

RHINO ORBITAL MUCORMYCOSIS IN POST COVID 19 PATIENTS – A CLINICAL STUDY

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FINANCIAL DISCLOSURE
NO CONFLICT OF INTEREST



INTRODUCTION:

- Mucormycosis, once rare, has now become an emerging disease during the covid 19 pandemic.
- It is an aggressive, rapidly progressive disease, primarily affecting immunocompromised individuals & associated with high morbidity and mortality.
- Following the inhalation of fungal spores present in the environment, the fungi colonize and infect the nasal/sinus mucosa first, then spreads to surrounding anatomical areas including the orbit , cavernous sinus and the brain causing tissue necrosis.



AIM:

- To study the clinical features and management of post covid rhino orbital mucormycosis.

OBJECTIVES:

- To study the clinical features and assess the severity of orbital involvement among the rhino-orbital mucormycosis patients.
- To study the management & outcome in post covid rhino orbital mucormycosis patients.



MATERIALS AND METHODS:

- STUDY DESIGN : Hospital based retrospective study.
- STUDY PERIOD: June 2021 to August 2021. (3 months).
- STUDY SETUP : Conducted in King George hospital , Visakhapatnam
- SAMPLE SIZE : 50
- INCLUSION CRITERIA :
 - 1)Patients diagnosed with mucormycosis by means of clinical features, nasal endoscopy , histopathological & radiological methods.
 - 2) Patients who gave consent to the study.

EXCLUSION CRITERIA:

- 1) Patients with other ocular infections.
- 2) Patients who refused to give consent to the study.



METHODOLOGY:

- Patient's demographic data like age, gender were noted.
- Data such as presenting symptoms, signs, history of presenting illness, COVID history, associated co morbidities were noted.
- Visual acuity which was recorded at the time of presentation with Snellen's chart was noted.
- Findings of anterior segment evaluation (done by slit lamp biomicroscopy in ambulatory patients, loop & torch light examination for bed ridden patients) were noted.



- Features of fundus examination which was done by indirect ophthalmoscopy with +20D lens , were noted.
- Results of imaging modalities on CE MRI of brain, PNS & orbits were noted.
- Medical and surgical intervention given to the patients were recorded.

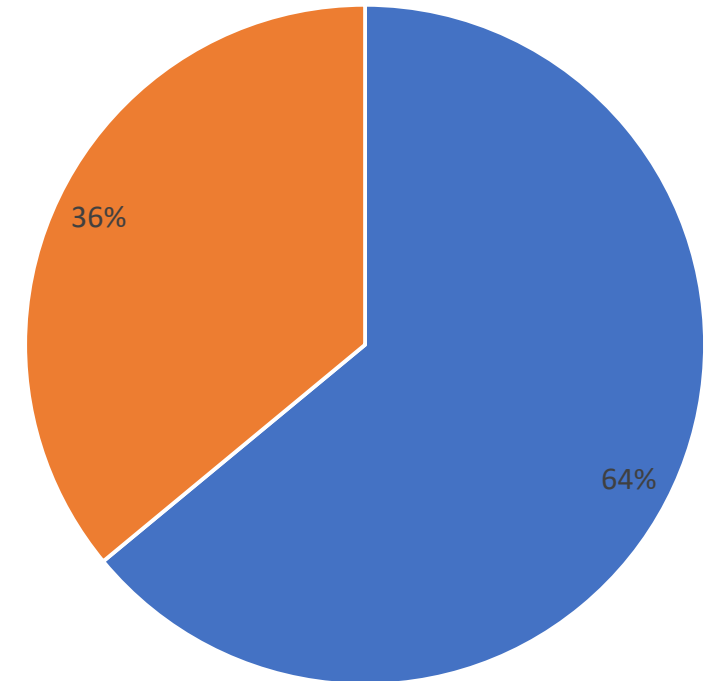


RESULTS:

- Totally 50 patients fulfilling the inclusion criteria were included in the study.

