

Commentary: "Candidemia in tertiary hospitals in northeastern Brazil"

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The article "Candidemia in tertiary hospitals in northeastern Brazil" is devoted to an important problem in tertiary hospitals where there is the availability of all kinds of super specialities. Candida infections have increased significantly in recent decades and this has been associated to the rise of morbidity and mortality in critically ill patients, as well as elevated hospital costs and the extending of the hospitalization period^{1,2}. Candidemia is responsible for almost 80% of all hospital related fungal infections, known as *Candida* spp. and it is a common isolated pathogen that leads to nosocomial Sepsis in adults and frequently in neonates (newborns)²⁻⁶.

The main risk factors associated with candidemia are: prolonged hospital stays, neutropenia, parenteral nutrition, bladder / central venous catheters, mechanical ventilation, the colonization of multiple anatomical sites by yeasts, extreme ages (infants with less than one year or in the elderly of older than 65 years) and also the use of broad-spectrum antibiotics^{7,8}.

In a 20-year period of study in a Brazilian tertiary care teaching hospital, it was observed that the incidence of candidemia did not change significantly over time³. The results showed that there was a slight increase in the median age of patients with candidemia and the occurrence of some factors such as mechanical ventilation and the use of vasoactive amines and corticosteroids increased over time³. The severity of illness increased, and the mortality was high, and did not change significantly in the three study periods³.

The species distribution did not change over time, with *C. albicans*, *C. tropicalis* and *C. parapsilosis* accounting for over 80% of cases of candidemia, and the proportion of patients receiving antifungal therapy increased between periods 1 and 2. The time from candidemia to the initiation of treatment decreased over time, leading to a change in therapeutic practices, with a reduction in the use of deoxycholate amphotericin B and an increase in the use of echinocandins as primary therapy³.

Candida albicans continues to be the most frequent cause of candidemia at large tertiary hospitals but antifungal resistance is a growing concern taking into account *non-albicans Candida* species⁵.

An epidemiologic study of candidemia in Latin America showed a high incidence of candidemia, high percentages in children, typical species distribution, with *C. albicans*, *C. parapsilosis* and *C. tropicalis* accounting for the majority of episodes, and low resistance rates⁹. Prognostic factors and historical trends in the epidemiology of candidemia in critically ill patients of five Brazilian multicenter studies over a 9-year period showed a 30-day crude mortality rate

of 75.3 % in the public hospitals and 65.3 % in private institutions ($p = 0.006$) and its incidence rate in Brazil averages 2.49 per 1000 hospital admissions^{9,10}. In the northeast region of Brazil, the matter becomes even more alarming as there are few published studies^{4,11-13}.

In this framework, our studies have been focused on understanding candidemia in tertiary hospitals in northeastern Brazil. We conducted a prospective, observational, laboratory-based study on candidemia to investigate the incidence of candidemia, species distribution and clinical conditions between September 2003 and March 2004 in a private tertiary hospital in Recife, northeastern Brazil. Cases of candidemia were defined as occurrences of the isolation of *Candida* spp. from blood cultures. In these studies, *Candida* isolates were not identified using molecular methods^{11,12}. The incidence rate was calculated per 1,000 admissions. A total of 5,532 patients were admitted to the hospital during the study period, and 1,745 blood cultures were processed¹¹. The incidence rate of candidemia was 3.9 episodes per 1,000 admissions¹¹. Non-*albicans* species accounted for more than 50% of the cases, and *Candida parapsilosis* (33%) and *Candida tropicalis* (24%) predominated. Eleven (61%) patients died¹¹. The incidence of candidemia was higher than that observed in other multicenter studies^{11,13-15}. Candidemia was caused predominantly by non-*albicans* species^{11,12}.

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