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CLINICAL RESPONSE TO I.V POSACONAZOLE IN A POST-COVID-19 SUSPECTED MUCORMYCOSIS: A CASE REPORT

General Medicine

Dr Daruka K M* Senior PG consultant medicine District Hospital Tumkur.*Corresponding Author
Dr Jayanth Senior specialist ENT District hospital Tumkur.
Dr Saurabh Prakash DNB resident in medicine District hospital Tumkur.

ABSTRACT

Mucormycosis is one of the most rapidly progressing and fulminant forms of fungal infection, primarily affecting immune compromised patients. The disease is difficult to diagnose and mortality rate is high even if treated adequately. Hence, early diagnosis of this potentially life-threatening disease and prompt treatment is of prime importance due to aggressive course of the disease.

KEYWORDS

Mucormycosis, Amphotericin B, Posaconazole, COVID-19, KOH mount

INTRODUCTION:

Mucormycosis previously known as- Zygomycosis, is a serious fungal infection caused by molds- Mucormycetes of the order Mucorales [1,2]. It is a rare infection in immunocompromised states causing severe rhino-cerebral and pulmonary infections [2,3]. Mucormycetes are ubiquitous in nature and their transmission is by inhalation of spores. It is non-contagious and does not spread by contact of person to person. The risk factors are- Diabetes mellitus, malignancies & its therapy, post-transplant, AIDS and to name a few[3,4,5,6,7]. Clinically mucormycosis presents as sinusitis with nasal pain, congestion and discharge. It is diagnosed by histopathology and fungal staining of the sample by KOH mount and fungal culture, if facilities available. In view of COVID-19 pandemic, CT/MRI imaging of brain and paranasal sinuses with and without contrast were employed for quick diagnosis and early treatment, as the severity of rhino-cerebral mucormycosis was life-threatening [8]. Treatment includes surgical debridement (so that i.v Amphotericin/Posaconazole can reach the pathological site) and i.v anti-fungal therapy [9]. I.v liposomal amphotericin B is the drug of choice and i.v posaconazole is used for step-down/salvage therapy [10].

Case report:

A 44-year-old male patient was admitted to the hospital with the diagnosis of COVID-19 positive with involvement of both the lungs.

HRCT done revealed a CT severity score of- 25/25 with the following other investigations:

Hb.- 13.5 gm/dl
TLC- 23,500 /cumm with NLR-8
CRP- 65 mg/L
d-dimer- 3.2 mg/L
LDH- 785 IU/L
FERRITIN- 1800 ng/m
HbA1c- 6.5%
LFT, RFT, S.Electrolytes- WNL

The patient was treated in a COVID ICU with COVID treatment protocol (Antibiotic, Methylprednisolone, Remdesivir, Enoxaparin, Vit.C and other supportive treatment). He was diagnosed with diabetes during the treatment and was started on insulin. After 3 weeks of treatment, he complained of pain in the left orbit & face and CT PNS was done which revealed- collections in bilateral sphenoid sinuses and oedema of left peri-antral soft tissues with possibility of acute invasive fungal sinusitis. Due to non-availability of i.v amphotericin B, i.v posaconazole was started and continued for 2 weeks (15 doses). He maintained spo2 of 96% with NRM @ 6-8 ltr/m. His repeat chest x-ray also showed improvement in a graded manner. After 2 weeks of i.v posaconazole, he improved clinically regarding orbit and facial symptoms. Repeat MRI revealed- Left over mild left maxillary sinusitis only, with no evidence of invasion or infiltration. There was a good response to i.v posaconazole in this case and a planned surgical intervention at admission was avoided.

DISCUSSION:

Mucormycosis incorporates a range of infections caused by the fungi belonging to the order mucorales and family mucoraceae. The genera most commonly found in human infections are Rhizopus and Mucor. These fungi are usually avirulent and they become pathogenic only when the host resistance is exceptionally low. The most commonly reported forms are- rhinocerebral, pulmonary, cutaneous, gastrointestinal and disseminated. In view of COVID-19 pandemic, CT/MRI imaging of brain and paranasal sinuses with and without contrast were employed for quick diagnosis and early treatment, as the severity of mucormycosis was life-threatening. Treatment includes surgical debridement and i.v anti-fungal therapy but in a limited resource setting and under acute shortage of amphotericin B, posaconazole can be used.

Image -1

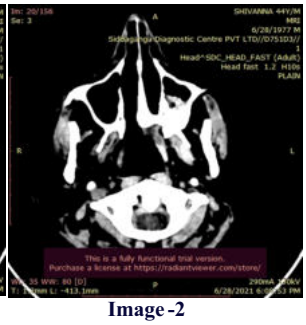

Image -2

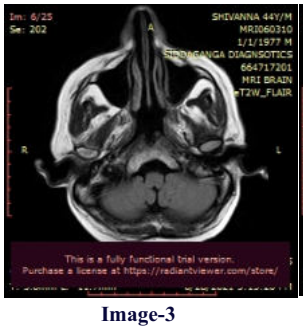

Image-3

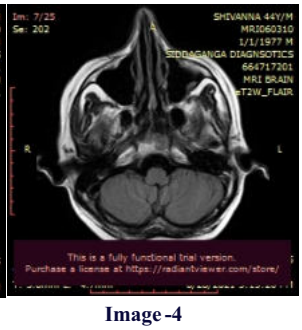

Image -4

CONCLUSION:

This report highlights to bring clinical awareness to the establish early diagnosis and prompt treatment with the minimum available resources.

Mucormycosis has emerged as a life-threatening infection in COVID-19 patients & those recovering from the disease and has challenged the system for diagnosis & treatment. In a limited resource setting with non-availability of KOH mount for diagnosis and amphotericin B for treatment, diagnosis by CT/MRI imaging of brain & paranasal sinuses with or without contrast can be considered for diagnosis and treatment with i.v posaconazole can be started for good results.

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