

R546

Publication Only

Mycology: Fungal infections

A study of the risk factors for candidaemia - a case-control study

N. Agrawal¹, S. Prasad¹, M. Varma¹, S. Vidyasagar¹

¹Department of Internal Medicine, Kasturba hospital Manipal, Manipal Karnataka, India

BACKGROUND: Nosocomial infections are an important cause of morbidity and mortality in ICU patients. Fungal infections especially Candidemia are common nosocomial bloodstream infections. This study is conducted to assess the clinical profile and risk factors of patients with Candidemia.

STUDY DESIGN: Case control study

OBJECTIVE: To determine the risk factors for candidemia.

METHODS: We analyzed 99 episodes of candidemia at Kasturba Hospital, Manipal- a tertiary care, 2032 bedded hospital in South India from June 2011 to May 2013.

All patients aged ≥ 18 years and satisfying the criteria for candidemia were included in the study. Candidemia was defined as the isolation of a *Candida* spp. from at least 1 blood culture. Cases were the patients with candidemia. Controls were adult patients without candidemia and they were matched with cases with respect to age, sex, type of ICU and duration of ICU stay prior to the development of candidemia.

The chi-squared test or Fisher's exact test were used to compare categorical variables, and Student's t-test was used to compare continuous variables. Two-sided p-values of < 0.05 were considered statistically significant. Statistical analysis was performed using SPSS version 16.0.

RESULTS: Total of 99 patients were included in this study. Average age of the patients in the study was 47 years with 48% males. On univariate analysis, the following risk factors were found to be significant: presence of central venous catheter (CVC) (81% vs. 61%; $p = 0.001$); duration of antibiotic therapy >1 week (84% vs. 63%; $p = 0.01$); number of antibiotics ≥ 3 (90% vs. 55%; $p = 0.0001$); TPN (16% vs. 8%; $p = 0.02$); abdominal surgeries (16% vs. 6%; $p = 0.003$); hematological malignancy (8% vs. 1%; $p = 0.01$); corticosteroid use (19% vs. 5%; $p = 0.002$); blood transfusions (75% vs. 42%; $p = 0.0001$) and urinary tract colonization by candida species (19% vs. 5%; $p = 0.001$). On multivariate analysis, presence of CVC, multiple blood transfusions >5 , number of antibiotics ≥ 3 and urinary tract colonization by candida species were found to be significant. Average duration of ICU stay was 16.3 days. Average duration of broad spectrum antibiotic use was 12.6 days prior to development of Candidemia. The most common species grown in culture was *Candida tropicalis* (45%). *Candida albicans* was associated with only 11% of cases. All of the *Candida* isolates were sensitive to fluconazole. 57% of the patients received treatment.

CONCLUSION: Candidemia is to be considered as an important cause of morbidity and mortality in ICU patients especially those with prolonged ICU stay, broad spectrum antibiotic use, presence of central venous catheters, mechanical ventilation and those in severe sepsis. Non-Albicans species were more common than Albicans species. However all of the isolates were sensitive to fluconazole.