Monitoring of candida colonization in the respiratory tract of COVID-19 cases

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Objective: Opportunistic yeasts potentially cause infection or colonization in the lower respiratory tract. Candida albicans is a common agent of yeast infections but other yeasts such as non-albicans Candida are important as resistant fung to antifungal drugs. The predisposing factors for the overgrowth and invasion by Candida species include contaminated therapies, long-time hospitalization, antibiotic therapies, and primary infections by Mycobacterium tuberculosis and viral agents. The screening of Candida colonization in the lower respiratory tract of the cases with a history of COVID-19 was performed in this study at a training hospital in Northeast of Iran.

Methods: During the pandemic COVID-19, about 441 cases with severe COVID-19 hospitalized and used dekanethane were investigated for Candida infections and colonization by the laboratory data of the Medical Mycology Centre, UMRS University, Iran. Our subjects were patients, bronco-alveolar and bronchial specimens. Candida elements including pseudo-hypha and Blasto-spores microscopically were investigated. Differential cultures and PCR-RFLP were used for the identification of Candida yeasts at the level of species.

Results: Total, 54 years-old patient was detected in the clinical specimens including Candida albicans 28 (51.8%), non-albicans Candida species 24 (44.4%) and a case of Panencysta terrestris. All of the cases with Candida detection were COVID-19 positive. Moreover, two cases of rhino-cerebral mucosporiosis, two cases of TB, two cases of asbian, and one case of cistic fibrosis were included.

Conclusion: As a conclusion, Pali especially Candida yeasts be considered as the potential pathogens in cases with a history of severe COVID-19 and contaminated therapy during stay at the hospital.

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

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Introduction: Candida auris accounts for 75%-80% of invasive bloodstream fungal infections. It is most commonly spread in long-term care facilities, caring for people with severe medical conditions. Patients hospitalized for COVID-19 are at risk for healthcare-associated infections like candidemia. Candida auris is an emerging, multidrug-resistant, healthcare-associated fungal pathogen. Candida auris is currently one of the most common clinical fungal pathogens, causing nosocomial infection.

Due to its higher drug-resistant rate, it requires longer hospitalization periods, and results in higher morbidity and mortality than other Candida species.

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

Material 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 SDM for isolation of yeasts colony. Isolated yeasts were identified by phenotypic method and confirmed by MALDI-TOF MS. Demographic details of the patients were collected and recorded. The significant associated risk factors included the use of broad-spectrum antibiotics, intravenous catheterization, underlying respiratory illness, medical ventilation, use of steroids, and diabetes. A total of 46.6% (n = 21) mortality was seen with C. auris candidemia.

Conclusion: 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 47.6% mortality. Candida auris is continuously reported from different departments in our institute, especially from intensive care units with high morbidity and mortality.

A thorough, 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.