

## INTISARI

Fibroblas ligamen periodontal merupakan sel kunci dalam proses regenerasi jaringan periodontal. Proliferasi fibroblas ligamen periodontal dipicu oleh keberadaan faktor pertumbuhan. *Platelet rich fibrin* (PRF) merupakan konsentrat platelet yang mengandung faktor pertumbuhan. *Platelet rich fibrin* dapat digunakan langsung setelah sentrifugasi maupun setelah dilakukan kompresi sehingga terbentuk membran. Hasil samping kompresi PRF berupa cairan yang disebut *releasate*. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh PRF *releasate* terhadap proliferasi fibroblas ligamen periodontal.

Pada penelitian ini fibroblas ligamen periodontal dibagi menjadi empat kelompok yaitu kelompok fibroblas ligamen periodontal, fibroblas ligamen periodontal dengan PRF non kompresi, fibroblas ligamen periodontal dengan PRF kompresi, fibroblas ligamen periodontal dengan PRF *releasate*. Masing-masing kelompok terdiri dari 6 sampel. Pemeriksaan proliferasi fibroblas menggunakan MTT assay pada hari 3 dan 7. Hasil dianalisis menggunakan uji anava dilanjutkan dengan uji *post hoc least significant difference*. Hasil penelitian menunjukkan bahwa proliferasi fibroblas tertinggi dicapai pada kelompok PRF non kompresi. Terdapat perbedaan proliferasi fibroblas yang signifikan antara perlakuan kelompok fibroblas ligamen periodontal, PRF non kompresi, dan PRF kompresi. Proliferasi fibroblas pada kelompok PRF non kompresi dan PRF *releasate* tidak berbeda signifikan.

Kesimpulan yang diperoleh dari penelitian ini adalah PRF non kompresi dan PRF *releasate* lebih efektif meningkatkan proliferasi fibroblas ligamen periodontal.

**Kata kunci: *Platelet Rich Fibrin*, PRF Kompresi, PRF Non Kompresi, PRF *Releasate*, Fibroblas Ligamen Periodontal**

## ABSTRACT

Periodontal ligament fibroblasts are key cells in the regeneration of periodontal tissue. The proliferation of periodontal ligament fibroblasts triggered by the presence of growth factors. Platelet Rich Fibrin (PRF) is concentrated platelets contain growth factors. Platelet Rich Fibrin can be used immediately after centrifugation or after compressed to form the membrane. Byproducts compressed PRF in the form of a liquid called releasate. The aim of this study was to determine the effect of PRF releasate against the proliferation of periodontal ligament fibroblasts.

In this study, periodontal ligament fibroblasts were divided into four groups: periodontal ligament fibroblasts, periodontal ligament fibroblasts with platelet rich fibrin non-compressed, periodontal ligament fibroblasts with platelet rich fibrin compressed, periodontal ligament fibroblasts with platelet rich fibrin releasate. Each group consisted of 6 samples. Examination of the proliferation of fibroblasts using the MTT assay on the third day and the seventh. Results were analyzed using ANOVA test followed by post hoc test least significant difference. The results showed that the highest fibroblast proliferation achieved on non compressed the PRF group. There were significant differences between the proliferation of fibroblasts treated periodontal ligament fibroblasts group, PRF non compressed, and compressed PRF. The proliferation of fibroblasts in the group of non compressed PRF and PRF releasate did not differ significantly.

The conclusion of this study was non compressed PRF and PRF releasate more effectively improve periodontal ligament fibroblast proliferation.

**Keywords: Platelet Rich Fibrin, PRF Compressed, PRF Non Compressed, PRF Releasate, Periodontal Ligament Fibroblasts**