"PRESENTATION OF MUCORMYCOSIS IN POST COVID-19 INFECTED PATIENTS AND AN APPROACH TO ITS MANAGEMENT"

Dr.Sameeksha Mishra

Participant id-

AOI LM-6721

INTRODUCTION

- Mucormycosis (black fungus) is a fungal infection caused by a group of fungi called mucormycetes. These fungi are naturally found in air, water and even food. It enters in the body after inhaling fungal spores from the air and commonly affects sinuses and lungs.

- It infects the nose, orbit of eye,oral cavity and can even spread to the brain. Symptoms develop as headache, nasal congestion, nasal discharge,bleeding nose,crusting in nose,swelling on face, lack of sensation on face and skin discoloration.

- Pulmonary and cutaneous are also seen.

CAUSES

- During COVID-19 pandemic, the occurrence of mucormycosis has been reported among patients who are either recovering or recovered from COVID -19.

- According to an advisory issued by the Indian Council of Medical Research, the following conditions in COVID-19 patients increase the risk of mucormycosis infection:

- Uncontrolled diabetes

- Weakening of immune system due to use of steroids

- Prolonged ICU/hospital stay

- Co-morbidities / post organ transplant / cancer
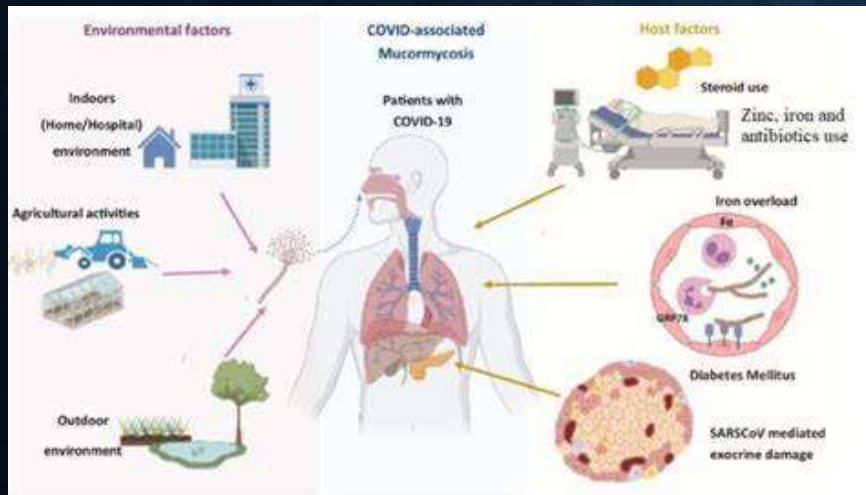

