Challenging Clinical Scenario of Blood Stream Candida Infections – An Indian Experience

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Abstract : Introduction: Candida is an important cause of bloodstream infections (BSIs), causing significant mortality and morbidity. The epidemiology of Candida infection is also changing, mainly in relation to the number of episodes caused by species Candida non-albicans. However, in India, the true burden of candidemia is not clear. Thus, this study was conducted to evaluate the clinical characteristics, species distribution, antifungal susceptibility and outcome of candidemia at our hospital. Methodology: Between January 2012 and April 2014, adult patients with at least one positive blood culture for Candida species were identified through the microbiology laboratory database (for each patient only the first episode of candidemia was recorded). Patient data was collected by retrospective chart review of clinical characteristics including demographic data, risk factors; species distribution, resistance to antifungals and survival. Results: A total of 165 episodes of Candida BSI were identified, with 115 episodes occurring in adult patients. Most of the episodes occurred in males (69.6%). Nearly 82.6% patients were between 41 to 80 years and majority of the patients were in the intensive care unit (65.2%) at the time of diagnosis. On admission, 26.1% and 18.3% patients had pneumonia and urinary tract infection, respectively. Majority of the candidemia episodes were found in the general medicine department (23.5%) followed by gastrointestinal surgery (13.9%) and medical oncology & haematology (13%). Risk factors identified were prior hospitalization within one year (83.5%), antibiotic therapy within the last one month (64.3%), indwelling urinary catheter (63.5%), central venous catheter use (59.1%), diabetes mellitus (53%), severe sepsis (45.2%), mechanical ventilation (43.5%) and surgery (36.5%). C. tropicalis (30.4%) was the leading cause of infection followed by C. parapsilosis (28.7%) and C. albicans (13%). Other non-albicans species isolated included C. haemulonii (7.8%), C. glabrata (7%), C. famata (4.3%) and C. krusei (1.7%). Antifungal susceptibility to fluconazole was 87.9% (C. parapsilosis), 100% (C. tropicalis) and 93.3% (C. albicans). Mortality was noted in 51 patients (44.3%). Early mortality (within 7 days) was noted in 32 patients while late mortality (between 7 and 30 days) was noted in 19 patients. Conclusion: In recent years, candidemia has been flourishing in critically ill patients. Comparison of data from our own hospital from 2005 shows a doubling of the incidence. Rapid changes in the rate of infection, potential risk factors, and emergence of non-albicans Candida demand continued surveillance of this serious BSI. High index of suspicion and sensitive diagnostics are essential to improve outcomes in resource limited settings with emergence of non-albicans Candida.

Keywords : antifungal susceptibility, candida albicans, candidemia, non-albicans candida
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