ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 05 | May - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

SURGICAL OUTCOME OF DIAGNOSED CASES OF MUCORMYCOSIS- AT TERTIARY CARE HOSPITAL

ENT

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ABSTRACT

Mucormycosis incidence had increased in India due to COVID-19 over a period of 3 months, especially during the second wave of COVID-19 in Maharashtra, India. In India, Mucormycosis was seen in 0.14 per 1000 population, which was 80 times higher as compared to developed countries. As Mucormycosis is angio-invasive disease, it causes vascular thrombosis and tissue necrosis

KEYWORDS

Mucormycosis, COVID-19,Angio-invasive

INTRODUCTION

-Mucormycosis caused by filamentous fungi of the mucorales type.Diagnostic criteria of mucormycosis were defined by the European Organization for Research and Treatment of Cancer (EORTC) in 2008 based on host criteria (facultative), clinical criteria, and myco /histologic criteria[1]

They occur in immunocompromised patients with diabeties/ haematological malignancies[2]

Mucorales causes fungal dissemination and tissue necrosis, and their low susceptibility to antifungal agents and functional prognosis of mucormycosis is poor.

The highest mortality is observed in immunocompromised population, namely patients from onco-hematology[3]

Risk Factors

I. Poorly controlled diabetes mellitus.
II. Patients who take glucocorticosteroid agents.
III. Patients with elevated available serum iron.
IV. In the present study, 84% of patients with mucormycosis had a COVID-19 infection.

MATERIAL AND METHOD

A retrospective descriptive study was carried out at a tertiary hospital during May 2021-July 2021.

75 cases M/M with micro/histo; confirmed mucormycosis cases.

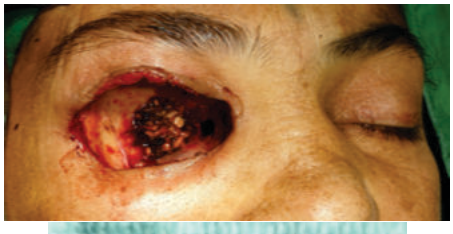
After obtaining informed written consent from patients, a clinical history was taken about diabetes mellitus, use of steroids in COVID-19 treatment, use of immunosuppressant drugs, oxygen therapy, use of ventilators, etc.

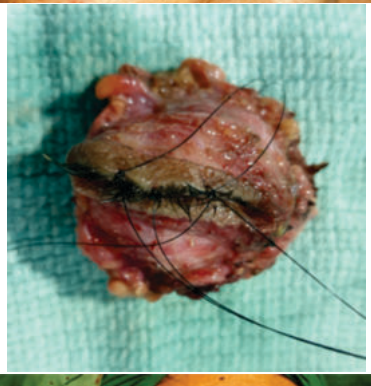
DNE was done in all patients and samples from the nasal cavity had sent to the microbiology and pathology department for confirmation of diagnosis. KOH negative and clinically mucormycosis suspect patients were posted in operation theatre for a biopsy and or debridement. The samples were sent to microbiology and histopathology examination for confirmation of the diagnosis of mucormycosis.

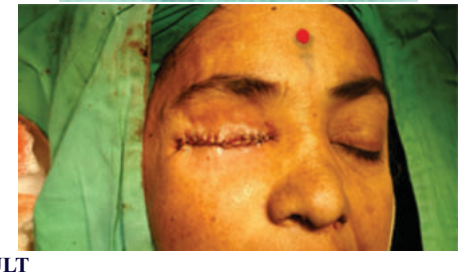
All patients had a CT or MRI of PNS , brain , orbit depending on the presentation of the patient.

All M/M patients were treated with amphotericin B colloidal dispersion (ABCD), liposomal amphotericin B (L-AMB), amphotericin B lipid complex (ABLC) and amphotericin B conjugated with de-oxycholate (AMBD). The dose of ABCD, L-AMB and ABLC 5 mg/kg/day once daily IV over 4–5 hr. The AMB-D 1 mg/kg/day once daily IV over 4–5 hr with adequate hydration before and after dosing for renal function improvement. The treatment was continued till the cumulative dose of 5 g. Renal function test was done periodically in all patients.

