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Studying antibacterial and antifungal properties by adding chitosan, Ag, ZnO nanoparticles to complete denture tissue conditioners

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Chitosan has inhibited the growth of many pathogenic bacteria and fungi. The tissue conditioners are suitable platforms for growth and colonization of a variety of micro-organisms. One way to inhibit the growth of microorganisms is the combination of it with anti-fungal and anti-bacterial materials. This study was conducted to evaluate the anti-bacterial and anti-fungal properties of adding nanoparticles of Ag, ZnO and chitosan to tissue conditioners. Four micro-organisms in six different concentrations of nanoparticles of Ag, ZnO and chitosan were evaluated at 24 and 48 hours which included a total of 288 samples. Complete inhibition of growth occurred in *Candida albicans in concentration* of 2.5% and in *Enterococcus faecalis, Pseudomonas aeruginosa and Streptococcus mutans in* concentration of 5% of Ag, ZnO and chitosan nanoparticles. Also, the best effective concentration of nanoparticles in both 24 hours and 48 hours in *Candida albicans* was 1.25% and *Enterococcus faecalis, Pseudomonas aeruginosa and Streptococcus mutants was* 2.5%. The combination of nanoparticles Ag, ZnO and chitosan helps to inhibit the growth of microorganisms in the tissue conditioners. Also, the power effect of these nanoparticles on the fungi is more than bacteria

Biography

Ali Aeinfar has completed his DDS at Tabriz University of Medical Sciences in September 2016. He has been working on some resemble projects on adding combination of anti-bacterial and anti-fungal nanoparticles to tissue conditioners from 2013 to till date and has published 3 articles in internal journals on related issues

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