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Delivery of antiseptics in oral treatment

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Aim: Periodontal diseases are among the most prevalent infectious diseases. Due to biofilm structure of dental plaque, release of Chlorhexidine inside the crevice of the gingiva can be highly effective. Concerning the importance of designing, synthesis and application of efficient biocompatible systems for drug delivery with desired speed and appropriate time, in this study the ability of mineral porous nanostructural system with silicate and aluminosilicate network for carrying and releasing Chlorhexidine was investigated.

Methods and Materials: The successful loading of drug in the mentioned holes was monitored by FT-IR, X-ray diffraction (XRD), Thermo gravimetric analysis (TGA), UV-Vis spectroscopy methods. Moreover, the drug delivery from mineral carrier was followed by UV-Vis spectroscopy.

Results: According to the results, MCM-41 in comparison with other applied systems, due to its special specification including high surface area, large pore volume and more accessible silanol groups which result in better drug interaction illustrate beneficial merits in drug placement capacity and long-term drug release.

Conclusions: MCM-41 was found as the best carrier by using MIC test and Disk diffusion test. As a conclusion this study showed that MCM the best candidate for carrying and delivering Chlorhexidine inside the gingival crevice.

Biography

Surena Vahabi has completed his DDS at the age of 23 years and his Master degree in Periodontics from Dental school, Shahid Beheshti Medical University and postdoctoral studies from Stanford University School of Medicine. Following successful results of postgraduate national board in Iran in 2002, he has been an assistant professor in Periodontics department in Qazvin dental school for about 4 years (2002-2006) and then in Shahid Beheshti dental school since 2006 till now. Eight theses of undergraduate students and two postgraduate have been directed by him. He have been lecturer and supervisor in theory and practice in pre clinic and clinic of Periodontics, Methodology and Biology for more than 500 undergraduate dental students and around 20 post graduate students since 2002. Currently, He is doing his career in the Periodontics unit, dental school of Shahid Beheshti medical university as one of most prestigious dental schools in Middle East. He have been involved part time in his private practice and some private clinics since 1997. His area of interests are clinical practice is periodontal therapy, periodontal surgeries and implant dentistry.

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