GENDER DISTRIBUTION OF THE PATIENTS:

GENDER	NUMBER	PERCENTAGE
MALES	32	64%
FEMALES	18	36%

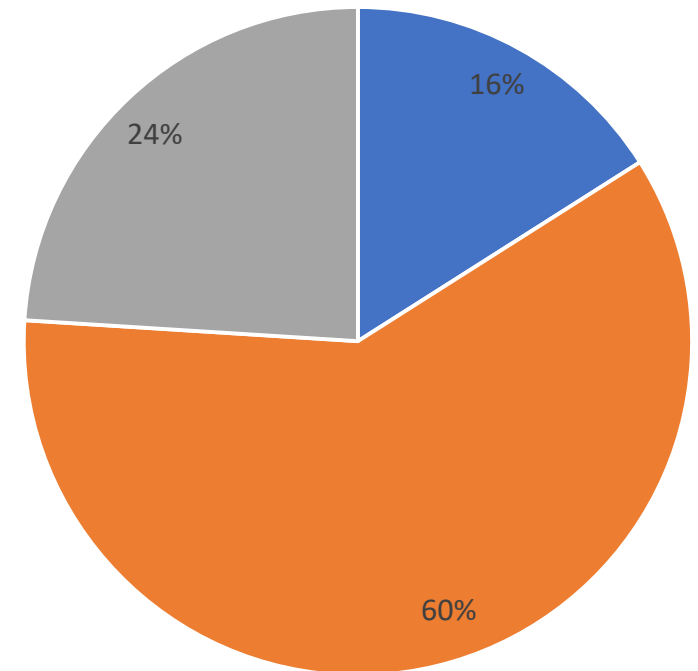


■ MALES ■ FEMALES ■ ■



- AGE WISE DISTRIBUTION OF THE PATIENTS:

AGE (IN YEARS)	NUMBER	%
<40	8	16 %
40 – 60	30	60 %
> 60	12	24 %
TOTAL	50	



■ < 40 yrs ■ 40 - 60 yrs ■ > 60 yrs ■



- HISTORY OF RISK FACTORS:

RISK FACTOR	NUMBER	PERCENTAGE
DIABETES MELLITUS	35	70%
STEROIDS (ORAL/IV)	32	64%
OXYGEN SUPPLEMENTATION	30	60%



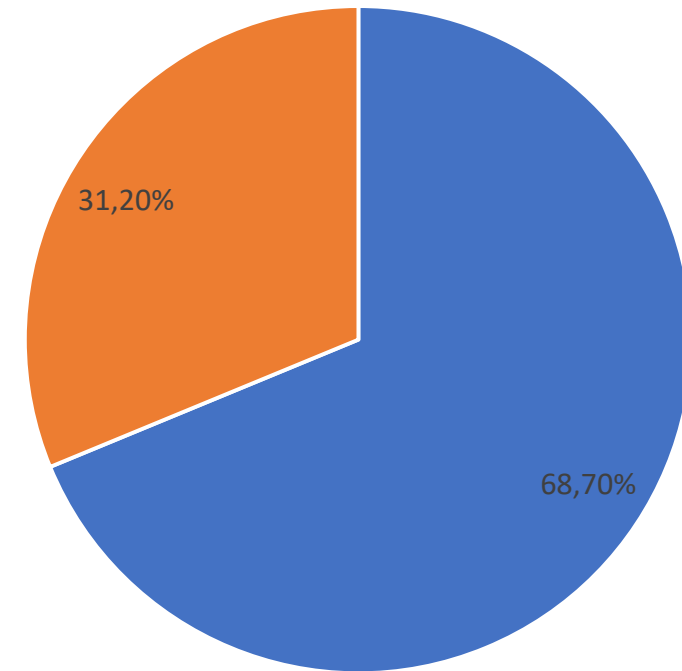
- DAY OF ONSET OF SYMPTOMS OF MUCORMYCOSIS FROM COVID :

