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ePoster Viewing

Antifungal drug susceptibility and resistance

Candidaemia in Bulgaria: an open follow-up multicentre survey

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Objectives: In the beginning, the aim of this study was to evaluate for a 6-year period (2008-2013) the *Candida* blood culture isolates distribution and antifungal susceptibility in selected Bulgarian hospitals. Now we are expanding the number of participating hospitals and include new antifungal agents.

Methods: A total of 745 *Candida* yeast isolates, including 337 *Candida albicans*, 185 *C. parapsilosis*, 102 *C. glabrata*, 49 *C. tropicalis*, 32 *C. krusei* and other *Candida non-albicans* strains identified by API 20 AUX and VITEK 2 automated system (BioMerieux, France) were tested. The isolates were recovered from blood culture in hospitalized patients (in ICU- intensive care units, organ transplantation, hematology, neonatology, with trauma, surgery or other disease).

Minimal inhibitory concentrations (MICs) were determined by E-test agar diffusion method with the use of E-test strips (AB Biodisk) which were applied to Muller-Hinton agar plates after 24 and 48 h incubation at 35°C for anidulafungin, caspofungin, voriconazole, itraconazole and fluconazole. Our study is a part of Bulgarian surveillance programme (BulSTAR), which monitors the etiology of infections and the susceptibility to antimicrobial agents in Bulgaria.

Results: The most frequently isolated species was *C. albicans* (45%), followed by *C. parapsilosis* (25%), *C. glabrata* (14%), *C. tropicalis* (7%), *C. krusei* (4%), and other *Candida non-albicans* strains (5%).

Low susceptibility to fluconazole was detected among *C. albicans* (3%, MIC>256 mg l⁻¹), *C. glabrata* (29%, MIC16-32 mg l⁻¹; 27% MIC>64 mg l⁻¹), *C. krusei* (28%, MIC32-64 mg l⁻¹; 72%, MIC>256 mg l⁻¹). No resistance to fluconazole, itraconazole and voriconazole was detected in *C. parapsilosis* and *C. tropicalis*. Resistance to voriconazole was detected only in *C. glabrata* and *C. krusei*. Higher MICs were determined for anidulafungin and caspofungin against *C. parapsilosis*

Conclusion: The data from BulSTAR showed that for the period of 2008 to 2013 *Candida* strains are on the fifth place from all bloodstream isolates and showed an increase from 1.7% to 5.2%.

This study confirmed the high percentage of isolated *C. non-albicans* strains, especially *C. parapsilosis*. An important concern is the low fluconazole susceptibility detected in *C. glabrata* and *C. krusei*. Anidulafungin and caspofungin showed good activity against *C. glabrata* and *C. krusei*, which were resistant to fluconazole and voriconazole.