



Black fungus

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Black fungus, in medical terms known as Mucormycosis, is a rare yet serious fungal infection that predominantly affects immunocompromised individuals. It has gained recent recognition due to its occurrence amongst patients who suffered from COVID 19 wherein the Indian government had reported more than 11,700 people receiving treatment for Mucormycosis as of May 2021. The fungal infection being aggressive is also potentially life-threatening.

Signs And Symptoms

Depending on the site of infection, black fungus shows diverse symptoms. The site of the infection along with the symptoms associated are as follows:

1. Brain and Sinus (Rhino cerebral Mucormycosis): When black fungus affects the brain and sinus the following symptoms are most seen:

- Headache
- One-sided facial swelling
- Fever
- Black lesion on the nasal bridge or on inside the mouth over the palate.

- Nasal or sinus congestion
- Facial numbness/pain
- Runny nose or nasal congestion
- Loss of smell
- Blurred vision
- Swollen or bulging eye.

2. Lungs (Pulmonary Mucormycosis)

When it affects the lungs the following symptoms are seen:

- Fever
- Cough
- Chest pain
- Shortness of breath
- Blood in cough

3. Skin (Cutaneous Mucormycosis)

Black fungus affecting an area of the skin that has a cut or wound gives rise to the following symptoms:

- Excessive swelling or redness around a wound
- Blisters or ulcers
- Pain

4. Stomach (Gastrointestinal Mucormycosis)

When it affects the gastrointestinal tract, the following symptoms are seen:

- Abdominal pain
- Nausea and vomiting
- Gastrointestinal bleeding

5. Miscellaneous (Other parts)

The infection can spread to various other parts of the body through blood. This is seen less commonly.

Causes

Mucormycosis is caused by a group of fungi called mucormycetes. Mucormycetes are found almost everywhere, in air, water, soil and even food. They belong to the order- Mucorales and Rhizopus and Mucor are the most common species that cause Mucormycosis.

The Indian Council of Medical Research advisory stated that the following predisposing factors amongst Covid 19 patients increased the risk of developing Mucormycosis:

- Prolonged use of steroid
- Uncontrolled diabetes mellitus
- Prolonged hospital stays
- Post organ transplant, cancer, co-morbidities
- Voriconazole therapy.

Diagnosis

Diagnosis of Mucormycosis consists of mainly the following:

- Taking a thorough medical history of the patient.
- Recording the symptoms.
- Physical examination.
- Lab tests.
- CT scan of lungs or sinus.
- Collection of a fluid sample from the respiratory system
- Tissue biopsy.

Treatment

- Intravenous antifungal medications are given to the patient such as Amphotericin B, Posaconazole and Isavuconazole for 4-6 weeks. Infusion of normal saline is done before the infusion of Amphotericin B.
- Surgery is done to remove the infected tissue.

- Adequate systemic hydration is to be maintained.
- Install peripherally inserted central catheter (PICC)
- To detect the disease progression, radio imaging is done.

Prevention

- Use of face masks to avoid inhaling fungal spores especially at construction or excavation sites.
- Wearing appropriate clothing such as full sleeve shirts, long trousers, shoes, face masks and gloves while gardening or when handling soil or manure.
- Scrub baths to be taken timely as an adjunct to the maintenance of personal hygiene.
- Avoid damp places where fungi grow and flourish.

Prognosis

- The prognosis of Mucormycosis is fair to poor. It has a mortality rate of 50% which can rise to 85% in the case of Rhino cerebral and Gastrointestinal Mucormycosis

Precautions to be taken especially during covid 19 as advised by ICMR.

- Monitoring glucose levels especially in patients who have been discharged post-COVID 19 treatment and in diabetic patients.
- Judicious use of steroids is to be done by following the correct time, dose, and duration of steroid usage. Self-medication of steroids should be avoided as far as possible. Regular monitoring of blood sugar levels to be done in patients receiving steroids.
- For patients on oxygen therapy, thorough cleaning of the humidifier should be done to avoid the breeding of fungus.
- Maintenance of thorough personal hygiene.
- Masks should be disinfected daily.
- Good oral hygiene should be maintained.