

Medical and epidemiological impact of candidal biofilms, tridimensional architecture, and resistance

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Abstract

A hospital can be considered an ecosystem where the patient is found in contact with the microbial world and faces the risk of contracting an infection that is termed the nosocomial. Some opportunist pathogens yeast parts of this universe, candida sp., is responsible for more than 75% of systemic fungal infections. These infections are primarily related to medical devices such as catheters that promote the formation of biofilms. That structure sets up nests for disease because it is not easily amenable to conventional antifungal therapy. The diagnosis of catheter-related candidiasis is difficult; however, the differentiation between catheter infection and a simple contamination is essential to establishing an antifungal treatment. In this context, we conducted our study between February 2011 and January 2012 at the Hospital University Center of Sidi Bel Abbès (Algeria), which is to assess the responsible yeast species, then, to check their power to form biofilms and to test their resistance against amphotericin B and fluconazol. From 457 samples, 37 strains of candida sp. were isolated, along with the dominance of *C. glabrata*. Nevertheless, 31 strains were able to form biofilms; in addition, it appears from this study that the antifungal tests clearly show that sessile cells of candida sp. were much more resistant than their planktonic counterparts (32 times higher toward AmB and 128 times to fluconazole). Moreover, images of electron microscopy show the formation of biofilms on the internal surfaces of catheters.

Keywords: *candida sp*, *Biofilms*, *Resistance*, *SEM*

1. Declaration of conflicts

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2. Authors' biography

No Biography

3. References

No reference