

COMPARISON OF THE EFFECT OF THREE IRRIGATION TECHNIQUES AND ROOT CANAL PREPARATION SIZE ON SODIUM HYPOCHLORITE PENETRATION INTO ROOT CANAL DENTIN

INTRODUCTION

The success of endodontic treatment depend on the correct diagnosis, cleaning and shaping of the root canal system (Akhlaghi, Dadresanfar et al. 2014). Limitation of mechanical debridement is varies of root canal morphology such as accessory canal, curvature of canal these obstacles make endodontic treatment more complicated so irrigation is another way to remove bacteria and infected dentin in the accessory canal.

OBJECTIVE

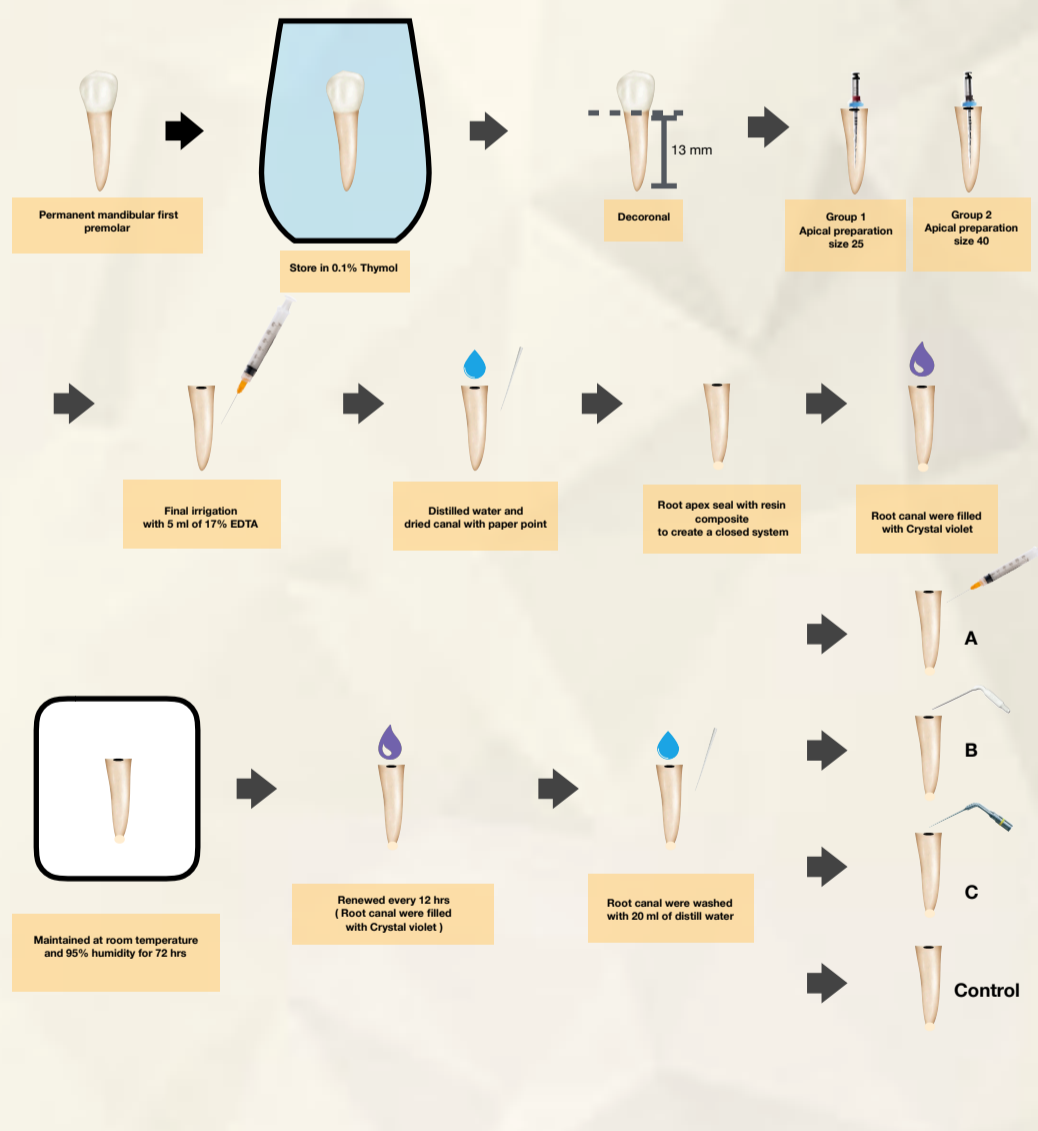
1. To compare the efficiency of Conventional syringe irrigation, Passive ultrasonic irrigation and Innovative sonic-powered irrigation, by assess the penetration of sodium hypochlorite (NaOCl) solutions in dentinal tubules.
2. To evaluate the effect of apical preparation size on penetration of irrigants and canal cleaning efficiency.
3. To evaluate penetration of irrigants in difference level of root canal.

