Candida auris candidemia in COVID-19 and post-COVID-19 patients in a tertiary care hospital in North India

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Background: The outbreak of COVID-19 pandemic affected many healthcare systems and the patients with critical illness and malignancies were at a high risk of opportunistic infections. In India, there is a significant increase in the Candida auris cases in both, critically ill and immunocompromised patients. It was the first time, in India, a fungal species acquired by healthcare-associated infections was reported.

Aims and Objectives: To study the risk factors associated with C. auris candidemia in COVID-19 and post-COVID-19 patients at tertiary care center.

Materials and Methods: We prospectively analyzed all positive blood samples which were received in the Microbiology department at SGPGI, Lucknow for a period of 1 year (March 2020-March 2021). Blood samples were inoculated and cultured in BACTEC bottles (BD) and incubated for 5 days at 37°C. The bottles which flagged positive, a Gram’s stain was performed and were sub-cultured on SDA for isolation of colonial variants. Isolated variants were identified by phenotypic method and confirmed by MALDI-TOF MS. Demographics details of the patients were collected and recorded.

Results: A total of 11,000 blood samples were received during the 1-year study period from different departments of the hospital. 21.5% (n = 163) of the blood culture samples were positive for candida. Out of 163 Candida culture-positive blood samples, 27.41% (n = 45) were C. auris. A total of 44% (n = 29) C. auris cases were seen in non-COVID-19 patients, 31.1% (n = 14) in COVID-19 patients, and two patients had a history of post-COVID-19 infection. The associated risk factors included the use of broad-spectrum antibiotics, intravenous catheterization, underlying respiratory illness, mechanical ventilation, use of narcotics, and diabetes. A total of 46.4% (n = 21) mortality was seen with C. auris candidemia.

Conclusions: Candida auris candidemia continues to be a threat in hospitalized patients. This study shows prevalence of C. auris candidemia in COVID-19 and post-COVID-19 patients with 47% mortality. Candida auris is continuously reported from different departments in our institute, especially from intense care units with high mortality and morbidity. An alarm, awareness, and infection control practices by the healthcare personnel will help in early diagnosis and appropriate antifungal therapy and control the spread of C. auris.

Echinocandin resistance is a growing epidemic in Candida auris infections, leading to increased morbidity and mortality. This study highlights the importance of early diagnosis and appropriate antifungal therapy in managing these infections.