

# All India Institute of Medical Sciences, New Delhi

## Covid-19 Infection and Rhino-orbito-cerebral Mucormycosis

### Treatment Organization & Guidance



#### ORGANIZATION OF CLINICAL SERVICES

- A multispecialty Mucormycosis Clinical team to be in place.
- To categorize patients as Covid +ve & Covid -ve.  
Admission as per above categorization  
Many patients with Mucor are noted to be Covid RTpcr +ve at >10 days from onset  
This may represent immunecompromise related persistence of Covid infection.

#### Why the surge in Mucormycosis

- COVID-19 has tendency to worsen diabetes and also precipitate diabetes in previously normal individuals
- The Covid 19 infection itself is associated with leucopenia and may lead to immune compromise caused by impaired or inappropriate immune responses.
- Immunosuppressive treatments are being widely used for treatment of Covid-19 infection .
- The severity of Mucor infection is largely dependent on the patient's immunity and general health.
- Coexistence of Covid – 19 infection with high blood sugar levels, and immunosuppressive treatments would expectedly increase incidence and severity of Mucormucosis.
- Mucor infection may occur during Covid-19 infection , or after a few weeks of apparent recovery from it.

#### Checklist of sentinel signs/ symptoms to be monitored in patients admitted with Covid-19

- Nose and sinuses Mucor infection (relatively early disease)  
**Early detection at this stage can enable early treatment and minimize complications.**
  - Headache and nasal obstruction- especially if persistent or severe and not responding to pain medicines.
  - Nasal crusting and nasal discharge which could be brownish or blood tinged
  - Pain or loss of sensation on face
  - Discolouration of skin of face / localised Facial puffiness
  - Loosening of teeth/ discoloration or ulceration of palate
- Eye / Orbital Mucor infection ( moderately advanced disease)
  - Eye swelling or redness, double vision, loss of vision, Eye pain, drooping eyelid
- Intracranial infection (very advanced disease)-
  - II-VI Cranial nerve palsies (Cavernous sinus involvement) ; signs of MCA thrombosis



#### Treatment principles-

##### Urgent intervention to minimize progression and mortality/ loss of eye

- Treatment of co-morbid illness/ blood sugar control & of Covid illness
- To review Covid treatments to minimize immunocompromise
- Twice daily evaluations as per Mucor Checklist above for progression to orbital/ intracranial involvement.
- Confirmation of Diagnosis by
  - KOH Smear/ Biopsy of involved lesion with appropriate precautions.
  - Radiology – CT/ MR for assessment of disease extent.

*Radiological signs in the initial phase may often be subtle and minimal and may not demonstrate florid sinusitis and bone erosion. Lack of these signs does not exclude the diagnosis*

- Antifungal treatment with Amphotericin B/ Posaconazole.

*In situations of high clinical suspicion consider initiation of anti-fungal chemotherapy prior to microbiological confirmation*

- Early surgical debridement after stabilization of systemic illness and ensuring facilities for post surgical care/ ventilation as anticipated.