

PENGARUH BAHAN IRIGASI EKSTRAK BUAH ASAM JAWA (*Tamarindus indica*) 5% TERHADAP KEKERASAN MIKRO DENTIN SALURAN AKAR

INTISARI

Pembersihan (*cleaning*) saluran akar merupakan salah satu tahapan dalam perawatan saluran akar yang dicapai melalui proses instrumentasi dan irigasi. Ekstrak *Tamarindus indica* 5% memiliki efek antibakteri, tidak bersifat toksik dan mampu membersihkan *smear layer*. Ekstrak *Tamarindus indica* 5% memiliki kandungan asam sitrat dan pH rendah yang dapat menginduksi terjadinya demineralisasi dan mempengaruhi kekerasan mikro dentin saluran akar. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh larutan irigasi ekstrak asam jawa (*Tamarindus indica*) 5% terhadap kekerasan mikro dentin saluran akar.

Subjek penelitian berupa 15 gigi premolar pertama mandibula manusia usia diatas 14 tahun, dan berakar tunggal dibagi menjadi 3 kelompok yaitu kelompok perlakuan ekstrak *Tamarindus indica* 5%, kelompok kontrol positif NaOCl 5,25%, dan kelompok kontrol negatif saline. Tiap subjek dipreparasi saluran akar menggunakan teknik *crown down* dan dirigasi selama 30 detik sebanyak 10 kali setiap pergantian *file*. Subjek kemudian diuji kekerasan mikro dentin saluran akar menggunakan *Vicker's Microhardness Tester*.

Hasil uji ANAVA satu jalur menunjukkan tidak terdapat perbedaan signifikan ($p>0,05$) nilai kekerasan mikro dentin saluran akar antara kelompok perlakuan, kontrol negatif, dan kontrol positif. Kesimpulan penelitian ini adalah tidak terdapat perbedaan penurunan kekerasan mikro dentin saluran akar antara irigasi ekstrak *Tamarindus indica* 5%, NaOCl 5,25, dan salin.

Kata kunci: *Tamarindus indica*, kekerasan mikro, dentin saluran akar

THE EFFECT OF 5% TAMARINDUS INDICA AS IRRIGATING SOLUTION ON THE MICROHARDNESS OF ROOT CANAL DENTIN

ABSTRACT

The cleaning process of root canal was one of the stages in endodontic treatment which performed through instrumentation and irrigation. Tamarindus indica extracts had antibacterial effect, non-toxic, and could remove smear layer. Tamarindus indica extracts contained citric acid and low pH which induced demineralization and affecting the microhardness of root canal dentin. The aim of this study was to evaluate the effect of 5% Tamarindus indica extract as root canal irrigating solution on microhardness of root canal dentin.

Fifteen single rooted human mandibular first premolar above 14 years old, were divided into 3 groups. The control group (5% Tamarindus indica extracts), the positive control group (NaOCl 5,25%), and the negative control group (saline) were instrumented using crown down technique with 30 seconds irrigation process that was performed 10 times after each file during root canal preparation. The subjects were then measured for the root canal dentin microhardness values using Vicker's Microhardness Tester.

The result of One Way ANOVA test showed there was no statistical significance ($p > 0,05$) of the root canal dentin microhardness value between the three groups. The conclusion of this study was that there was no difference on the decrease of root canal dentin microhardness value between irrigation of 5% Tamarindus indica, NaOCl 5,25%, dan saline.

Key words: Tamarindus indica, microhardness, root canal dentin