Scytalidium dimidiatum And S. hyalinum Susceptibility To Antimicrobial Photodynamic Chemotherapy.


Faculty of Pharmaceutical Sciences of Ribeirão Preto, University of São Paulo, São Paulo, Brazil. E-mail: kress@fcfrp.usp.br

INTRODUCTION. Scytalidium dimidiatum is a saprophytic fungus and pathogen found in soil and vegetation of tropical climate. The habitat of S. hyalinum is unknown, and is considered an hyaline variant of S. dimidiatum. Infections by Scytalidium sp. affects immunocompromised and immunocompetent patients, with special attention to dermatomycoses and onychomycosis. Considering the resistance to antifungal agents against opportunistic fungi and the growing commercial use of antimicrobial photodynamic therapy (APT), the aim of this study was to evaluate the effectiveness of APT using commercial photosensitizers (PS) against both, S. dimidiatum and S. hyalinum. MATERIAL AND METHODS. Scytalidium sp. strains were isolated from biological samples and classical and molecular identification were carried out. The APT test was done with methylene blue (MB), Ortotoluidine Blue (TBO), New Methylene Blue (NMB), and methylene blue derivative named S137. These PS were distributed with arthroconidia of S. dimidiatum and S. hyalinum in RPMI culture media and incubated in the dark for 30 minutes and then exposed to light for final doses of 10 and 20 J cm-2. The minimum fungicidal concentration (MFC) was determined after the incubation at 37°C for 96 hours. RESULTS AND DISCUSSION. NMB and S137 showed higher efficiency for growth inactivation of S. dimidiatum, and even increasing light dose, S. dimidiatum strain displays a refractory phenotype to APT with FS, MB and TBO. Low values of MFC is shown to S. hyalinum to all PS tested. CONCLUSION. Thus, even though FS, MB and TBO displayed refractory effect to S. dimidiatum possibly justified by the presence of melanin-like pigment, the APT proved to be a good option to inactivate Scytalidium sp.

Key-words: Antimicrobial Photodynamic Chemotherapy, Scytalidium sp., photosensitizers

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