After anesthetic fitness, patients were posted for aggressive surgical treatment. Ophthalmology, Maxillofacial and Neurosurgery consultation was done.







RESULT

According to Age and Sex

In the present study, 74.7% of mucormycosis patients were males and 25.3% of mucormycosis patients were females . 77.4% of mucormycosis patients were above 40 years of age and no patient was under 20 years of age

According to COVID 19 status in mucormycosis patients

- In the present mucormycosis patients were diagnosed during COVID-19 treatment or quarantine period .

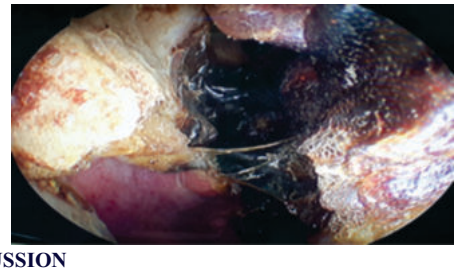
- 16% of mucormycosis patients had no history of COVID-19 infection and were negative RTPCR results on admission.
- Among mucormycosis patients with history of COVID19 infection, eight patients were with of loss of taste and smell during the COVID-19 infection.
- All the patients were recovered fully after few weeks and got back taste and smell sensations.

Surgical Outcome In Mucormycosis Patients

In the present study, surgeries were done to remove all necrotic areas from nose, sinuses, palate, maxilla, pterygopalatine fossa, infratemporal fossa and mandible.

In case of recurrence multiple surgeries were done in same patients. Orbital exenteration was done in the cases with involvement of eyeball and loss of vision due to extensive mucormycosis.

In the present study, total 67 patients were operated. Six patients were not operated due to poor medical condition. Two patients were transferred to neurosurgery centre due to extensive disease. 72% percentage patients were recovered after surgical debridement. Although, surgical debridement was done, 17.33% patients succumbed.



DISCUSSION

- Mucormycosis is an infection caused Zygomycetes fungus[4].
- Diabetes mellitus, hyperglycemia in COVID-19 infection, ketoacidosis and low pH increase chances of mucormycosis.
- The phagocytic activity of WBC is reduced with the use of steroids.
- Mucormycosis growth occurs on free available iron. Increased interleukin 6 in COVID-19, increases free iron due to increased synthesis and decreased iron transport.
- Wooden tongue depressors, hospital linens, negative pressure rooms, water leaks, non-sterile medical devices, and building construction are sources of mucormycosis[5]. Mucormycosis is also seen in exposed wounds[6]

CONCLUSION:

Strict diabetic control and early surgical debridment is the key management of mucormycosis

REFERENCES:

1. De Pauw B, Walsh TJ, Donnelly JP, Stevens DA, Edwards JE, Calandra T, Pappas PG, Maertens J, EORTC /IFICG, NIOAIDMSGCG. Revised definitions of invasive fungal disease from the EORTC/Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study
2. Petrikkos G, Skiada A, Lortholary, Roilides E, Walsh TJ, Kontoyiannis DP. Epidemiology and Clinical Manifestations of Mucormycosis.
3. Bitar D, Che D, (2013) [Epidemiology of mucormycosis in metropolitan France, 1997-2010]. Medecine sciences: M/S 29 Spec No 1: 7-12
4. Ferguson BJ (2000) Mucormycosis of the nose and paranasal sinuses. Otolaryngol Clin N Am 33(2):2000
5. Chaudhry R, Venugopal P, Chopra P (1987) Prosthetic mitral valve mucormycosis caused by mucor species. Int J Cardiol 17(3):333–335
6. Chaudhry R, Venugopal P, Chopra P (1987) Prosthetic mitral valve mucormycosis caused by mucor species. Int J Cardiol 17(3):333–335