Albumin in 1 wall intrabony defect of beagle dogs

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Background

The use of biphasic calcium phosphate ceramics as bone graft material has many advantages to other alloplastic materials. The purpose of this study was to evaluate the effects of biphasic hydroxyapatite/calcium phosphate glass(HA/CPG) scaffold and surface modification with bovine serum albumin(BSA) on periodontal regeneration.

Materials and methods

Mandibular first and second premolars were extracted and 1 wall intrabony defects were surgically created in 5 beagle dogs. HA/CPG scaffolds, fabricated by mixing Hydroxyapatite(HA) powder and Calcium phosphate glass(CPG) powder by a ratio of 95:5 by weight(%) and surface modification done by 2% bovine serum albumin were used. The control group received surgical flap operation and the experimental groups were filled with HA/CPG scaffolds and HA/CPG(BSA)scaffolds. The animals were sacrificed 8 weeks after surgery and block sections were obtained.

Results

Histological findings revealed limited amount of inflammatory cell infiltration in all groups. The newly formed bone was surrounded by a layer of osteoid with many osteocytes. Well developed blood vessels and undifferentiated cells were observed in the connective tissue matrix of both HA/CPG and HA/CPG(BSA) scaffolds. The histometric findings of both experimental groups revealed higher values in cementum regeneration and bone formation than the controls. However, there was no sig-

nificantly superior effect of HA/CPG(BSA) scaffolds to HA/CPG scaffolds.

Conclusion

The results of the present study revealed that HA/CPG scaffolds could be an effective bone graft material for periodontal regeneration.