

Title: The Double Whammy: An Epidemic of Mucormycosis During the COVID-19 Pandemic: Case Reports and a Global Review

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ABSTRACT

Background: During the COVID-19 pandemic, the epidemic of mucormycosis posed a double whammy as a significant global public health threat. Rhino-orbital-cerebral mucormycosis (ROCM), a highly invasive and fatal form of this opportunistic fungal disease, is known to cause high morbidity and mortality in COVID patients especially in those with Diabetes mellitus (DM), malignancy, transplantations, neutropenia etc.

Objective: To compile and analyze case reports of COVID associated mucormycosis from two different tertiary care hospitals in India and provide a systematic global review.

Methods: Data were drawn from the hospital records of COVID patients admitted with rhinocerebral mucormycosis with regards to their demographics, presence of co-morbidities, COVID status, treatment received and disease outcomes. Additionally, the electronic databases including PubMed, Google scholar and Embase were reviewed for articles published from across the world.

Results: Among the ROCM patients, four died of sepsis, five required oculoplasty, and three recovered without complications. Most had diabetes mellitus and needed surgical intervention along with Amphotericin B administration. Literature review revealed that majority of the cases of COVID-19 with ROCM were encountered in India. Most patients were elderly and had diabetes mellitus as a significant co-morbidity. Among several factors to be considered, good glycemic control, regulated use of steroids in appropriate doses, proper sanitization and handling of oxygen gas cylinders, proper decontamination of hospital environment and avoidance of overzealous use of steam inhalation and non-humidified oxygen have been proposed as important measures to control this epidemic.

Conclusion: The epidemic of mucormycosis with COVID-19 pandemic, is a significant global public health threat. The deadly fungal infection is both difficult and expensive to treat. Measures to control this epidemic include good glycemic control in DM patients; regulated use of steroids in appropriate doses; proper sanitization and handling of oxygen gas cylinders; proper decontamination of hospital environment, and the avoidance of overzealous use of steam inhalation and non-humidified oxygen.

BIOGRAPHY

Dr. Pai is associated with Touro University College of Osteopathic Medicine, California, as a Professor of Microbiology and the Global Health Program coordinator. Her experience spans 27 years of teaching at medical schools in India, Nepal, the Caribbean islands, and the US in addition to directing diagnostic microbiology laboratories and conducting research. Her research interests include multi-drug resistant pathogens, tuberculosis, COVID related global health issues and medical education.



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