

R545

Publication Only

Mycology: Fungal infections

Mixed candidaemia and bacteraemia: a case-control study

S. Prasad¹, M. Varma¹, S. Vidyasagar¹

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

BACKGROUND: Mixed candidemia and bacteremia have been reported to occur in more than 23% of all episodes of candidemia. However, the clinical implications of mixed infections are not well known.

STUDY DESIGN: Case control study

OBJECTIVE: To assess the frequency, risk factors and outcomes of mixed blood stream infections due to *Candida* and bacteria.

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. Mixed infection was defined as the isolation of both *Candida* and bacteria from a single set or different sets of blood cultures obtained within a 48 hours period.

Cases were the patients with mixed infection and controls were patients with only candidemia. Cases were compared with controls with respect to risk factors and outcome.

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: Mixed infection was detected in 29 of 99 episodes of candidemia (29.3%). The bacteria identified were: 10 due to Gram-positive (enterococci in 5 and staphylococci in 4) and 19 due to Gram-negative (*Klebsiella pneumoniae* in 7, *Pseudomonas aeruginosa* in 5 and *Acinetobacter* in 4). Cases tended to have had a previous hospital stay of ≥ 4 weeks (48% vs. 23%; $p = 0.01$). Prior antibiotic use for ≥ 14 days was associated with a lower chance of having mixed infection (63% vs. 81%; $p = 0.04$). Cases were more likely than controls to have central venous catheters (81% vs. 57%; $p = 0.03$) and receive blood transfusions (76% vs. 41%; $p = 0.001$). There was no difference in the distribution of *Candida* species in the two groups. The 30-day survival of patients with and without mixed infection was 10.3% and 34.2%, respectively ($p=0.009$).

CONCLUSION: Our data show that mixed candidemia and bacteremia are relatively frequent (29%) and are associated with a poor prognosis. Further studies on the clinical relevance of species-specific *Candida*-bacterial interactions are needed.