



**A CLINICAL STUDY TO EVALUATE THE ANTIMICROBIAL ACTIVITY OF
DENTURE SOFTLINING MATERIAL INCORPORATED BY SILVER
NANOPARTICLES.**

by

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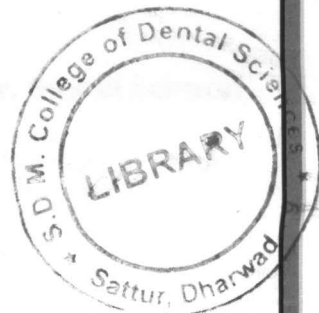
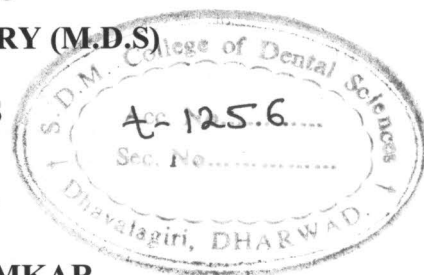
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ABSTRACT

Title: A clinical study to evaluate the antimicrobial activity of denture softlining material incorporated by silver nanoparticles

Background and Objectives: The advancements in nanotechnology in the field of dentistry has greatly increased. Silver (Ag) is known well for its antimicrobial characteristic and has a long history of application in medicine with low toxicity profile and a well-tolerated tissue response. It can be hypothesized that modification of softliners with silver nanoparticles has potential to decrease the risk associated with colonization of softliners by pathogenic microbes. This *invivo* study aimed to evaluate the antifungal efficacy of denture softliner incorporated with silver nanoparticles.

Methods: Maxillary complete dentures were fabricated for 25 patients with mould space on right and left side of the intaglio surface of the denture. The right side mould space was filled with softliner only (Ufi gel Hard) and left side mould space was filled with softliner incorporated with 0.5% silver nanoparticles. Denture insertion was done and patients were asked to report after 4 days. Softliner discs were removed from the intaglio surface of the denture and transferred to sterile test tube containing phosphate buffered saline. These samples were spread on sabouraud's dextrose agar plate and incubated at 37°C for 48 hours and colony counting was done. The data obtained was subjected to statistical analysis.

Results: There was a significant difference ($p < 0.05$) in the candida colony counts between the right and left side samples with marked reduction of candida colonies in the left side (softliner with silver nanoparticles).

Conclusion: Within the limitations of this study, the results suggest that the softliner containing silver nanoparticles can be effectively used as an antimicrobial agent against candida species.

Keywords: Softliner; Candida; antimicrobial; silver nanoparticles

Introduction