

ABSTRACT

Background: During Chemomechanical preparation, Extrusion of irrigation solution into periapical tissues may occur, which may result in periapical inflammation, flare ups, and inhibit the healing of periapical tissues. Some irrigation devices have been developed with negative pressure irrigation system and passive ultrasonic irrigation for the irrigation of root canal system.

Aim: Analyze the extrusion of irrigation solution on the tooth with negative pressure irrigation system (Endovac) and Passive Ultrasonic Irrigation (Endoultra) **Method:** 30 samples of premolar teeth divided into three groups (negative pressure irrigation, Passive ultrasonic irrigation, conventional irrigation technique as control group). Teeth were prepared using ProTaper Next rotary file. Each group irrigated using 2,5 % NaOCl solution and the extrusion solution were collected in th

e tube containing 3 ml aquadest. The obtained samples were analysed for the absorbance using absorption spectrophotometer.

Result: Various amount of apical extrusion was seen among three above study groups. The mean result of absorbance for each negative pressure irrigation system (Endovac) is 0,086, passive ultrasonic irrigation (Endoultra) is 0,249 and control group (conventional technique) is 0,708. All sample were examined and data was statistically analysed using Kruskal-Wallis with significantly different ($p < 0,05$).

Conclusion: There was significant different between the groups. The negative pressure irrigation system (Endovac) extruded less than passive ultrasonic irrigation (Endoultra) and conventional irrigation technique

Keyword: Extrusion of irrigation solution, Negative pressure irrigation system, passive ultrasonic irrigation, irrigation technique