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Candida SPP. ANTIFUNGAL SUSCEPTIBILITY PROFILE OF CLINICAL ISOLATES OF DENTAL PROSTHESIS USERS

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INTRODUCTION

Candidiasis is an opportunistic mycosis caused by yeasts of the *Candida* genus, which is part of the human microbiota[1]. Several factors may predispose the development of oral candidiasis, such as xerostomia, immunosuppression, and the use of dental prostheses. The mainly epidemiology factors of Candidiasis depends on the predisposition of the host, parasitic loading and fungal virulence[1]. In general, the treatment of oral candidiasis uses nystatin as the first choice[2]. When this medicine is not good enough, the use of fluconazole and itraconazole can be employed[2]. However, in recent decades, there has been a great increase in resistance to the antifungal agents used in therapeutic practice. This justifies the necessity of prospecting for new antifungal agents[3]. In this way, essential oils from plants represent an important renewable source with potential against resistant strains[3]

MATERIAL AND METHODS

Clinical isolates were identified by MALDI-TOF MS Biotyper 4.0 microflex Bruker. The antifungal susceptibility tests were made by the broth microdilution assay according to the methodology M-27 A2 recommended by the National Committee for Clinical Laboratory Standards, being testing the following antifungals: nystatin, fluconazole, itraconazole, and the essential oils of *Pelargonium graveolens* (geranium-Geranaceae), *Cinnamomum cassia* (cinnamon - Lauraceae), *Syzygium aromaticum* (clove - Myrtaceae) and *Myristica fragrans* (nutmeg - Myristicaceae) Ethical approval 2.236.863, CEP-UFRGS.

RESULTS

The antifungal susceptibility profile showed the following Minimum Inhibitory Concentration (MIC) results: fluconazole (MIC 0.5 - 32 µg/ml), itraconazole (MIC 0.125 – 4 µg/ml), nystatin (MIC 0.5 - 1 µg/ml) for *C. albicans* fluconazole (MIC 16 µg/ml), itraconazole (MIC 2 µg/ml), nystatin (MIC 0.5 µg/ml) for *C. lusitaniae.* All essential oils evaluated showed positive effects against the *Candida* species evaluated. The best results obtained with essential oil from cinnamom (MIC 15,60 - 31,25 µg/ml), followed by oils from clove (MIC 62.50 – 125 µg/ml), geranium (MIC 62.50 – 125 µg/ml) and nutmeg oil (MIC 250 – 500 µg/ml).

CONCLUSIONS

Cinnamon and clove showed promising potential for use in the oral candidiasis treatment. More studies are in course, as the essential oils chemical composition by GC/MS and biofilm formation capacity of *Candida* spp.

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REFERENCES

1.Garcia-Cuesta, C.; Sarrion-Perez, M. G.; Bagan, J. V. (2014) Current treatment of oral candidiasis: A literature review. *J. of Clin. Exp. Dent.,* 6(5):576-582, 2014.

2.Pappas, P.G. et al. Clinical Practice Guideline for the Management of Candidiasis: 2016, Update by the Infectious Diseases Society of America. *Clin. Infect Dis*, 62(4):1-50, 2016.

3.Lee, H.; Lee, D. G. Novel Approach into Efficient Antifungal Drug Action. *J. Micro. Biotec.*, 28(1):1-28, 2018.