



# Use of chlorhexidine in restorative dentistry and endodontics



Longurova Natasha, Toneva Stojmenova Verica, Kovachevska Ivona  
Univerzity Goce Delchev -Shtip, R.N.Macedonia - Faculty of medical sciences, Dental medicine

Nowadays, caries and periodontal diseases are the two dominant diseases of the oral cavity, and dental plaque is the main factor leading to their development and progression. The control of dental plaque, its accumulation and development is the basis for the fight against caries.

The aim of this research is to define the mechanism of the antimicrobial effect of chlorhexidine, its use in preventive and restorative dentistry, the advantages and disadvantages during endodontic therapy, as well as to review its negative properties and toxicity.

For the realization of this paper, was made a research of scientific and professional literature, clinical studies and presentation of cases obtained by searching and analyzing Pubmed and Research Gate.



Results: The antimicrobial spectrum of activity of CHX includes a large number of microorganisms such as Gram+ and Gram- bacteria, bacterial spores, lipophilic viruses (including HBV), fungi, especially dermatophytes. Preventing the accumulation of plaque, it becomes an anti-plaque and anti-gingivitis agent. Regarding its use in endodontics as an irrigant, the most commonly used protocol today involves irrigation with a 2.5%-6% sodium hypochlorite (NaOCl) solution supplemented with 2% CHX. In addition to its antibacterial effect, chlorhexidine is also used during the placement of composite restorations in order to inactivate matrix-metalloproteinases. MMP enzymes are activated by the acid used in dental adhesive systems used to place composite restorations. Chlorhexidine is used in such situations for complete inhibition of the enzyme - MMP. After etching with orthophosphoric acid, the cavity is washed with water and dried, and then is applied a 2% solution of chlorhexidine. That concentration is sufficient to inhibit the enzyme.



Conclusion: When it comes to modern research on chlorhexidine, it is widely used and can act as a bacteriostatic (0.02%-0.06%) or bactericidal (0.2%-0.12%), depending on the dose and the bacterial species, where in the same dose in some species it shows a bacteriostatic effect, and in others, a bactericidal effect.

