GOVERNMENT OF ODISHA
HEALTH AND FAMILY WELFARE DEPARTMENT
***

NOTIFICATION

File No.HFW-SCH-I-COVID-0021-2021 15297 **/H, Dated,** 20.05.2021

Government after careful consideration have been pleased to include Mucormycosis (Black Fungus) as notifiable disease by exercising the power conferred by section 2 of the Epidemic Diseases Act, 1897 (3 of 1897) until further orders. The detail reporting format & treatment protocol are attached at Annexure-A, Annexure-B & Advisory at Annexure-C.

By order of the Governor

Additional Chief Secretary to Government

Memo No. 15298 /H, Dated 20.05.2021

Copy forwarded to the Gazette Cell, Odisha Secretariat, C/o-.Commerce Department, Bhubaneswar with a request to publish this notification in the extraordinary issue of the Odisha Gazette and supply 100 (Hundred) copies of the same to this Department for record.

Deputy Secretary to Government

Memo No. 15299 /H, Dated 20.05.2021

Copy forwarded to Accountant General (A&E), Odisha Bhubaneswar for information and necessary action.

Deputy Secretary to Government

Memo No. 15300 /H, Dated 20.05.2021

Copy forwarded to All Departments of Government for information and necessary action.

Deputy Secretary to Government

Memo No. 15301 /H, Dated 20.05.2021

Copy forwarded to all Collectors / Dean &Principals of all Government Medical Colleges &Hospitals / Superintendents of all Government Medical Colleges & Hospitals / All CDM &PHOs / CMMO, BMC, Hospital, Bhubaneswar for information and necessary action.

All CDM&PHOs are requested to make it mandatory for all health facilities to report all suspected and confirmed cases to Health Deptt. as well to IDSP SURVEILLANCE SYSTEM.

Deputy Secretary to Government

Memo No. 15302 /H, Dated 20.05.2021

Copy forwarded to all Directors under Health & FW Department / Mission Director, NHM, Bhubaneswar, Odisha / MD, OSMCL, Bhubaneswar / Project Director, OSACS, Bhubaneswar for information and necessary action.

Deputy Secretary to Government

Memo No. 15303 /H, Dated 20.05.2021

Copy forwarded to P.S. to Hon'ble Chief Minister, Odisha / P.S. to Hon'ble Minister, Health & FW, Odisha for kind information of Hon'ble Chief Minister / Hon'ble Minister, Health & FW.

Deputy Secretary to Government

Memo No. 15304 /H, Dated 20.05.2021

Copy forwarded to O.S.D. to Chief Secretary, Odisha/ P.S. to Additional Chief Secretary to Government, Health & F.W. Department for kind information of Chief Secretary / Additional Chief Secretary.

Deputy Secretary to Government

Annexure - A

FORMAT for reporting of suspected case of Post- COVID Mucormycosis

(A) Patient profile

Name - Age - Gender – M/ F

Present Address - Permanent Address -

Occupation Contact no. of Relative/Attendant

(B) Date of Covid19 positivity -

Home isolation/ Hospitalization/in ICU/ in Ventilator

(C) Previous Medication status in details (including administration of Antifungals like Voriconazole)

(D) Date of recovery from Covid19 -

(E) Co-morbidity associated/ Past H/o Illness if any
(Uncontrolled DM/ Diabetic Ketoacidosis/ prolonged steroid therapy / long stay in ICU/ Acute or Chronic Renal Failure/ Organ or Cell Transplant/ Malignancies / Immuno-suppressive therapy / Hematological disorders/ Vasculitis / Neutropenia / any other etc.)

(F) Presenting signs & symptoms with duration

(G) Present clinical and other investigational finding
Clinical-

Radiological-

Histopathological-

Microbiological-

(H) Present Treatment with Surgical intervention if any

(I) Status with referral if any

Signature of treating Doctor

Signature of Head of the Institution

(Name of the Institution with seal)

Annexure-B

MANAGEMENT PROTOCOL FOR POST COVID MUCORMYCOSIS (BLACK FUNGUS)

Urgent measures for early diagnosis, management and prevention of Mucormycosis (Black Fungus) during COVID -19

There has been a surge of Mucormycosis cases in the State of Odisha associated with COVID-19. Mucormycosis is an Aggressive Angio-invasive fungal infection acquired primarily by inhalation of Sporangiospores and by trauma in immunocompromised hosts who have also suffered from COVID-19 recently.