DAY OF ONSET OF SYMPTOMS FROM COVID(WEEKS)	NUMBER	%
< 2WKS	11	22%
2 – 4 WKS	30	60%
4 – 6 WKS	4	8%
>6 WKS	5	10%



- PATIENTS WITH ORBITAL INVOLVEMENT

	No. of patients with orbital involvement	%
MALES	22	68.7%
FEMALES	10	31.2%
TOTAL	32	64%



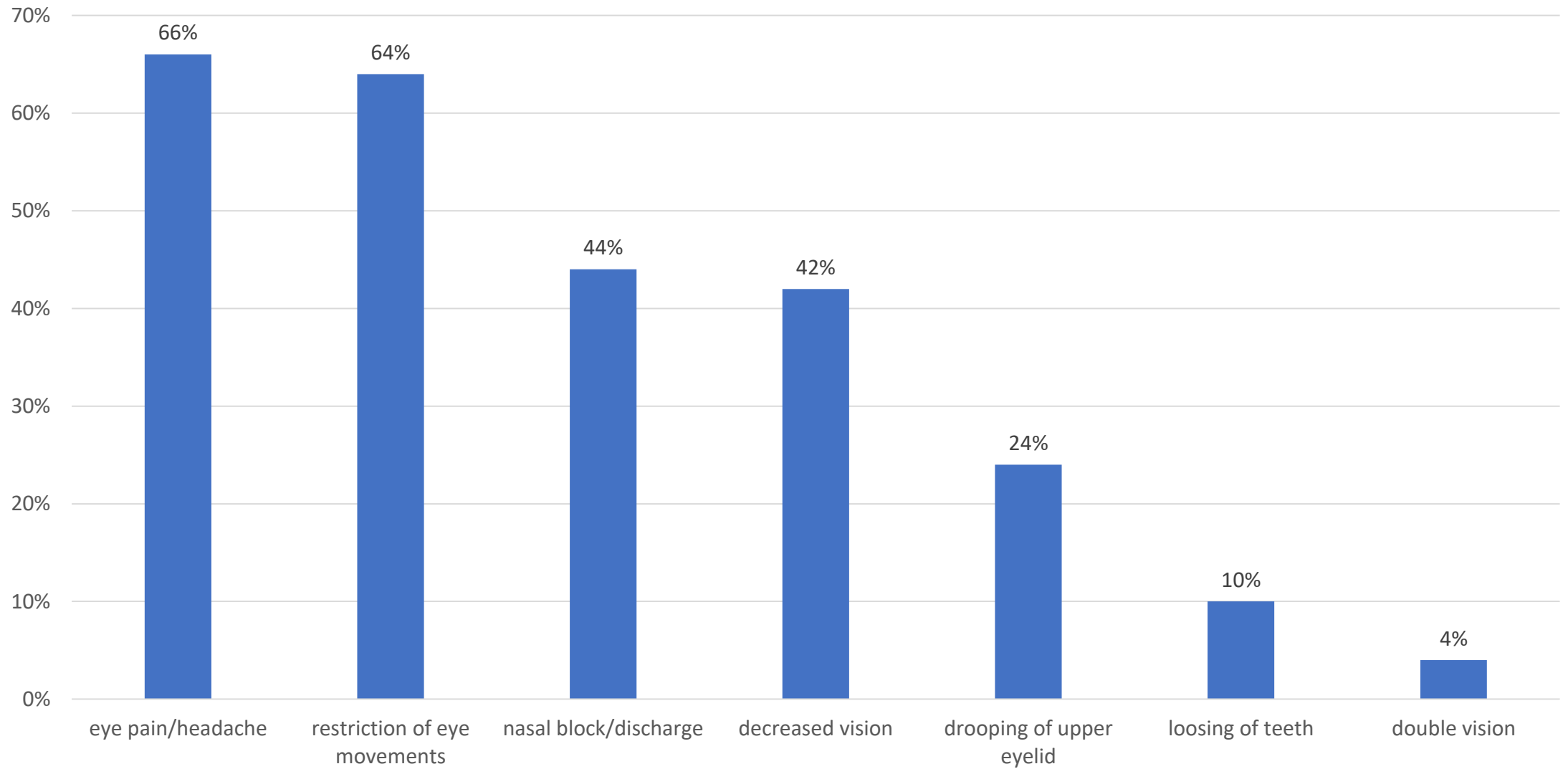
■ MALES ■ FEMALES ■ ■



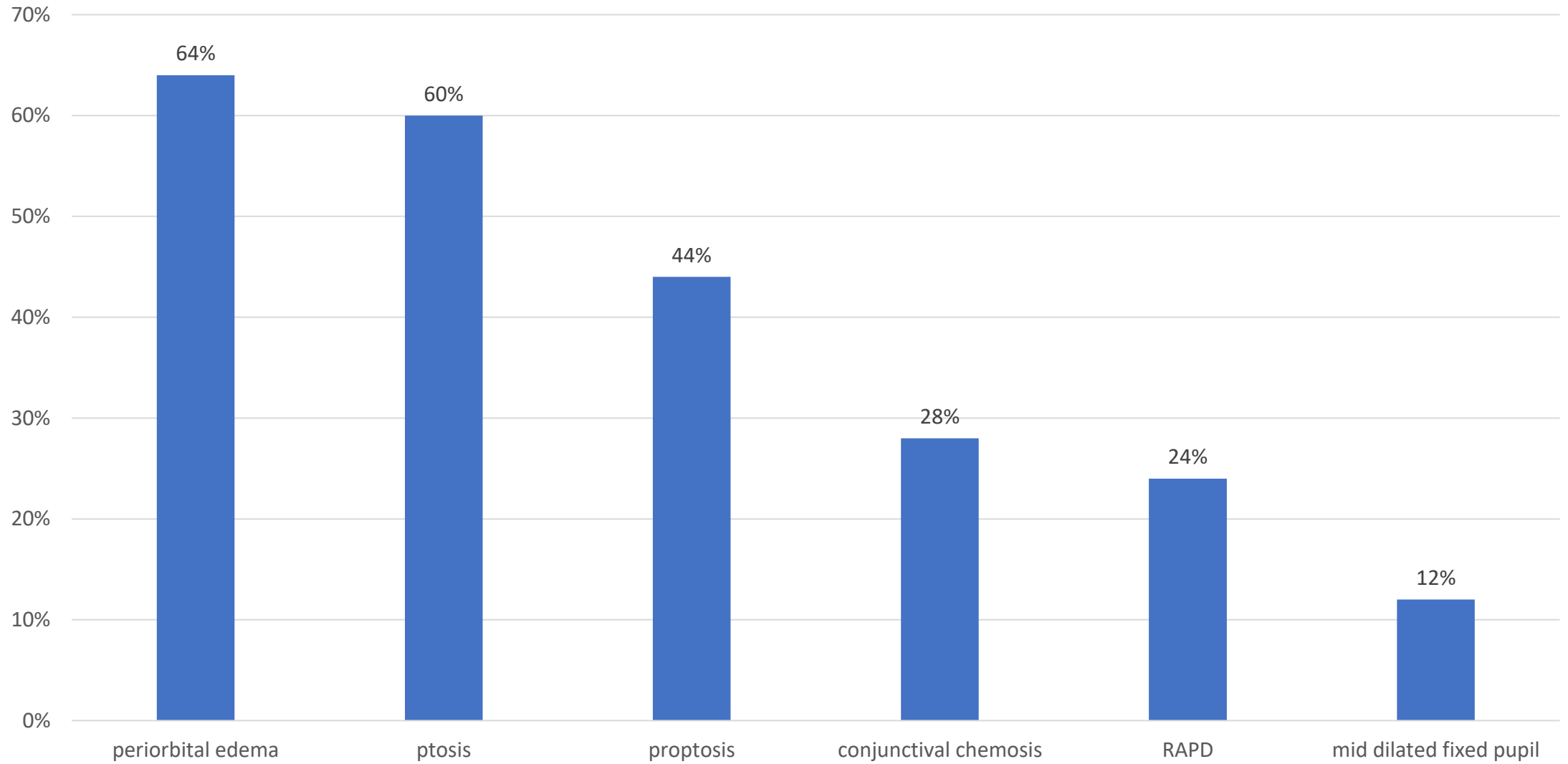
VISUAL ACUITY	NUMBER	PERCENTAGE
NO PERCEPTION OF LIGHT	18	36%
ONLY PERCEPTION OF LIGHT	2	4%
CFCF - CF 3MTRS	5	10%
CF 3MTRS – 6/6	25	50%



