

Efek Larutan Cuka Apel (Malus Pumila Mill) terhadap Topografi dan Kekasaran Permukaan Dentin Saluran Akar = Effect of Apple Vinegar Solution (Malus Pumila Mill) on Topography and Root Dentin Surface Roughness

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Abstrak

Latar Belakang: American Association of Endodontist (AAE) (2021) menganjurkan penggunaan irigasi NaOCl 1,5% - 3% dan EDTA 17% pada prosedur regeneratif endodontik. Namun, kedua larutan irigasi tersebut memiliki efek terhadap sel punca dan jaringan dentin. Oleh karena itu bahan pengganti bersumber dari bahan alami mulai diteliti, salah satunya adalah cuka apel. Tujuan: Menganalisis efek larutan cuka apel berbagai konsentrasi dan larutan irigasi sintetik terhadap topografi dan kekasaran permukaan dentin saluran akar. Metode: 28 spesimen dentin setebal 1 mm dibagi random pada 7 kelompok, lalu tiap kelompok terdiri dari 4 spesimen. Spesimen dentin direndam dengan aquades, NaOCl 1,5%, NaOCl 2,5%, EDTA 17%, larutan cuka apel 2,5%, 5% dan 10% dengan volume 1,8 ml selama 1 menit. Pengamatan topografi dan analisis kekasaran permukaan dentin saluran akar dilakukan dengan mikroskop digital. Hasil: Terdapat efek larutan cuka apel berbagai konsentrasi dan larutan irigasi sintetik terhadap topografi dan kekasaran permukaan dentin saluran akar yang dievaluasi dengan mikroskop digital. Namun tidak terdapat perbedaan efek larutan cuka apel konsentrasi 2,5%, 5% dan 10% dibandingkan dengan NaOCl 1,5%, 2,5% dan EDTA 17% terhadap kekasaran permukaan dentin saluran akar. Kesimpulan: Larutan cuka apel memiliki efek terhadap kekasaran permukaan dentin saluran akar. Nilai rerata kekasaran permukaan terendah adalah cuka apel 2,5% walaupun nilainya tidak berbeda bermakna dengan larutan uji lainnya.

.....Background: The American Association of Endodontist (AAE) (2021) recommends the use of 1.5% - 3% NaOCl irrigation and 17% EDTA in regenerative endodontic procedures. However, these two irrigant solutions had an effect on stem cells and dentine tissue. Therefore, substitutes derived from natural ingredients have begun to be researched, one of which is apple vinegar. Objective: To analyze the effect of various concentrations of apple vinegar and synthetic irrigation solutions on topography and surface roughness of root canal dentin Method: 28 specimens of 1 mm thick dentin were randomly divided into 7 groups, then each group consisted of 4 specimens. Dentin specimens were immersed in distilled water, 1.5% NaOCl, 2.5% NaOCl, 17% EDTA, 2.5%, 5% and 10% apple vinegar solution with 1.8 ml volume of solution for 1 minute. The topography and surface roughness observation was carried out using digital microscope. Results: There was effect of apple vinegar solutions with various concentrations and synthetic irrigant solutions on topography and surface roughness of root canal dentin evaluated by digital microscopy. However, there was no difference in the effect of apple vinegar solution concentrations of 2.5%, 5% and 10% compared to 1.5%, 2.5% NaOCl and 17% EDTA on surface roughness of root canal dentin. Conclusion: Apple vinegar solution has an effect on surface roughness of root canal dentin. The lowest average surface roughness value was 2.5% apple vinegar, although the value was not significantly different from the other test solutions.