

in these infections being the second most prevalent species involved in human fungemia. This work aims to understand the effect of antifungal agents in *C. glabrata*'s biofilm formation, specially their role on matrix composition.

Methods Three antifungal agents, belonging to different classes, azoles, polyenes and echinocandins, were selected for this work, namely fluconazole (Flu), Amphotericin B (AmB) and Caspofungin (Csf), respectively. Three strains of *C. glabrata* were used along this study. The effect of the agents on *C. glabrata* biofilm formation was assessed by Colony Forming Units (CFU) and Crystal Violet (CV) assays. Matrices' composition evaluation included the determination of polysaccharides (phenol-sulfuric acid method), proteins (BCA[®]-Kit) and β -1,3-glucans (GlucateLL[®] Kit) concentrations.

Results Observing the effect of the three drugs on the biofilms, it was noticed that AmB and Csf showed the best performance in the reduction of biofilms formed by the three *Candida glabrata* strains, in opposition to Flu. However, the effect of Csf was the most notorious, achieving a biofilm reduction around 85%.

Analyzing the biofilm matrices, it was possible to observe a significant change in their composition, when biofilms were formed in the presence of the three antifungal agents, both in terms of polysaccharides and proteins. In fact, in the presence of the different antifungal agents two opposite effects were noticed, the amount of polysaccharides increased, in opposition to the profound reduction in terms of proteins. For AmB and Csf this decrease was very significant, being below the minimum detected value range of the BCA[®] proteins Kit.

Interestingly, the amount of β -glucans on the matrices did not show important differences in the presence of the drugs, with the exception of Csf, which induced an increase of 20% of these compounds.

Conclusion As expected, the three agents had different effects on *C. glabrata*'s biofilm formation.

Moreover, matrices' composition display dissimilarities when exposed to different antifungal agents, and these differences depend on each drug is used.

Therefore, AmB, and especially Csf, were confirmed, in this study, to be the most effective pharmacotherapies for eradication of *C. glabrata* infections associated to biofilms.

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How do *Candida glabrata*'s biofilms respond to antifungal drugs?

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Objectives *Candida* species are responsible for recurrent human infections, mostly in immunocompromised patients, due to their high vulnerability. *Candida glabrata* has been shown to have a major role