Presenting symptoms of patients

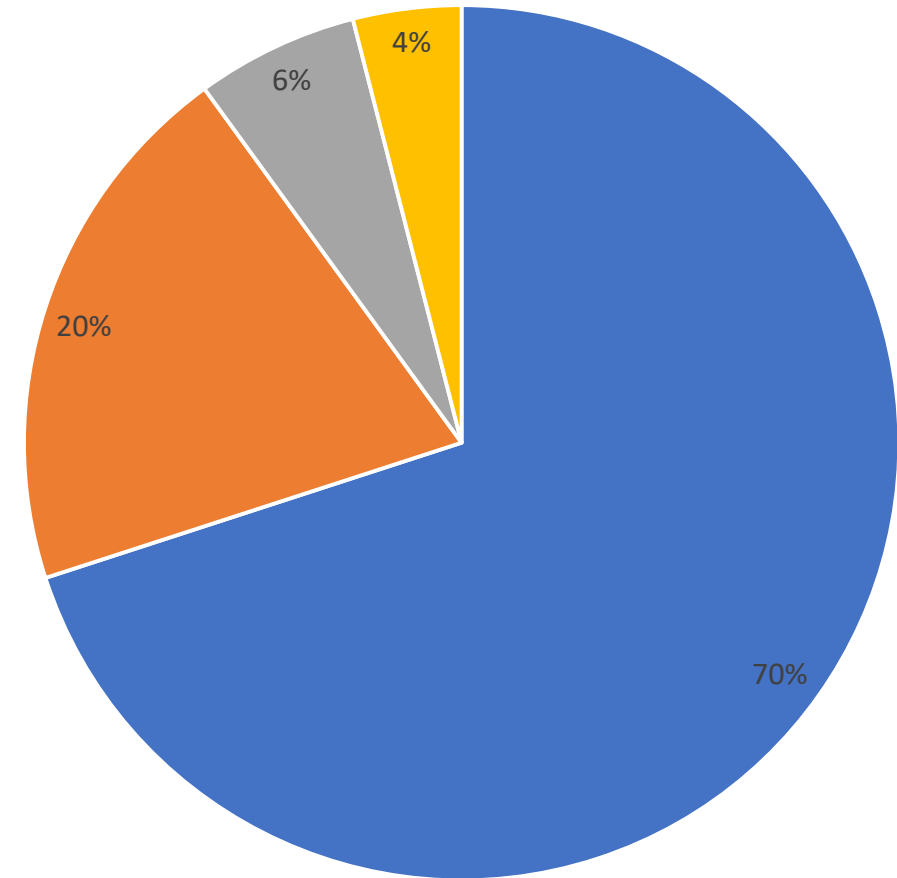


Anterior segment findings



FUNDUS FINDINGS

FUNDUS	NUMBER	PERCENTAGE
NORMAL	35	70%
CRAO	10	20%
OPTIC DISC EDEMA	3	6%
OPTIC DISC PALOR & ATTENUATED BLOOD VESSELS	2	4%



