CANDIDA BLOOD STREAM INFECTIONS IN A GREEK TERTIARY HOSPITAL: 5 YEARS SURVEY. EPIDEMIOLOGY AND IN VITRO ANTIFUNGAL SUSCEPTIBILITY PROFILES

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INTRODUCTION AND PURPOSE

During the last decades the rates of invasive *Candida* infections have increased dramatically. As *Candida* infections are associated with significant morbidity and mortality, monitoring of *Candida* species distribution among significant isolates and their antifungal resistance is required. A retrospective study was conducted between January 2011 and November 2015 at Evaggelismos General Hospital. The incidence of *Candida* species causing bloodstream infections and their susceptibility profiles were evaluated. The purpose of this study was to define the rate of *Candida* isolates among all positive blood cultures, species distribution between *C. albicans* and *C. non-albicans*, and antifungal susceptibility test among them.

METHODS

Records from the microbiology department were evaluated for the study period. All hospitalized patients who had ≥1 blood culture positive *Candida* were included in the study. Automated blood culture systems (BACTEC 9240, BD) were used. All isolates were speciated by the Vitek 2 system (Biomerieux, France). Susceptibility testing to amphotericin B, fluconazole, voriconazole, flucytocine, micafungin and caspofungin was performed by the Vitek 2 system and to anidulafungin by the E test (AB Biodisk, Sweden). Result interpretation was according to the CLSI guidelines (revised M27-S4).

CONCLUSION

Candidemia is a significant problem especially in medical wards. Early recognition and prompt empirical treatment are essential to improve outcomes of patients at risk for developing candidemia. Improvement of surveillance is crucial to recognizing emergence of highly resistant strains.

RESULTS

❖A total number of 7588 positive blood cultures were reviewed

❖ Fungi were cultured from 521 positive blood cultures (6,9%)

❖*Candida* species were found to be the fourth most common organism causing blood stream infections (BSIs)

❖Overall, *Candida* accounted for 6,9% of all BSIs - being responsible for 7,8% of BSIs in the intensive care unit and 5,7% of infections in non-ICU patients

❖*C. albicans* represented the most common isolate in non-ICU wards (47%)

❖*C. parapsilosis* represented the most common isolate in ICU (44%)

❖All *Candida albicans* isolates were susceptible to azoles and candines (Table1)

Table1. Susceptibility profiles of *Candida* spp from 2011 to 2015

% susceptibility	MIC range	*Candida albicans*	*Candida parapsilosis*	*Candida glabrata*	*Candida tropicalis*
Amphotericin B	0.25-0.5	99%	98%	99%	99%
Fluconazole	1-32	97%	MIC>4=27%	MIC_{90}=8μg/l	95%
Flucytocine	1-4	99%	99%	99%	99%
Voriconazole	0.25-1	99%	94%	99%	99%
Caspofungin	Average	0.125	1	0.125	0.125
Micafungin	Average	0.125	1	0.006	0.125
Anidulafungin	Average	0.125	2	0.125	0.125

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