RISK FACTORS

- Recent H/O Severe COVID -19 (< 6-Weeks)
- Uncontrolled Diabetes, Chronic Granulomatus Diseases, Primary Immuno- Deficiency, Chronic Renal Failure.
- Prolonged use of Cortico-Steroids (> 3 weeks or high dose >1 week)
- Use of immunosuppressive drug like Tocilizumab and others
- Prolonged ICU stay
- Trauma , Burn, IV - Drug abuses
- Voriconazole therapy , Desferioxamine therapy
- Contaminated Apparatus, Hospital linen, Dressing Materials & O2 supply system especially humidifiers and attachments

TYPES

ROCM (Rhino – Orbito Cerebral Mucormycosis)

- Nasal stuffiness, Discharge, Epistaxis
- Unilateral facial oedema
- Diplopia , Proptosis, Pain & Redness around eyes and nose.
- Restriction of eye movements
- Palatal or Palpebral fistula
- Blackish discolouration over bridge of nose and palate
- Prolonged fever , Toothache , loosening of teeth , cough
- Altered mental status

CUTANEOUS AND SOFT TISSUE

- Erythema
- Black eschar at trauma/ puncture site

PULMONARY

- Fever
- Non- productive cough
- Progressive dyspnoea, Pleuritic chest pain

GASTRO INTESTINAL

- Fever
- Bleeding
- Mass like lesion, perforation

BONES AND JOINTS

- Local pain, cellulites

DISSEMINATED

- Symptoms vary as per the site of involvement mostly associated with Pneumonia

DIAGNOSIS

Clinical symptoms as per involvement of site

Lab. Investigation:

- CBC, ESR,FBS,HbA1, LFT, RFT, Electrolytes
- Diagnostic Nasal Endoscopy
  -- Crusting, discoloured mucosa, Debris, Scabbing

Imaging:

CECT of PNS & Nose: Erosion and thinning of bones, Enlargement of Masticatory muscles, Mucosal thickening of sinuses, changes in Fat planes

CE MRI Brain / Orbit /Face: Optic neuritis, intra cranial involvement, intra-temporal fossa involvement

- **KOH Staining / Microscopy** (Sample in Normal Saline) Direct Microscopy using fluorescent brightener and Histopathology with special stain
  Non- Septate/ Pauci-Septate ribbon like Hyphae & vessel occlusion
- **Histopathology** (Sample in 10% formalin) – Haemorrhagic infarction, Coagulation Necrosis, Angio- invasion, infiltration of Neutrophills , Peri-neural invasion
- **Culture**- Routine Media at 30 C and 37 C (Sample –Cotton white or Greyish Black Colony in NS)
- **Avoid Sending swabs**
- **Always tissue should be sent**

TREATMENT

Requires a team approach (ENT, Neurology, Pulmonary Medicine, Derma, Pathologist and Microbiologist, Intensivist, Surgeon-Maxillofacial/ Plastic)

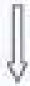
Initial Treatment after confirmation- Inj. Amphotericin-B up to 14-21 days preferably Liposomal Amphotericin-B (Dose- 5 mg. per/kg/ day as slow iv infusion following the details protocol

Test dose: Inj. Amphotericin-B- 1 vial 50 mg to be diluted with 12 ml of the diluents and 0.25 ml (1 mg) of the solution made , to be mixed with 100 ml. Dextrose and to be infused in 30 minutes, Observe for fever and reaction), in intra cranial invasion 10 mg per kg. per day

Pre-hydration : 500 ml. NS over 30 minutes

To reduce the risk of renal toxicity and hypokallemia; 500 ml. Normal saline + 1 Amp(20 mmol KCL)

Therapeutic dose (5 mg. -10 mg/ kg/day Inj. Amphotericin-B in 500 ml D5 ith 10 units HIR over 3 hours (to be covered in Black sheet)



Post hydration: 500 ml NS over 30 minutes

Post dose: KFT with Serum electrolytes after every dose of Inj. Amphotericin-B

Fill Inj. Amphotericin-B monitoring Chart

Regular monitoring of renal function

Step down or salvage therapy

POSACONAZOLE -200 mg. 4 times daily, 300 mg -12 hrly daily on Day -1.

