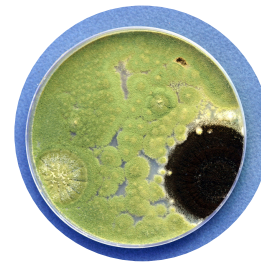
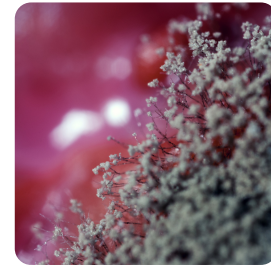


EVIDENCE BASED ADVISORY IN THE TIME OF COVID-19

(Screening, Diagnosis & Management of Mucormycosis)

Mucormycosis - if uncared for - may turn fatal

Mucormycosis is a fungal infection that mainly affects people who are on medication for other health problems that reduces their ability to fight environmental pathogens.



Sinuses or lungs of such individuals get affected after fungal spores are inhaled from the air.

This can lead to serious disease with warning sign and symptoms as follows:

- Pain and redness around eyes and/or nose
- Fever
- Headache
- Coughing
- Shortness of breath
- Bloody vomits
- Altered mental status



What predisposes

- Uncontrolled diabetes mellitus
- Immunosuppression by steroids
- Prolonged ICU stay
- Co-morbidities - post transplant/malignancy
- Voriconazole therapy

How to prevent

- Use masks if you are visiting dusty construction sites
- Wear shoes, long trousers, long sleeve shirts and gloves while handling soil (gardening), moss or manure
- Maintain personal hygiene including thorough scrub bath

When to Suspect

(in COVID-19 patients, diabetics or immunosuppressed individuals)

- Sinusitis - nasal blockade or congestion, nasal discharge (blackish/bloody), local pain on the cheek bone
- One sided facial pain, numbness or swelling
- Blackish discoloration over bridge of nose/palate
- Toothache, loosening of teeth, jaw involvement
- Blurred or double vision with pain; fever, skin lesion; thrombosis & necrosis (eschar)
- Chest pain, pleural effusion, haemoptysis, worsening of respiratory symptoms

Dos

- Control hyperglycemia
- Monitor blood glucose level post COVID-19 discharge and also in diabetics
- Use steroid judiciously - correct timing, correct dose and duration
- Use clean, sterile water for humidifiers during oxygen therapy
- Use antibiotics/antifungals judiciously

Don'ts

- Do not miss warning signs and symptoms
- Do not consider all the cases with blocked nose as cases of bacterial sinusitis, particularly in the context of immunosuppression and/or COVID-19 patients on immunomodulators
- Do not hesitate to seek aggressive investigations, as appropriate (KOH staining & microscopy, culture, MALDI-TOF), for detecting fungal etiology
- Do not lose crucial time to initiate treatment for mucormycosis

How to manage

- Control diabetes and diabetic ketoacidosis
- Reduce steroids (if patient is still on) with aim to discontinue rapidly
- Discontinue immunomodulating drugs
- No antifungal prophylaxis needed
- Extensive Surgical Debridement - to remove all necrotic materials
- Medical treatment
 - Install peripherally inserted central catheter (PICC line)
 - Maintain adequate systemic hydration
 - Infuse Normal saline IV before Amphotericin B infusion
 - Antifungal Therapy, for at least 4-6 weeks (see the guidelines below)
- Monitor patients clinically and with radio-imaging for response and to detect disease progression

Team Approach Works Best

- Microbiologist
- Internal Medicine Specialist
- Intensivist
- Neurologist
- ENT Specialist
- Ophthalmologist
- Dentist
- Surgeon (maxillofacial/plastic)
- Biochemist

Detailed management guideline & information available on the following

Global guideline for the diagnosis and management of mucormycosis: an initiative of the European Confederation of Medical Mycology in cooperation with the Mycoses Study Group Education and Research Consortium. Lancet Infect Dis. 2019 Dec;19(12):e405-e421. doi: 10.1016/S1473-3099(19)30312-3.

https://www.ijmr.org.in/temp/IndianJMedRes1533311-3965147_110051.pdf



https://www.ijmr.org.in/temp/IndianJMedRes1392195-397834_110303.pdf



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