Effect on interleukin-1beta and interleukin-8 levels following use of fibrin sealant for periodontal surgery.

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Abstract:

Background: Fibrin sealant (FS) is a biologically derived tissue adhesive for securing flaps. The aim of the present randomized controlled clinical trial was to compare early wound healing by assessing interleukin-1beta (IL-1beta) and interleukin-8 (IL-8) levels from gingival crevicular fluid (GCF) after using FS and suture for periodontal flap closure. Methods: Thirty selected quadrants in 15 periodontitis patients were randomly assigned to either a test (fibrining) or control group (suturing) for flap closure. IL-1beta and IL-8 were assessed in GCF using enzyme-linked immunosorbent assay (ELISA) before and eight days after surgery. Patients were recalled at 7, 14, 21 days and 3 months after surgery for clinical assessment. Results: There was a statistically significant decrease in IL-1beta (84.82 +/- 77.18, 29.2 +/- 21.97 pg/mul) and IL-8 (57.94 +/- 55.47, 21.82 +/- 21.93 pg/mul) levels in the test side after fibrining while there was an increase in the control side (IL-1beta 31.40 +/- 16.82, 128.8 +/- 45.14; IL-8 31.40 +/- 16.82, 128.83 +/- 45.14 pg/mul) ($p < 0.05$). The change in concentration of IL-1beta and IL-8 following intervention correlated significantly in both the sites. Clinical parameters differed significantly only on the seventh day with less plaque and bleeding on the test sites. Conclusions: Fibrin sealant enhances early wound healing by reducing inflammation after periodontal flap surgery.