



45° CONGRESSO NAZIONALE DELLA SOCIETÀ ITALIANA DI MICROBIOLOGIA

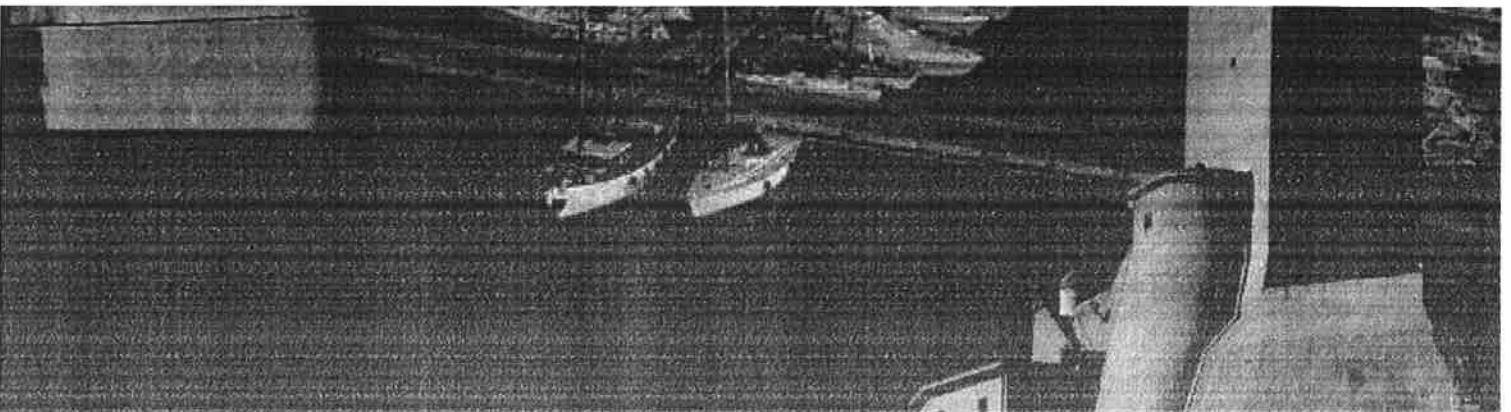
SIM 2017

Genova, Palazzo Ducale

27 - 30 settembre 2017



Abstract Book



P100**EFFECTS OF DIFFERENT MOUTHWASHES ON *CANDIDA ALBICANS* ADHESION, SUSCEPTIBILITY TO PHAGOCYTOTIC CELLS AND CAPACITY TO ELICIT PRO-INFLAMMATORY CYTOKINE RESPONSE**

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Introduction: Oral candidiasis is a frequent opportunistic fungal infection, occurring especially in susceptible individuals. This pathology, mainly associated with *Candida albicans* species, may be prevented by a good oral hygiene, including the daily use of toothbrush and mouthwashes (MoWs). Among several virulence factors, *C. albicans* has the ability to adhere to epithelial surfaces, to avoid phagocytosis and/or intracellular killing and to elicit proinflammatory cytokines production. We have previously demonstrated that both *C. albicans* hyphal development and biofilm formation/persistence are affected by MoWs, provided that they contain chlorhexidine digluconate (1). Therefore, in this study we aim to expand our knowledge on MoWs effects by investigating the behaviour of MoWs-treated *C. albicans*, in terms of adhesion to both abiotic and biotic surfaces, susceptibility to phagocytosis and capacity to elicit pro-inflammatory immune responses.

Materials and Methods: *C. albicans* SC5314 and 6 commercial MoWs have been employed: 4 with and 2 without chlorhexidine digluconate (CHX), a component known to have antibacterial and antifungal activity. Adhesion was assessed by a bioluminescent strain of *C. albicans* SC5314; MoWs-treated and PBS-treated fungal cells were incubated in 96-well plates containing or not a monolayer of TR-146 oral epithelial cell line; after 60 min, plates were washed and the residual bioluminescent signal recorded. Susceptibility to phagocytosis was assessed by exposing MoWs-treated and PBS-treated *C. albicans* to phagocytic cell line BV2 (effector:target = 1:2). Following 24 hours incubation of TR-146 cells with MoWs-treated and PBS-treated *C. albicans*, cytokine levels

in supernatants were measured.

Results: Adhesion of MoWs-treated *C. albicans* to abiotic surfaces was significantly lower than PBS-treated *Candida*. Adhesion of MoWs-treated *C. albicans* to TR-146 cells was significantly lower than PBS-treated *Candida*, in all but MoW 4. No differences could be highlighted in terms of susceptibility to phagocytosis (percent phagocytic cells and phagocytosis index) between MoWs-treated and PBS-treated *Candida*. On the contrary, significantly higher acidic phagolysosomes percentages were recorded from *Candida* treated with 4 out of 6 MoWs, with respect to PBS-treated fungi. Finally, *Candida* pretreatment with 4 out of 6 MoWs and 5 out of 6 MoWs impaired the production of IL-1a and IL-1b, respectively.

Discussion and Conclusions: *C. albicans* adhesion, susceptibility to phagocytosis and capacity to elicit pro-inflammatory cytokine response are affected by MoWs, especially those containing CHX. Thus, special attention should be used when choosing MoWs whether prevention and/or treatment of *Candida*-associated oral pathologies was intended.

Reference

1. Paulone et al. New Microbiol 2017.