

Biofilm forming capacity of yeasts colonizing the intravenous devices is considered a key factor involved in the pathogenesis of Candida catheter-related bloodstream infections (CCRBSI)” Brunetti et al (2017).

Abstract:

Biofilm forming capacity of yeasts colonizing the intravenous devices is considered a key factor involved in the pathogenesis of Candida catheter-related bloodstream infections (CCRBSI). The biofilm production of strains of *Candida* spp. isolated both from the CVC and from the blood of patients with CCRBSI was compared to that of strains isolated from patients not having CCRBSI.

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Results, expressed in terms of Biofilm Index (BI), revealed that biofilm-producing strains were isolated in the CCRBSI group with a frequency significantly higher than in the non-CCRBSI group ($\chi^2 = 4.25$, $p = 0.03$). The species more frequently cultured was *C. parapsilosis* complex (including *C. parapsilosis sensu stricto*, *C. orthopsilosis* and *C. metapsilosis*). When this species was isolated from the CVC tip cultures of the CCRBSI group it showed BIs significantly ($p = 0.05$) higher than those found in the non-CCRBSI group. All the strains of *C. tropicalis* isolated from the CCRBSI group produced biofilm. Instead most of the isolates of *C. glabrata* were non-producers. The cumulative BI of non-*albicans* *Candida* strains isolated from CCRBSI patients was significantly higher than that of non-*albicans* strains cultured from patients non-CCRBSI ($\chi^2 = 6.91$; $p = 0.008$). *C. albicans* was a biofilm producer both in the CCRBSI and in the non-CCRBSI group. When isolated from the blood it showed enhanced biofilm production in the CCRBSI group only, while when colonizing the CVC it displayed high BIs both in the CCRBSI group and in non-CCRBSI group. Our data seem to indicate that the biofilm production capacity should be considered in the clinical management of CCRBSI.

Reference:



Brunetti, G., Visconti, V., Ghezzi, M.C., Giordano, A. and Raponi, G. (2017) The Correlation Between Biofilm Production and Catheter Related Blood Stream Infections Sustained by Candida. A Case Control Study. *Advances in Experimental Medicine and Biology*. February 18th. .

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