PC-II-14. The Clinical Effects of Calcium Sulfate combined with Calcium Carbonate in Intrabony Defects

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Background
Osseous grafting and guided tissue regeneration (GTR) are the two techniques with the most histologic documentation of periodontal regeneration. If bone grafts and GTR are effective individually in treating osseous defects, then the question is, what would happen when they are combined. Bone grafts using Calcium Carbonate (Biocoral®–450, Inotec, Saint Gonnery, France) and GTR using Calcium Sulfate (CALMATRIX®, Lifecore Biomedical, Minesota, USA) will maximize their advantages and show the best clinical results in intrabony defects. The purpose of this study was to compare the effects of a combination of CS and CC with control treated only with modified widman flap in a periodontal repair of intrabony defects.

Material and Methods
30 patients (21 males and 9 females) at Yonsei University Hospital were enrolled in this study. Thirty intrabony periodontal defects, 1-wall, 2-wall or circumferential, in 30 patients with chronic moderate periodontitis were included in the study. The selected defects had a probing depth >6mm after scaling and intrabony depth of >3mm (mean: 6.5±2.0mm) and width of >2mm (mean: 4.6±1.9mm) at the time of surgery. The patients were randomly distributed into 3 treatment groups. 10 patients were treated with a combination of CS and CC as the experimental group II and another 10 patients were treated with CC as the experimental group I, and the remaining 10 patients, the control group were treated only with modified widman flap. Clinical parameters including probing depth, gingival recession, bone probing depth and loss of attachment were recorded 6 months later.
Results
The probing depth changes were 3.30±1.34mm in the control group, 4.2±1.55mm in the experimental group I and 5.00±1.33mm in the experimental group II. They all showed a significant decrease 6 months after surgery (P<0.01). There was a significant difference (P<0.05) between the control and experimental group. However there were no significant difference (P<0.05) between the experimental group I and II.

The gingival recession changes were 1.30±1.25mm in the control group, This is a significant difference (P<0.01). However, there was a 0.50±0.53mm reduction in the experimental group I and 0.60±0.97mm in the experimental group II. In addition, in terms of gingival recession, there were no significance difference (P<0.05) among the groups.

The clinical attachment level changes were 2.00±1.33mm in the control group, 3.60±1.58mm in the experimental group I and 4.40±1.17mm in the experimental group II. They all showed a significant decrease 6 months after surgery (P<0.01). There was a significant difference (P<0.05) between the control and experimental group. However there were no significance difference (P<0.05) between the experimental group I and II.

The bone probing depth changes were 0.60±0.52mm in the control group, 3.20±1.48mm in the experimental group I and 4.60±1.43mm in the experimental group II. All of them showed a significant decrease 6 months after surgery (P<0.01). there were significance difference (P<0.05) among the groups.

Conclusion
On the basis of these results, It can be concluded that treatment using a combination of CS and CC have a potential to improve periodontal parameters in human intrabony defects.