

**PENGARUH APLIKASI *DESENSITIZING AGENT* YANG
MENGANDUNG FLUOR TERHADAP JUMLAH
NEUTROFIL PADA *BLEACHING*
EKSTRAKORONAL DENGAN
HIDROGENPEROKSIDA 40%
(Kajian *In Vivo* pada Tikus Wistar)**

INTISARI

Desensitizing agent yang mengandung flour bertujuan untuk meminimalkan efek pemakaian bahan *bleaching*. Pengaplikasian CPP-ACFP berpotensi besar untuk menghambat demineralisasi dan remineralisasi email melalui pembentukan flourapatit. Flour akan terdeposisi dengan cara mengendapkan kristal kalsium *fluoride* pada tubulus dentinalis sehingga mengurangi diameter tubulus dentinalis. Aplikasi CPP-ACFP sebelum *bleaching* akan memproteksi dentin dari paparan bahan *bleaching*. Penelitian ini bertujuan mengetahui pengaruh aplikasi *desensitizing agent* yang mengandung flour (CPP-ACFP) terhadap jumlah neutrofil di pulpa gigi pada *in office bleaching* dengan hidrogen peroksida 40%.

Lima belas ekor tikus putih galur Wistar dibagi menjadi 3 kelompok yaitu kelompok I (kontrol) dengan perlakuan *bleaching* tanpa aplikasi CPP-ACFP (dibilas aquades), kelompok II aplikasi CPP-ACFP setelah *bleaching*, dan kelompok III aplikasi CPP-ACFP sebelum dan sesudah *bleaching*. Tikus di dekapitasi 24 jam setelah perlakuan. Pengambilan rahang atas bagian molar dan dibuat preparat dengan pewarnaan hematoksin eosin. Preparat diamati dengan mikroskop cahaya perbesaran 400x yang dilengkapi kamera mikroskop (*OptiLab, Indonesia*) dan dihitung jumlah sel neutrofil. ANAVA satu jalur menunjukkan terdapat perbedaan rerata yang bermakna ($p < 0,05$) jumlah neutrofil antar kelompok: kelompok I, kelompok II dan kelompok III. Uji LSD menunjukkan terdapat perbedaan rerata yang bermakna pada semua pasangan kelompok.

Kesimpulan dari penelitian ini adalah aplikasi CPP-ACFP sebelum dan sesudah *bleaching* ekstrakoronal dengan hidrogen peroksida 40% menunjukkan paling efektif dalam menurunkan jumlah neutrofil.

Kata kunci: *desensitizing agent*, neutrofil, *bleaching* ekstrakoronal.

***EFFECT OF FLUORIDE CONTAINING DESENSITIZING AGENT ON
THE AMOUNT OF NEUTROPHIL RELATED WITH
EXTRACORONAL BLEACHING USING
40% HYDROGEN PEROXIDE
(In vivo study on Wistar rats)***

ABSTRACT

Desensitizing agent contain fluoride which aims to minimalize effects after in office bleaching. Casein phosphopeptides- amorphous calcium fluoride phosphate (CPP-ACFP) application can potentially inhibit demineralization and induce enamel remineralization by forming fluorapatite. Fluoride will be disposed by precipitating calcium fluoride inside dental tubulus resulting in decreased dentinal tubulus diameter. Application of CPP-ACFP before bleaching will protect dentin from bleaching material exposure. This research aims to observe the effect of fluoride containing desensitizing agent on the amount of neutrophil related with extracoronary bleaching using 40% hydrogen peroxide .

Fifteen Wistar rats were extracoronally bleached on maxillary molars. Subjects were divided into 3 groups: group I or control with bleaching treatment without CPP-ACFP application (rinsed with distilled water), group II CPP-ACFP application after bleaching, and group III CPP-ACFP application before and after bleaching. Subjects decapitated 24 hours after treatment. After that, the jaw is taken on the upper molar part and preparations made with hematoxylin eosin staining. Preparations were observed with a 400x magnification light microscope equipped with a microscope camera (OptiLab, Indonesia) and calculated the number of neutrophil cells. One-way ANOVA shows there is a difference in mean which was significant ($p < 0.05$) between the number of neutrophils in group I, group II and group III. The LSD test showed that there were significant mean differences in the treatment and control group pairs.

The conclusion of this study is that CPP-ACFP application before and after bleaching showed fewer neutrophils compared to CPP-ACFP after in office bleaching using 40% hydrogen peroxide.

Keywords: desensitizing agent, neutrophils, extracoronary bleaching