PATHOGENESIS
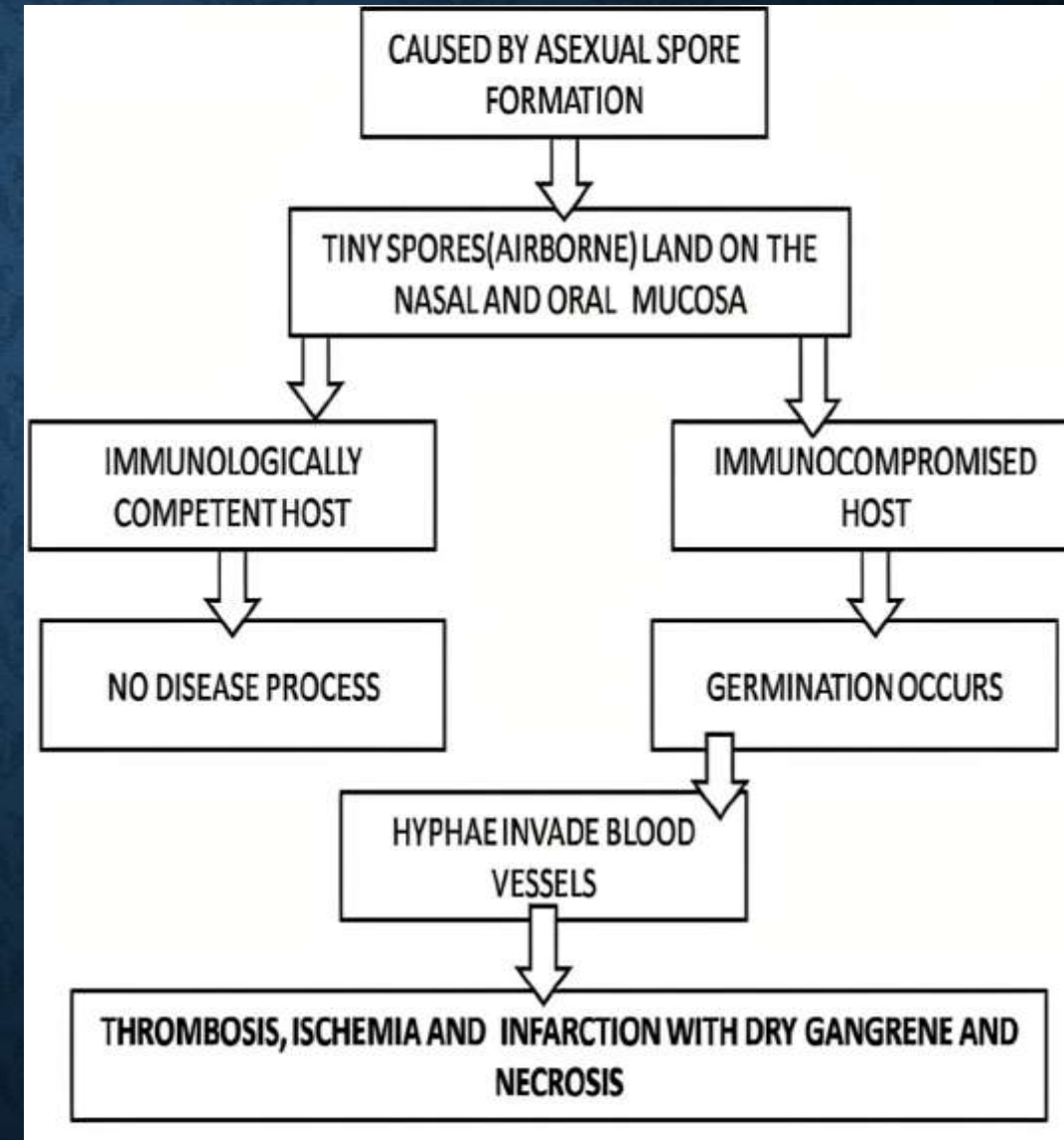
AIMS & OBJECTIVES

- To study the presentation of mucormycosis in different age groups,gender and patients with comorbidities post covid 19 infection and its management on medical and surgical grounds.

MATERIALS AND METHODS

- The study was carried out on patients with post covid-19 Mucormycosis cases. This is a case study of 70 CASES admitted in our tertiary care centre post covid-19 infection with different complaints and signs and symptoms indicating Rhino-Orbital-Cerebral-mucormycosis.

- All the cases were again screened for covid infections and comorbidities like DM,HTN or any other immunocompromised state.

- The level of involvement like nasal cavity,septum,turbinates,sinuses,palate,orbit or any cerebral involvement was noted and the protocol of medical and surgical management was decided in accordance to that.

- Post surgery KOH mount and HPE report,CT and MRI findings were the major pillars in this regard.
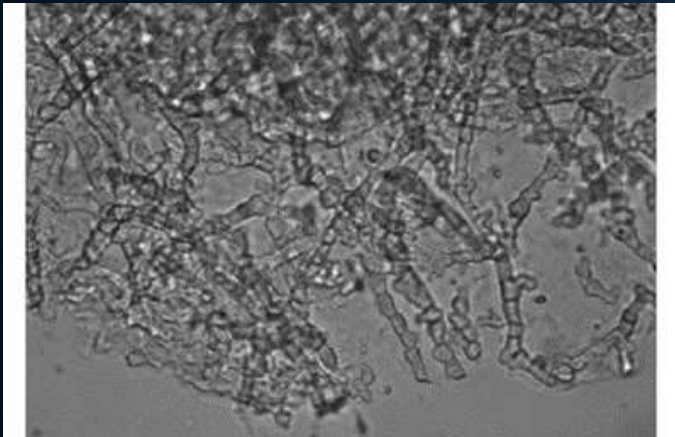
HISTORY,SIGNS & SYMPTOMS

CRITERIA	COVID POSITIVE	DM	STEROID USE HISTORY
NO. OF PATIENTS	65	55	68

AREA OF INVOLVEMENT	NO. OF PATIENTS
NASAL	70
SINUSES	60
OCULAR	21
CEREBRAL	24
PALATAL	13

MANAGEMENT
INVESTIGATIONS:

- CT PNS AND MRI PNS FINDINGS:
- INVOLVEMENT OF SINUSES:

SINUSES	NO.OF PATIENTS
MAXILLARY	70
ETHMOID	50
FRONTAL	15
SPHENOID	10
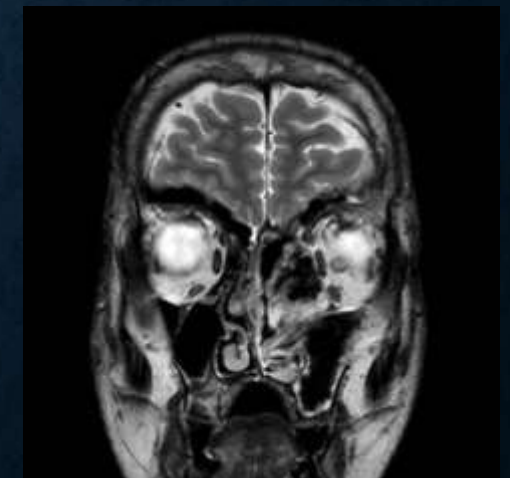
SURGICAL PROCEDURE:

PROCEDURE	NO.OF PATIENTS
MIDDLE MEATUS ANTROSTOMY WITH PARTIAL MIDDLE TURBINECTOMY	70
MIDDLE MEATUS MEGA ANTROSTOMY WITH ETHMOIDECTOMY WITH PARTIAL MIDDLE TURBINECTOMY	15
MEDIAL MAXILLECTOMY WITH DENKER'S	40
FULL HOUSE FESS	15

POST SURGICAL WORK UP:
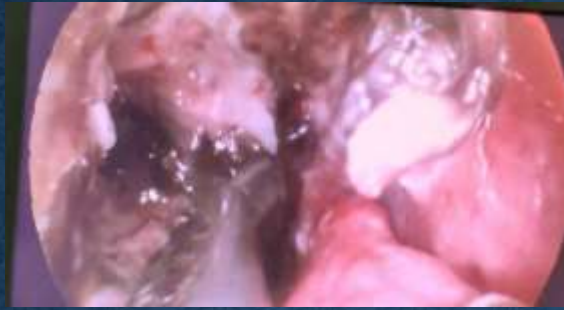
- Repeated debridement.
- Alternate day suction and cleaning.
- Local application of Amphotericin ointment and packing.
- Koh mount and HPE.
- Saline nasal wash.
- Every third day suction & cleaning even after discharge followed by weekly follow up and then monthly.
- Post surgery CT/MRI.
- Ocular involvement was taken care of and if required exenteration was done in excessive involvement cases by ophthalmology department.
- Patients with extensive palatal involvement were provided with obturator or prosthesis from the dental department.

RESULTS

- In this study we have learnt that the management of mucormycosis is a long and tedious job and cant be achieved in a day or two.

- As per management what we did at our tertiary care centre 100% patients presented with involvement of maxillary sinus and 71% had their ethmoid sinus involved while only 21% cases had their frontal sinus involved and only 14% cases were seen with sphenoid involvement.

- So,as per the involvement of areas on CT/MRI findings and DNE surgical decisions were made and in 100% of cases we did MIDDLE MEATUS ANTROSTOMY WITH PARTIAL MIDDLE TURBINECTOMY and in 57% cases we did MEDIAL MAXILLECTOMY WITH DANKER'S.

- Rest MIDDLE MEATUS MEGA ANTROSTOMY WITH ETHMOIDECTOMY WITH PARTIAL MIDDLE TURBINECTOMY & FULL HOUSE FESS was done in 21% of cases.

- The medical management like administration of drugs like Amphotericin-B and Posaconazole were decided once the extent of infection and involvement was determined in a particular patient.Other resorts like management of blood glucose levels and other comorbidities was of utmost importance in achieving a fruitful result.

DISCUSSION

- Mucormycosis is the third most common life threatning fungal infection,most frequently caused by Rhizopus,Lichtheimia or Mucor.Infections occur from spore inhalation or via direct inoculation of skin or mucosa.

- Diabetics with ketoacidosis are specially prone as Rhizopus species prefer hyperglycemic environments.

- After infecting the para nasal sinuses spores spread inferiorly to involve the palate,posteriorly into the sphenoid sinus or cranially to attack the brain.

- Treatment involves Amphotericin-B and surgical debridement.

- Repeated suction & cleaning is the main stay for this disease.
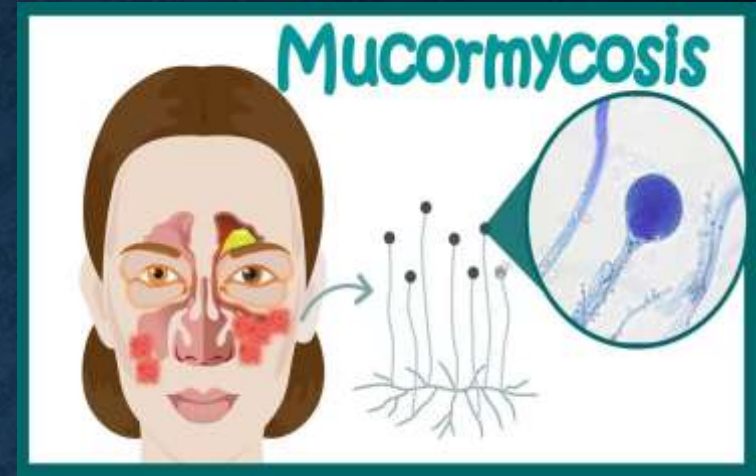
CONCLUSION

- COVID-19 has put the entire world in turmoil situation, and an exact cure for this deadly infection has not been found yet. Its an infection, the consequential immunosuppression, former co-morbidities and its medications have made the patients susceptible to secondary fungal infections such as Mucormycosis.

- ROCM is a super infection that has been dreadful to the society in this covid era as it was an epidemic in an under going pandemic.

- Drug played an important role in this infection,like steroid intake was seen in majority of cases and post covid immense use of Amphotericin-B drug has dramatically effected the renal status of the patients though it was the only main stay.

REFERENCES

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1195964/

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8431836/

- AACE 2019 Poster Gallery | eventScribe Poster Gallery

THANK YOU