300 mg- OD from Day -2 onwards until clinically and microbiologically clear.

Paediatric

- Dose is same for Amphotericin-B
- POSACONAZOLE – 18-24 mg/kg/day (Orally) in 2-3 divided doses

Surgical

- Early Surgical Debridement and intervention is necessary as per involvement of organs as per protocol
- SOP for Strict Adherence of Humidifiers use for O2 Delivery`

PREVENTION

- Environmental cleanliness to have no exposure to decaying organic matters
- To use masks while visiting dusty construction sites
- During gardening use shoes, long trousers, long sleeve shirts and gloves.
- Maintain personal hygiene including thorough scrub bath.
- Strict Control of Hyperglycaemia and Diabetic ketoacidosis
- Monitoring of Glucose in Covid-19 patient requiring steroid

- Optimal Steroid use- Right time of initiation, Right dose, Right duration (Short course)
- Antibiotics/ Anti-fungals only when indicated
- Monitoring and judicious use of O2 therapy. Strict protocol for infection prevention & control for Oxygen cylinders, Tubes, Cannulla/Mask and humidifiers as per Protocol.
- Regular cleaning / mopping of wards and ICU as per IPC protocol.

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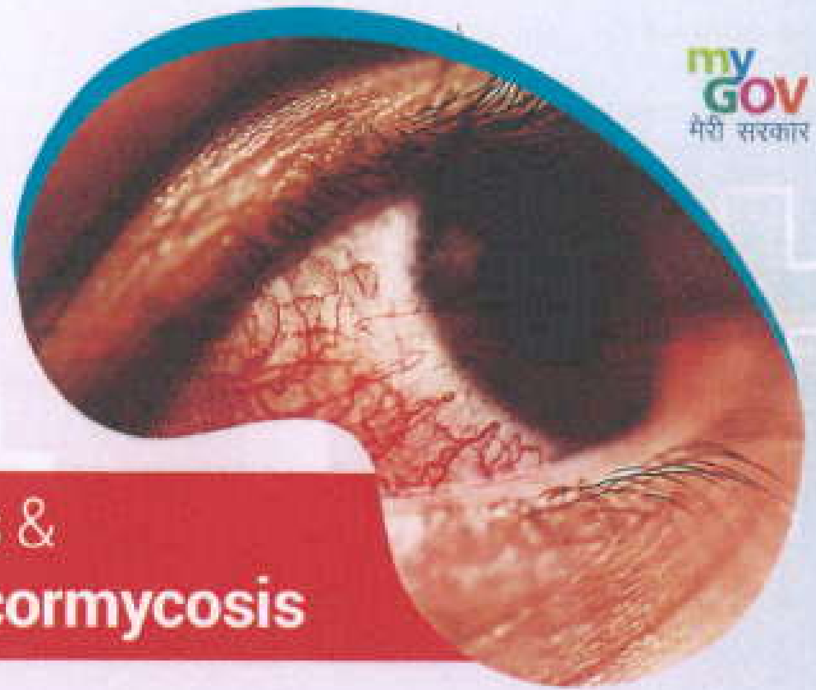
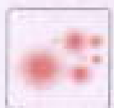
Annexure - C



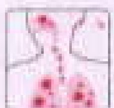
Evidence Based Advisory in the Time of COVID-19

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



Sinuses or lungs of such individuals get affected after fungal spores are inhaled

