ABSTRACT

THE CLEANING EFFICACY OF IRRIGATION SYSTEMS BETWEEN ENDOVAC AND ENDOULTRA AGAINST ROOT CANAL WALL

Background: *Irrigant activation is important for successful endodontic treatment. There are some of activation technique those are manual irrigation with needle irrigation and mechanics irrigation with sonic, and ultrasonic activation Irrigation can function as a lubricant, remove debris, eliminate microorganisms and eliminate the smear layer. Irrigation is expected to help the process of cleaning the apical third of the root canal. Irrigation in the apical third of the root canal can be ineffective. This is due to the limited length of the irrigation needle that can enter the root canal and the formation of a vapor lock that inhibits the circulation of irrigation solutions. Therefore, an effective irrigation system is needed so that it can clean the surface of the apical third of the root canal.* ***Purpose:*** *This study aimed to explain the effect of the irrigation system with EndoVac (negative pressure) and EndoUltra (passive ultrasounic) on the cleanliness of the root canal wall.* ***Method:*** *27 samples of mandibular premolar teeth devided into three groups Mandibular premolars that met the inclusion criteria were divided into 3 groups of 9 samples, and prepared using the irrigation system with EndoVac (negative pressure), EndoUltra (passive ultrasounic), and conventional irrigationsystem as a control group. Teeth were preparated using Protapper Next rotary file. Each group irrigated using 2,5% NaOCl solution. After preparation and drainage, the sample was cut into halves using a stainless steel chisel, a section was randomly selected and examined using SEM (Scanning Electron Microscope) with 1000 X.* ***Result:*** *The mean result of optical density for each the irrigation system with EndoVac (negative pressure), EndoUltra (passive ultrasounic), and conventional irrigation system as a control group is 0,233 Au, 0,109 Au and 0,703 Au Statistical analysis by using Kruskal Wallis and Mann-Whitney Test was significantly different (p<0,005)..* ***Conclusion:*** *There was significant different between the groups. The irrigation system with EndoUltra (passive ultrasonic) are more effective at cleaning 1/3 root canal walls than the irrigation system with EndoVac (negative pressure) and conventional irrigation system as a control group.*

Keywords : *negative pressure irrigation system, passive ultrasonic, root canal irrigation systems.*

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DAFTAR SINGKATAN

NaOCl	: Sodium Hipoklorit
Au	: *Absorbance Unit*
MDT	: Master Delivery Tip
ml	: milliliter
kHz	: Kilo Hertz