KEYWORDS : conventional irrigation, dentinal tubule, EDDY, innovative sonic powered irrigation, irrigants, passive ultrasonic irrigation, sodium hypochlorite

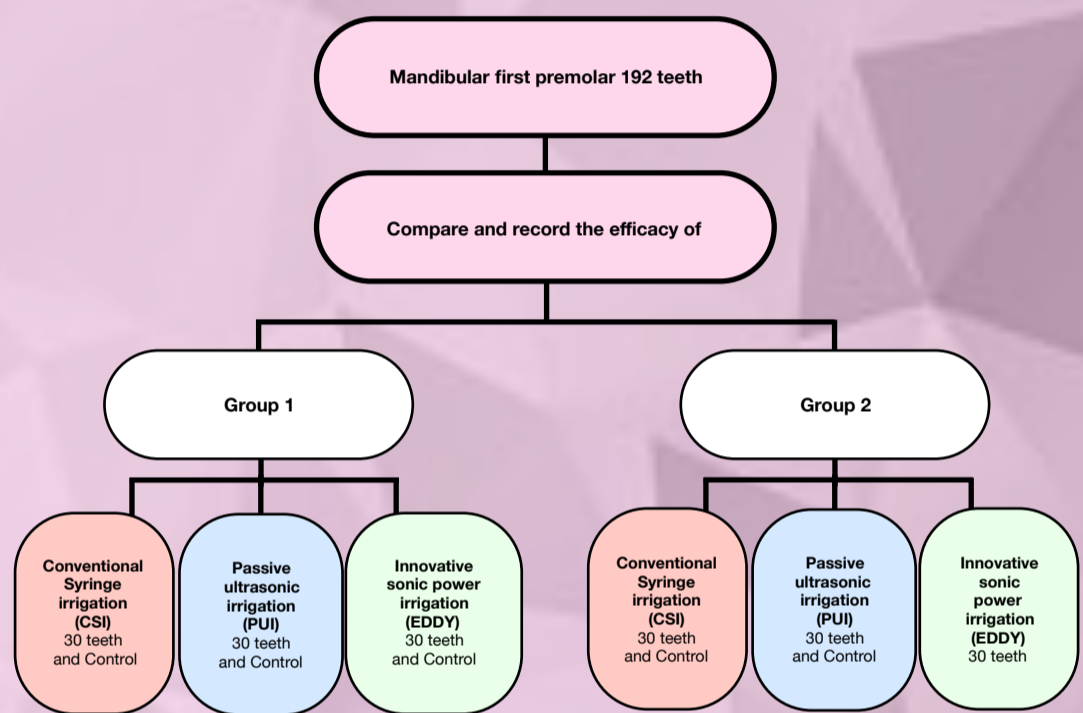
METHODOLOGY

Research design

This research study is experimental to study the efficacy of sodium hypochlorite about the depth of penetration into dentinal tubule by different type of irrigation (Conventional syringe irrigation, Passive ultrasonic irrigation and Innovative sonic powered irrigation)



METHODOLOGY



Then evaluate the penetration of the sodium hypochlorite solution into dentinal tubules was performed by measuring the depth of the crystal violet stain that was bleached.

Then all specimens were captured with a stereomicroscope, it has the advantages of high resolution and a large depth of field, for evaluate depth of penetration of sodium hypochlorite into dentinal tubule (Faria, Viola et al. 2018). Then measuring the depth of the crystal violet stain that will be bleached by Image J.

DATA ANALYSIS : Statistical analysis using Kolmogorov-Smirnov test for test normality had normal distribution so using parametric for Levene's test for testing homogeneity of variants finally the result was there has no homogeneity of variants according to this reason could not using three ANOVA, so Welch's ANOVA were chosen for comparison technique factors and comparison level factor and using independent sample T test for comparison apical preparation size. Significant level at 0.05

RESULT : The greatest penetration depth was apical preparation size 25 at coronal part irrigated by conventional syringe needle irrigation technique mean = 899.44 micrometer and SD = 95.44.

The group that the least bleached by NaOCl were apical preparation size 25 and 40 at apical part irrigated by conventional syringe needle irrigation and apical preparation size 25 at apical part irrigated by PUI.

CONCLUSION : From the limitation of this study proved that efficiency of EDDY have effect on penetration of sodium hypochlorite more than PUI and conventional syringe irrigation respectively. Especially, the apical area of apical preparation size 25, EDDY is the most efficiency to activate irrigant into dentinal tubule.

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