

**PENGARUH VARIASI APLIKASI *DESENSITIZING AGENT* YANG
MENGANDUNG FLUOR PADA *IN-OFFICE BLEACHING*
DENGAN HIDROGEN PEROKSIDA 40%
TERHADAP JUMLAH FIBROBLAS
(kajian *in vivo* pada Tikus *Wistar*)**

INTISARI

Reactive Oxygen Species (ROS) yang timbul akibat paparan hidrogen peroksida menyebabkan inflamasi pada pulpa, migrasi dan proliferasi fibroblas sehingga jumlah fibroblas menjadi meningkat. Aksi remineralisasi yang ditimbulkan oleh *desensitizing agent* yang mengandung fluor (*Casein Phosphopeptide-Amorphous Calcium Fluoride Phosphate*/CPP-ACFP) menyebabkan penutupan tubuli dentin, sehingga dapat meminimalisir penetrasi hidrogen peroksida ke dalam pulpa. Penelitian ini bertujuan untuk mengetahui pengaruh variasi aplikasi CPP-ACFP yang diaplikasikan sebelum, sesudah dan sebelum-sesudah *in-office bleaching* menggunakan hidrogen peroksida 40% terhadap jumlah fibroblas pada pulpa.

Dua puluh delapan gigi molar rahang atas tikus *Wistar* terbagi menjadi 4 kelompok, kelompok Kontrol mendapat perlakuan berupa *bleaching*, kelompok I mendapat perlakuan berupa aplikasi CPP-ACFP sebelum *bleaching*, kelompok II mendapat perlakuan berupa aplikasi CPP-ACFP setelah bahan *bleaching*, dan kelompok III mendapat perlakuan berupa aplikasi CPP-ACFP sebelum dan sesudah *bleaching*. Pengorbanan tikus dilakukan 5 hari setelahnya, dan dibuat preparat histologi dengan pengecatan Hematoksilin Eosin (HE). Perhitungan jumlah fibroblas dilakukan pada pulpa koronal dengan mikroskop cahaya perbesaran 1000x.

Hasil uji Anava menunjukkan terdapat pengaruh variasi waktu aplikasi CCP-ACFP terhadap jumlah fibroblas pulpa koronal gigi tikus *Wistar* yang di-*bleaching* dengan Hidrogen Peroksida 40%. Kesimpulan dari penelitian ini adalah jumlah fibroblas pada pulpa tikus yang diaplikasi CPP-ACFP sebelum dan sesudah *in-office bleaching* lebih sedikit daripada yang diaplikasi sebelum atau sesudah *in-office bleaching*.

Kata kunci : *desensitizing agent*, *in-office bleaching*, jumlah fibroblas

THE EFFECT OF FLUORIDE CONTAINING DESENSITIZING AGENT APPLICATION RELATED TO IN-OFFICE BLEACHING USING 40% HYDROGEN PEROXIDE ON THE NUMBER OF FIBROBLASTS (In vivo study on Wistar rats)

ABSTRACT

Reactive Oxygen Species (ROS) released from exposure to hydrogen peroxide causes inflammation of the pulp, migration and proliferation of fibroblasts so that the number of fibroblasts increases. Remineralization action by fluoride containing desensitizing agent (Casein Phosphopeptides-Amorphous Calcium Fluoride Phosphate/ CPP-ACFP) occluding dentinal tubule, thereby minimizing the penetration of hydrogen peroxide into the pulp. The aim of this study was to determine the effect of fluoride containing desensitizing agent (CPP-ACFP) application: before, after and before-after in-office bleaching techniques using 40% hydrogen peroxide on the number of fibroblasts.

Twenty eight maxillary molar teeth were divided into 4 groups, Control Group (bleaching treatment without CPP-ACFP application), Group I CPP-ACFP was applied before bleaching, Group II CPP-ACFP was applied after bleaching, and Group III CPP-ACFP was applied before and after bleaching. Rats were sacrificed 5 days after the treatment and histological preparation stained using HE. Fibroblasts counting was performed in the coronal pulp using a 1000x magnification light microscope.

ANOVA test showed that there were significant mean differences among the application of CPP-ACFP on the number of coronal pulp fibroblast of Wistar rats' teeth bleached using 40% Hydrogen Peroxide. The LSD test showed that there were statistically significant differences in almost all of the compared group except between the Control Group and Group II. Conclusion of this study is the number of fibroblasts in the pulp of rats applied CPP-ACFP before and after in-office bleaching was less than applied CPP-ACFP before or after in-office bleaching.

Keywords: desensitizing agent, in-office bleaching, number of fibroblasts