

## Antimicrobial Efficacy of 0.75% Metronidazole and 2% Chlorhexidine Gel Applied in Implant Screw Hole: A Clinical Trial

**Authors :** Mostafa Solati

**Abstract :** Objectives: Considering the gap of information regarding the optimal antimicrobial efficacy of metronidazole for application in the implant screw hole, this study aimed to compare the antimicrobial efficacy of 0.75% metronidazole and 2% chlorhexidine (CHX) gel applied in the implant screw hole. Materials and Methods: This randomized controlled clinical trial evaluated 60 implants (20 patients, each requiring three implants) in three groups (n=20). In group 1, 0.75% metronidazole gel was applied to the implant screw hole. In group 2, 2% CHX gel was applied, and in group 3, no material was used. Microbial samples were collected from the screw holes after three months, and the microbial colonies were counted. Data were analyzed using ANOVA. Results: The number of bacteria in the control group was significantly higher than that in 0.75% metronidazole gel and 2% CHX groups ( $P<0.05$ ). The CHX group caused the maximum reduction in colony count with no significant difference from the metronidazole group ( $P>0.05$ ). Conclusion: The application of 0.75% metronidazole gel and 2% CHX can effectively decrease the colony count in the implant screw hole and can probably play a role in the preservation of peri-implant tissue health.

**Keywords :** dental implant, metronidazole, CHX, screw hole

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