

مقایسه اثر دهانشویه‌های نیستاتین و کلرهگزیدین ایرانی با نمونه‌های خارجی بر سوش استاندارد و نمونه ایزوله بومی کاندیدا البیکانس به صورت برون‌تنی

دکتر زهرا عطایی[†] - دکتر حمید عبدالمهدی^{**} - دکتر مهدی سالارزاده^{***}

* استادیار گروه آموزشی بیماریهای دهان، دانشکده دندانپزشکی، دانشگاه علوم پزشکی کرمان

** استادیار گروه آموزشی میکروبیولوژی، دانشکده پزشکی، دانشگاه علوم پزشکی کرمان

*** دندانپزشک

Title: In vitro comparison of the effect of Iranian nystatin and chlorhexidine mouthwashes with foreign samples on standard and local isolated strains of *Candida albicans*

Authors: Ataei Z. Assistant Professor*, Abdollahi H. Assistant Professor**, Salarzadeh M. Dentist

Address: * Department of Oral Medicine, Faculty of Dentistry, Kerman University of Medical Sciences

** Department of Microbiology, Faculty of Medicine, Kerman University of Medical Sciences

Background and Aim: Chlorhexidine is a mouthwash with known antibacterial effect but its antifungal effect is not clear. The aim of this study was to compare the antimicrobial effects of nystatin and chlorhexidine mouthwashes (one Iranian product and the other, commercial) on *Candida albicans* under in vitro condition.

Materials and Methods: In this experimental study, the strains of *Candida albicans* used consisted of one standard strain (PTCC 5027) and ten local isolates. The latter were obtained from patients referred to different dental clinics in Kerman city. The specimens were taken from the gum and palate area by sterile swabs and dipped into Stewards transport medium, transferred to the laboratory within one hour, and cultured on Sabouraud dextrose Agar. Colonies showing the characteristic appearance of *Candida* were further cultured and routine differential tests including germ tube formation were performed to confirm the diagnosis of *C. albicans*. These were used to prepare a microbial cell suspension of 0.5 McFarland concentration. Each cell suspension was inoculated over duplicate plates of SDA and 4 wells of 5 mm diameter were made using sterile cork borers. Each previously coded mouthwash was placed in corresponding well and incubated for 24-48 hours and the diameter of inhibition zone was measured with ruler. The minimum inhibitory concentration (MIC) of each mouthwash for each isolate of *Candida albicans* was determined using dilution tube technique. Data were analyzed by SPSS package using proper statistical tests with $P < 0.05$ as the limit of significance.

Results: There was a significant difference between the antimicrobial effects of the four tested mouthwashes. The results indicated that Iranian nystatin mouthwash had the greatest effect and the average inhibition zone from the highest to the lowest was associated with Iranian nystatin, foreign nystatin, Iranian chlorhexidine and foreign chlorhexidine respectively. The MIC determination revealed that generally nystatin was more effective than chlorhexidine. No statistical difference was seen between the Iranian and foreign samples.

Conclusions: Despite the antifungal effects of chlorhexidine, more investigations on different strains of *C. albicans* is required before recommending its clinical application.

Key Words: Mouth wash; Nystatin; Chlorhexidine Antimicrobial effects; MIC

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[†] مؤلف مسؤول: نشانی: کرمان - دانشگاه علوم پزشکی کرمان - دانشکده دندانپزشکی - گروه آموزشی بیماریهای دهان
تلفن: ۰۳۴۱ ۲۱۱۸۰۷۴ پست الکترونیکی: atai-zahra@yahoo.com