

# BLACK FUNGUS- A Developing Emergency

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## Abstract

Previously called zygomycosis, mucormycosis is a rare fungal infection caused by a group of molds called mucormycetes. Black fungal infection, triggered by covid19 leads to blackening or discolouration over the nose, blurred or double vision, chest pain, breathing difficulties mostly in diabetic patients. The infection start from the nose and spread to eyes symptom like fever vomit etc. However mucormycosis is not contagious but those with uncontrolled diabetes and on steroids medication to survive covid-19 complications are worst affected. This review focuses on black fungal infection and its symptoms, causes, treatment and preventive measures.

## Introduction

**M**ucormycosis is simply known as black fungus disease or black fungal disease. Group of moulds called mucormycetes that are found throughout the natural environment are the causative agents. It affects the sinuses, lungs, skin and brain frequently. Black fungus or mucormycosis causes disease and death of patients in transplants, ICUs and immunodeficient patients for since long. The people who are on medication for other conditions, especially diabetes, that reduce their ability to fight environmental pathogens are more prone to this disease. It affects the sinuses or lungs of individuals after inhalation of fungal spores are from the air. Fever, headache, coughing, breathlessness, blood vomits and altered mental status are the warning symptoms. Moreover, face, nose, the orbit of the eye, or brain are also affected which can cause even vision loss. Maharashtra has recorded over 2,000 cases, 97 in Karnataka and 40 in Gurugram.

### **Cause of Mucormyiasis**

It is a complication occur due to fungal infection and affect people who come in contact with fungal spores present in the environment. It can also develop on the skin when fungus enters the skin through a cut, scrape, burn, or other types of skin trauma. It is also reported in the covid-19 patients who are recovering or have recovered as well as diabetic patient with low immune system.

### **Why is it affecting covid-19 patients?**

Diabetic patients are anyway at high risk of contracting covid-19. For their treatment steroids are used which further compromises immunity. Doctors in India observed that steroids being used as a life-saver treatment for severe and critically ill covid-19 patients, can also proved to be a trigger for mucormycosis. Along with reducing inflammation in lungs steroids can decrease immunity and increase blood sugar levels in both diabetics and non-diabetic covid-19 patients. Whereas, patients with prolonged ICU, cancer, comorbidities, post organ transplant are also at high risk of mucormycosis.

### **What are the symptoms of mucormycosis?**

According to ICMR, sinusitis (nasal blockage or congestion), blackish/bloody nasal discharge and pain on the cheek bone. Along with, one sided pain at the face, numbness or swelling, blackish discolouration over the bridge of nose/palate, teeth loosening, blurred or double vision with pain, fever, skin lesion, blood clot, and chest pain are the other warning symptoms.

### **What precautions can patients take?**

Hyperglycemia should be controlled by regularly monitoring the blood glucose level post discharge of Covid-19 patients. Blood glucose levels of diabetic patients should be monitored. It has been advised by the doctors to use antibiotics, antifungals and steroids judiciously. Sterile water for humidifiers during oxygen therapy should be preferred by the hospitals. Treatment should be initiated as early as possible after observing warning symptoms.

### **What is the treatment of mucormycosis?**

It is important to control diabetes and diabetic ketoacidosis and reduce steroids or immunomodulating drugs in case the patient is still on them and discontinue rapidly. Surgery can be preferred for removing all necrotic (dead) material. Along with this,

antifungal therapy has also been advised for at least a period of four to six weeks. Liposomal amphotericin B or LAMB as a medical intervention in patients of mucormycosis

### **Preventions**

- 1- Using of mask at dusty construction site which are highle prone areas for fungal spores.
- 2-Wear shoes, long trousers, long sleeve shirts and gloves while handling soil or any other related work.
- 3- Personal hygiene should be maintained properly.
- 4- diabetes should be monitored or controlled timely.

### **Do's**

- Hyperglycemia should be controlled
- It is important to monitor blood glucose level post-COVID-19 discharge and also in diabetes.
- Use steroid judiciously
- Use antibiotics/antifungals judiciously

### **Don'ts**

- Do not avoid warning symptoms
- Do not consider all the cases with blocked nose as cases of bacterial sinusitis especially COVID-19 patients on immunomodulators
- Initiate treatment for mucormycosis timely.

After recovering from coronavirus, it is required to closely monitor and should not miss any warning symptoms mentioned above, as the fungal infection is found to emerge even weeks or months after recovery.

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