COMPARATIVE EVALUATION OF PLATELET RICH PLASMA WITH AND WITHOUT BONE GRAFT MATERIAL CONTAINING CALCIUM SULPHATE + TYPE I COLLAGEN IN THE TREATMENT OF HUMAN PERIODONTAL INTRAOSSEOUS DEFECTS. A CLINICO RADIOGRAPHIC STUDY

by

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ABSTRACT

Background and objectives: Periodontal osseous defects are frequent sequelae of periodontitis. Sites with infrabony defects have been shown to be at higher risk of disease progression in subjects who did not receive systematic periodontal therapy. Scientific data exists therefore, to justify the efforts made to eliminate infrabony defects. Though resective osseous surgery is the most predictable way of doing so, the loss of supporting periodontal tissues it entails, makes it unviable in many cases. The highest goal of periodontal therapy, therefore, is to 'Regenerate' a new functional periodontal ligament attached to regenerated bone and new cementum, in addition to eliminating disease.

This tissue regeneration requires orchestration of several cell types. Platelet rich plasma with bone grafts ushers in a new era of the principles of tissue engineering. Dentists today are faced with many materials marketed for the purpose of repairing osseous defects, many of them claiming to be the *"ideal" material.*

The purpose of this study was to evaluate the efficacy of novel synthetic bone graft material "Osseomold " alone and in combination with Platelet Rich Plasma (PRP).

Method: The study sample included 30 defects present in 18 patients, 10 female and 8 males, with a minimum of one angular bone defect. The patients were aged between 25 and 55 years. The defects were randomly divided into three groups to receive any of the three materials and followed up for a period of 9 months. The probing pocket depth, relative attachment level and depth of the defect were recorded

for each surgical site before surgery (baseline) and after 9 months at the time of surgical re-entry. Radiographic defect fill was also measured at the end of 9 months.

Results: There was gain related to probing pocket depth, relative attachment level and depth of the defect was found to be statistically significant for all the three groups. When probing pocket depth was compared with three groups, no statistically significant difference was found. However, the combination therapy (Osseomold + PRP) showed better results as compared to other groups with respect to relative attachment level and defect fill.

Interpretation and conclusion: The combination therapy revealed a statistically significant improvement clinically. However long term studies are needed for clinical evidence that combining bone graft with PRP is more beneficial compared to when they are used alone.

Keywords: Calcium Sulphate (CA); Type I Collagen; Platelet Rich Plasma (PRP); Angular bone defects.