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

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

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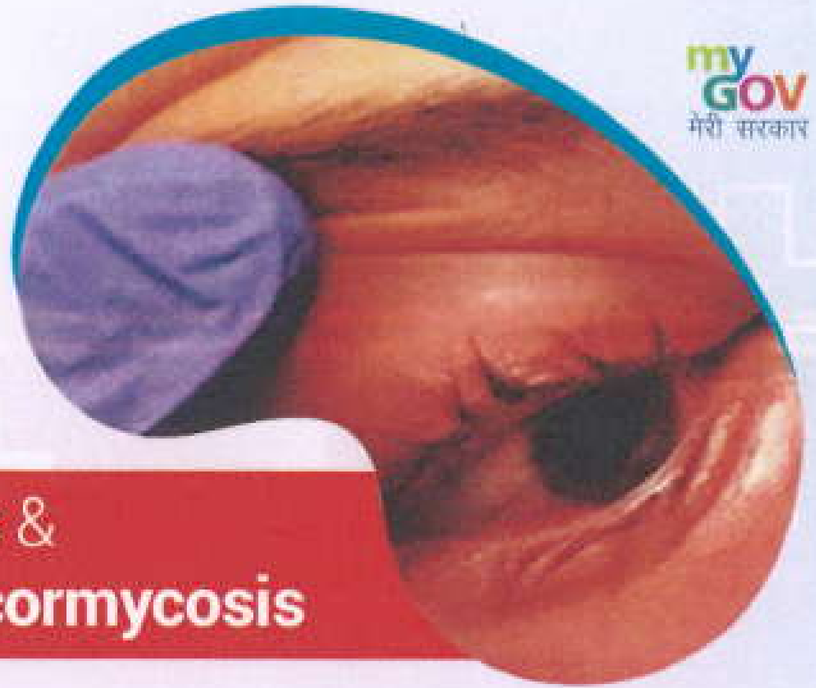
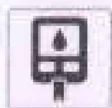
Screening, Diagnosis & Management of **Mucormycosis**



What Predisposes



Uncontrolled diabetes mellitus

Immunosuppression by steroids

Prolonged ICU stay

Co-morbidities – post transplant/malignancy

Voriconazole therapy

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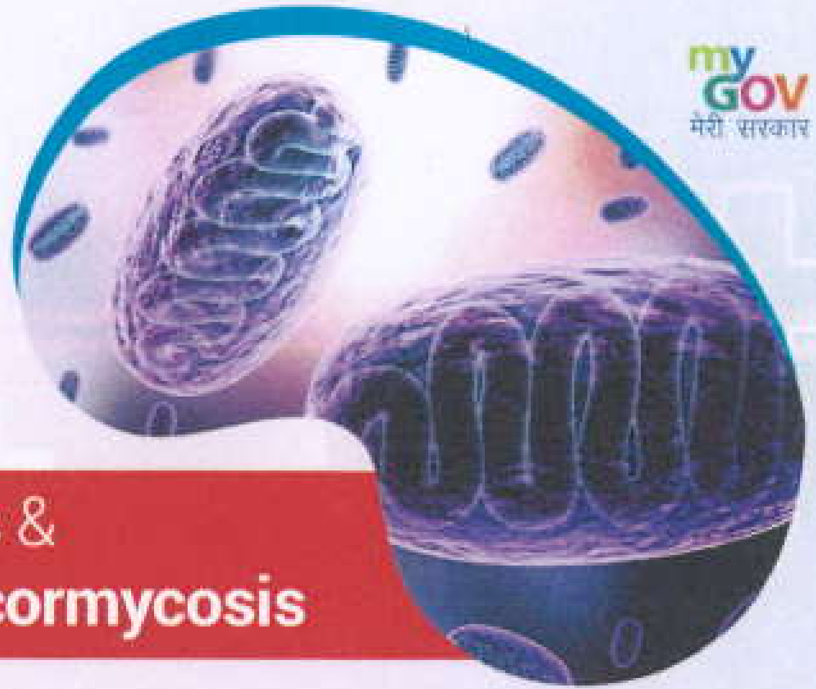
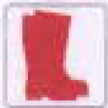


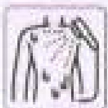
Screening, Diagnosis & Management of **Mucormycosis**

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

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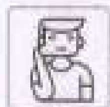
Screening, Diagnosis & Management of **Mucormycosis**