■ NORMAL ■ CRAO ■ DISC EDEMA ■ DISC PALOR



EXTENT OF INVOLVEMENT IN CE MRI

RADIOLOGICAL FEATURES	NUMBER	PERCENTAGE
PNS	50	100%
PNS + INTRA ORBITAL	32	64%
PNS + INTRA ORBITAL + INTRACRANIAL	14	28%



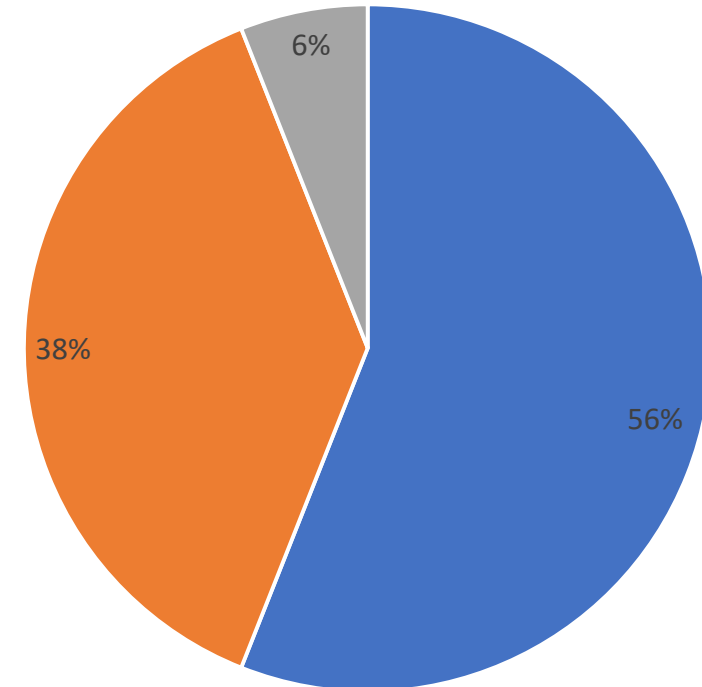
- MANAGEMENT

	NUMBER	%
INTRAVENOUS LIPOSOMAL AMPHOTERICIN B FOLLOWED BY ORAL POSACONAZOLE	50	100 %
SINUS DEBRIDEMENT	50	100 %
ORBITAL EXENTERATION	18	36 %
TRAMB INJECTION	2	4 %



- OUTCOME:

OUTCOME	NUMBER	%
FAVOURABLE	28	56%
UNFAVOURABLE	19	38%
DEATHS	3	6%



■ FAVOURABLE ■ UNFAVOURABLE ■ DEATHS ■



DISCUSSION:

- In a study conducted by Singh et al. 80% cases have hyperglycemia as a risk factor. Our study has reflected their findings in that 70 % of included patients were diabetics.
- Majority of patients presented within 2-4 weeks from onset of covid symptoms (60%).
- Orbital involvement was present in 32 cases (64%), out of which males are 22(68.7%) & females are 10 (31.2%). Same results were found in studies conducted by A Bhansali et al (males -65.71%, females 34.28%).



- All the cases showed involvement of PNS on CE MRI, involvement of PNS & intra orbital extension was seen in 32 (64%), intracranial extension in 14 (28%) cases. Intra cranial extension was found to be more in patients with poor glycemic control & it showed unfavourable outcome.
- All the patients were started with I/V amphotericin B 5mg/kg– OD for 10 days followed by tab. Posaconazole 300 mg OD for 3 months & all patients have underwent sinus debridement.
- Orbital exenteration was done in 18 (36%) which was similar to a study conducted by Tarjani Vivek Dave et. Al (38%). The involvement of orbital apex is an indication for it because, intracranial extension may take place through apex of orbit.



CONCLUSION:

- Immunocompromised states like uncontrolled DM, steroid usage in covid positive patients, are major risk factors for occurrence of rhino orbital mucormycosis.
- CE MRI helps in early detection of extent of disease and helps in planning of management.
- Orbital apex & CNS involvement led to unfavourable outcome in majority of the patients.
- Treating the immunocompromised conditions which led to the disease, systemic antifungals, sinus debridement proved to be the main stay of treatment
- Multidisciplinary timely diagnosis and prompt treatment may significantly improve the prognosis.



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THANK YOU