

ABSTRACT

Background Alloplastic bone graft materials are widely been used these days in combination with barrier membranes to achieve guided tissue regeneration in the treatment of periodontal intrabony defects. This study was designed evaluate the clinical outcome of a composite material, beta tricalcium phosphate in combination with calcium sulphate, in the treatment of periodontal intra-bony defects. The combination of these materials is believed to aid in guided tissue regeneration owing to their properties.

Methods Forty seven intrabony defects in 26 periodontitis patients were treated with Fortoss[®] Vital (Biocomposites, Staffordshire, UK). The patients were followed-up for 2 years. Clinical parameters were evaluated which included changes in probing depth (PD), clinical attachment level/loss (CAL) and gingival recession (GR), presence/absence of plaque and bleeding on probing (BOP) at baseline and at one and two years postoperatively.

Results A decrease in probing depths (PD) and a gain in clinical attachment level (CAL) were noticed in at one and two years postoperatively. The mean differences in measurements between the baseline and one year postoperatively are a reduction of 1.97 ± 1.15 mm ($p < 0.0001$) in case of PD, a gain of 1.68 ± 1.12 mm ($p < 0.0001$) in CAL and an increase of 0.30 ± 0.71 mm ($p = 0.009$) in GR. The mean differences in measurements between the baseline and two years postoperatively are a reduction of 2.07 ± 1.14 mm ($p < 0.0001$) in case of PD, a gain of 1.93 ± 1.36 mm ($p < 0.0001$) in CAL and an increase of 0.14 ± 0.73 mm ($p = 0.571$) in GR. The percentages of sites with presence of plaque and with BOP were reduced considerably at 2 years postoperatively compared to preoperative findings.

Conclusions The treatment with a combination of beta tricalcium phosphate and calcium sulphate led to a significantly favourable clinical improvement in periodontal intrabony defects two years after the surgery. A longer-term evaluation and further studies are necessary to completely ascertain the effectiveness of this material, and a larger sample size is needed.