When to Suspect (1/2)
(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

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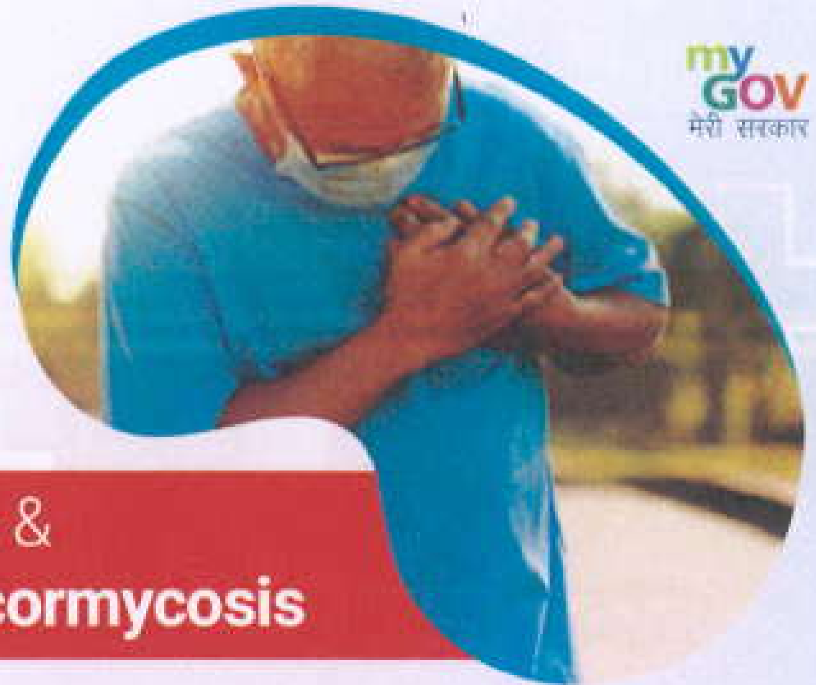

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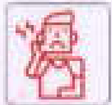
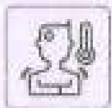
Screening, Diagnosis & Management of **Mucormycosis**

When to Suspect (2/2)
(in COVID-19 patients, diabetics or immunosuppressed individuals)


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

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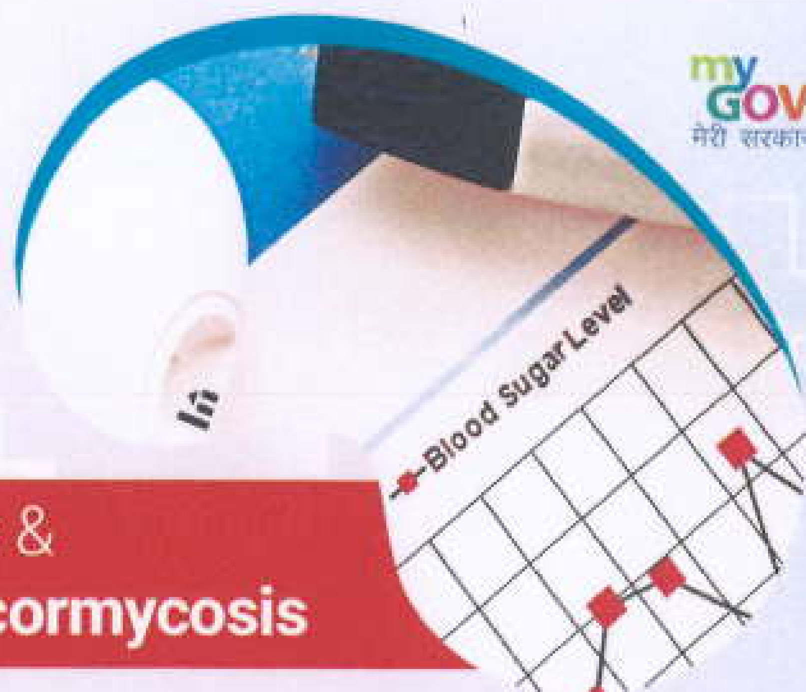
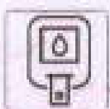


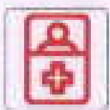
Screening, Diagnosis & Management of **Mucormycosis**

Dos

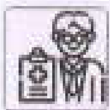
Control hyperglycemia



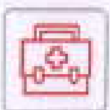
Monitor blood glucose level post COVID-19 discharge and also in diabetics



