**ID: 3407**

**Congress:** 12th International Congress of Iranian Academy of Restorative Dentistry 24-26 October 2012 Tabriz-Iran

**Title:** Review of chlorhexidine properties and effects as a root canal irrigant

**Authors:** Soodabeh Kimyai1, Mohammad Esmaeel Ebrahimi Chaharom2, Parnian Alizadeh Oskoe1, Sahand Rikhtegaran2
1.DDS, MS, Associate Professor of Operative Department of Tabriz Dental Faculty, Tabriz University of Medical Sciences
2.DDS, MS, Assistant Professor of Operative Department of Tabriz Dental Faculty, Tabriz University of Medical Sciences

**Abstract:**

Aim: In this presentation the properties of chlorhexidine as a root canal irrigant will be reviewed.

Summary: Successful root canal therapy relies on the combination of proper instrumentation, irrigation, and obturation of the root canals. Various irrigants are used in endodontics. Chlorhexidine digluconate is widely used in disinfection because of its excellent antimicrobial activity. Chlorhexidine is a positively charged molecule and its efficacy is because of the interaction of the positive charge of the molecule with the negatively charged phosphate groups on microbial cell walls, which alters the cells' osmotic equilibrium and membrane permeability. Chlorhexidine has the ability to bind anionic molecules such as phosphate present in the structure of hydroxyapatite and leads to release of small amounts of calcium from the root canal dentin. It has been reported that because of its MMP-inhibitory effect, chlorhexidine can significantly improve the resin-dentin bond strength. Some studies have evaluated cytotoxicity of chlorhexidine and it has been reported that in the clinically used concentrations, the biocompatibility of chlorhexidine is acceptable.

Conclusion: After the smear layer removal procedure in root canal therapy, a final rinse with an antiseptic solution such as chlorhexidine appears beneficial. It has an affinity for dental hard tissues and, when it bonds to the surfaces, it has prolonged antimicrobial activity.

Chlorhexidine, root canal irrigant, root canal therapy

**Presentation:** Poster