

## Mucormycosis: An Effect of Fungal Infection in Coronavirus Patients

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### DESCRIPTION

Individuals with coronavirus are known to develop mucormycosis. It is an independent risk factor for both severe COVID-19 and mucormycosis, particularly in patients with Diabetes Mellitus (DM). When linked with immunocompromised conditions (such as corticosteroid medication, ventilator, and intensive care unit stays), mucormycosis is a potentially fatal bacterial and fungal infection. Patients with this condition are more likely to acquire severe opportunistic infections. The majority of cases had pre-existing Diabetes Mellitus (DM), while 15% also had concomitant Diabetic Ketoacidosis (DKA). In 75% of instances, intake of corticosteroids was documented for the treatment of COVID-19. The most frequent type of mucormycosis was rhino-orbital, followed by sinus-related. Males were more frequently affected by mucormycosis, also known as "the black fungus", in both coronavirus-active and coronavirus-recovering individuals.

Mucormycosis, formerly known as Phycomycosis or Zygomycosis, is an aggressive infection brought on by Rhizopus, a member of the "Mucorales" fungus family. This family of fungi is typically found in the environment, such as soil, and is frequently connected to decaying organic matter like fruit and vegetables. There are several different kinds of this uncommon fungus infection, including gastrointestinal, pulmonary, disseminated, cutaneous, and rhino-orbito-cerebral. The most frequent cause of infections in people is the Rhizopus oryzae.

The main factor that appears to hasten Mucorales spore germination in COVID-19 patients. Immune system function can be compromised by the use of medications that suppress the immune system, such as corticosteroids. After trauma or surgery, damaged tissue may develop, which is the root of human disease. Damaged tissue thrives at body temperature and in acidic surroundings. Fungal spores are inhaled as the mode of

contamination. We inhale the spores of several fungi every day, and healthy fungi usually stop them from spreading an infection.

### Prevention of mucormycosis

- By inhaling spores
- By swallowing spores found in food or medications
- Spore contamination of wounds

The nose and sinuses are the most prevalent sites of mucormycosis infection, while it can also manifest in the lungs, and it can move to the brain, where it may result in migraines or seizures, or to the eyes, where it may result in blindness. Even a brief course of steroid medication seldom results in mucormycosis, especially in patients with diabetes mellitus. A temporal course of fewer than four weeks and the presence of hyphal invasion of sinus tissue distinguish mucormycosis. Clinically, rhinocerebral mucormycosis can exhibit atypical symptoms that resemble complicated sinusitis, including crusting, nasal obstruction, proptosis, facial pain and oedema, chemosis, ptosis, and even ophthalmoplegia. If intracranial extension is present, additional neurological symptoms such as headache and fever may also be present. Although not typical, a black eschar is frequently observed in the nasal cavity or over the area of the hard palate. Mycotic infiltration of blood vessels, vasculitis with tissue infarction, thrombosis, haemorrhage, and acute neutrophil infiltrate are some of the histological characteristics.

The importance of early diagnosis and intervention cannot be overstated. This includes medication to treat the fungal infection, prompt removal of dead tissue, and blood sugar control. Therefore, it is important to be aware that COVID-19 patients, especially those who are very unwell, can develop additional fungal infections during the middle and late phases of this disease.

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