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IRRIGATION SOLUTIONS IN ROOT CANAL TREATMENT

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Relevance. Irrigation is a key part of successful root canal treatment as it fulfils several important mechanical, chemical and (micro) biological functions. Irrigation is also the only way to impact those areas of the root canal wall that are not touched by mechanical instrumentation. Much of the research on endodontic irrigation has focused on the effect of irrigation on the smear layer smear layer removal can be accomplished relatively easily when correct protocols are followed. A bigger challenge for irrigation may be the areas untouched by the files, such as fins, isthmuses and large lateral canals Also, large areas in the oval and flat canals may remain untouched despite careful instrumentation. These areas contain tissue remnants and biofilms that only can be removed by chemical means using irrigation.

Aim: to find the best irrigation solution for root canals, to examine effect of each irrigation solution, to examine combination of irrigation solutions together, find the best irrigation solution for root canals in function.

Materials and methods Extracted teeth, K-file, H-file, gutta percha, paper point, sealer, gloves, round burs, conical burs, spreader, irrigation solutions (EDTA 17%; NaOCl 3%; Chlorhexidine 2%, 0.05%; citric acid, peroxide 3%), syringe. Step back, crown down, lateral condensation.

Results and their discussion. Sodium hypochlorite (NaOCl) is the most popular irrigating solution. Hypochlorite is used in concentrations between 0.5-6%. To maximise the effectiveness of hypochlorite irrigation, the solution should be frequently refreshed and kept in motion by agitation or continuous irrigation. EDTA is thereafter not effectively dissolved by NaOCl. When smear layer removal is completed by EDTA, hypochlorite should not be used again as it causes erosion on dentine after EDTA or citric acid.

Conclusion: irritant's have a key role in the eradication of microbes from the root canal system. Some parameters such as antibacterial, antifungal, and antibiofilm activity, toxicity, tissue solubility, substantivity, impact on dentin and smear layer, and side effects such as allergic reactions can affect the choice of an appropriate irrigant. NaOCl has been regarded in several studies as the most successful irrigation solution for endodontic treatment. Its antimicrobial activity is at least comparable or even greater than that of other popular irrigants. It is the only irrigant able to remove and eliminate the microbial biofilm from the canal. It could be used as a strong agent with the highest dissolving tissue capacity as an irrigant.