Use steroid judiciously – correct timing, correct dose and duration



Use clean, sterile water for humidifiers during oxygen therapy



Use antibiotics/antifungals judiciously

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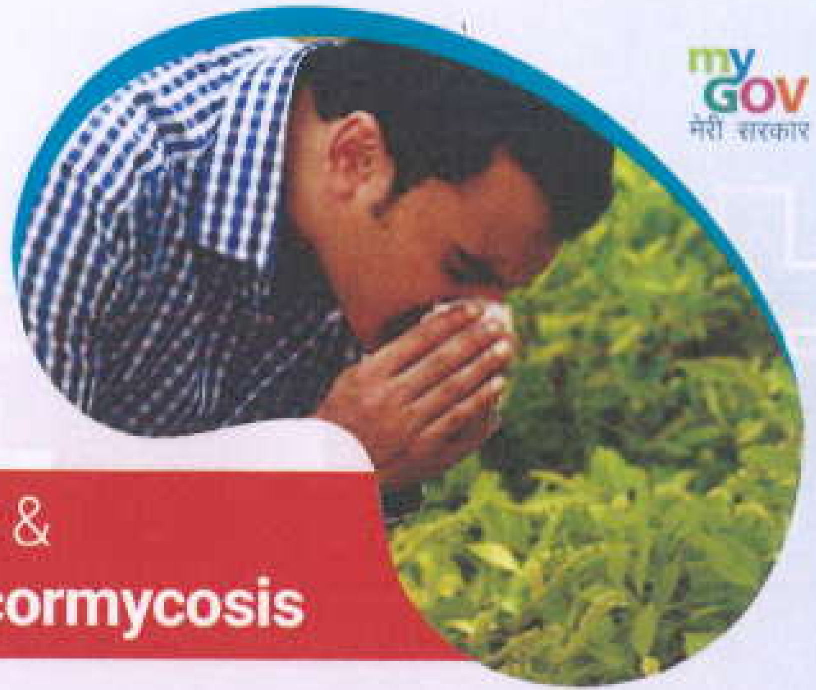
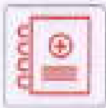
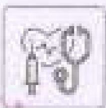


Screening, Diagnosis & Management of **Mucormycosis**

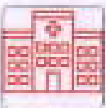
Don'ts



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, MALDITOF), for detecting fungal etiology

Do not lose crucial time to initiate treatment for mucormycosis

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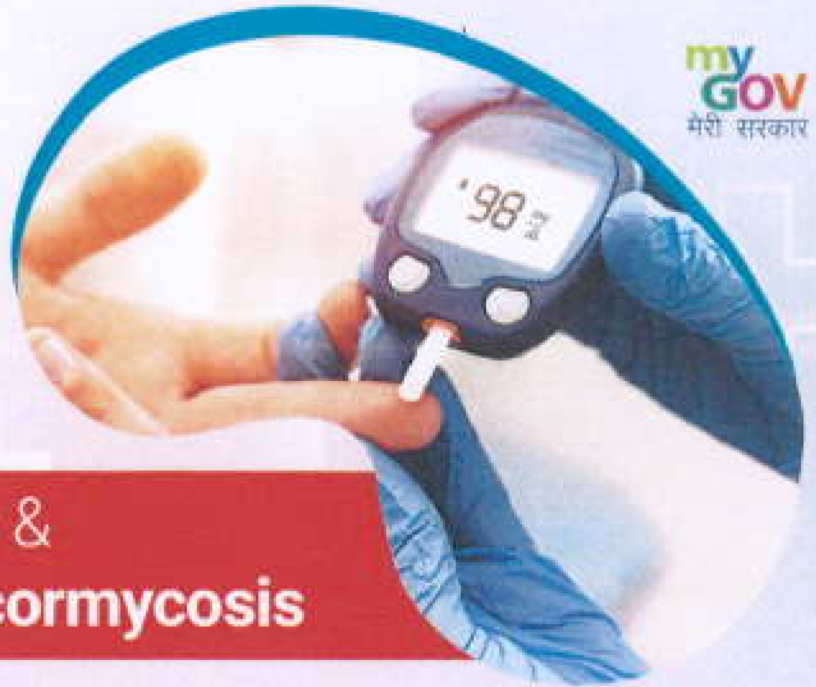
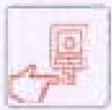
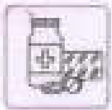


Screening, Diagnosis & Management of **Mucormycosis**

How to Manage (1/2)



Control diabetes and diabetic ketoacidosis



Reduce steroids (if patient is still on) with aim to discontinue rapidly

No antifungal prophylaxis needed

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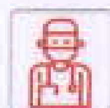
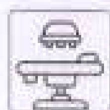
Screening, Diagnosis & Management of **Mucormycosis**

How to Manage (2/2)



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



Monitor patients clinically and with radio-imaging for response and to detect disease progression