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The Quality of Life in Post- Mucormycosis Patient

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Abstract:-
Introduction: Mucormycosis disease very well affects the quality of life of patient in all aspect. It affects mainly physical health, psychological health, social relationships, environment, sleep and rest, work capacity may be affected. In psychological aspect bodily image and appearance, negative feelings, self esteem, thinking and learning are also affected.
Material & Methods: Present study was cross sectional observational study conducted in OPD and IPD Department of ENT & Opthalmology, MGM Medical college & Hospital Aurngabad [MS], India diuring 1st August 2021 to 30th September 2021.
Results: In present study we found that the incidence of mucormycosis is more in the age group above 45 years i.e. 78(78%). Mucormycosis is mostly seen in the males more than female i.e. 77(77%). Majority of 39(39.0%) patients were diagnosed with mucormycosis within 30 days of discharge and 10(10%) patients were diagnosed with mucormycosis within 3 months of discharge. Out of 100, 96(96.0%) patients went for the operative procedure. The mean of WHOQOL- Physical Health Domain Scores for the patients was 42.99. The Mean WHOQOL-Psychological Domain Scores for the patients was 46.06. The mean Social Relationship and Environment score were 49.62 & 58.03 respectively.
Conclusion: We concluded that there was higher impact of Quality of Life in Post- mucormycosis patient. However the impact was also affected by many other factors, such as age, comorbidity, severity of illness of patients and the impact is not reduced considerably as time goes by (i.e. even after two months). The Quality of Life in Post-Mucormycosis Patient in term of Physical Health and Psychological health is most affected due to surgical intervention and life threatening disease.

Keywords:- *Quality of Life, Mucormycosis, COVID-19.*

I. INTRODUCTION

Covid-19 pandemic is an outbreak of coronavirus disease that was first identified in December 2019. The severity of the disease ranges from asymptomatic infection to respiratory failure and death [1].

Secondary fungal or bacterial infections or co-infections are important challenges increasing the patient's morbidity and mortality.

Mucormycosis (previously called zygomycosis) is a serious but rare fungal infection caused by a group of molds called mucormycetes. These molds live throughout the environment. Mucormycosis mainly affects people who have health problems or take medicines that lower the body's ability to fight germs and sickness. It most commonly affects the sinuses or the lungs after inhaling fungal spores from the air. It can also occur on the skin after a cut, burn, or other type of skin injury [2] .

Candidiasis and pulmonary aspergillosis have been common fungal infections that were reported as super infections in covid-19patients [3] .

On the other hand, the use of corticosteroids for modulating immune-related lung injury and reducing the mortality rate in the covid-19 patients, that need respiratory supports and supplementary oxygen, may predispose the patients to secondary infections that increase the risk of mortality [4] .

The major risk factors for mucormycosis include uncontrolled diabetes mellitus with ketoacidosis, hematological malignancy, stem cell and solid organ transplantations, Iron chelation therapy with deferoxamine, and corticosteroid drug usage [5] .

Mucormycosis disease very well affect the quality of life of patient in all aspect. It affects mainly physical health, psychological health, social relationships, environment, sleep and work capacity may be affected.

In psychological aspect bodily image and appearance, negative feelings, self esteem, thinking and learning ability is affected.

A. Aims and Objectives:

➢ *Aim:*

To Assess the Quality of Life In the Post-Mucormycosis Patient.

➢ *Objectives:*

- To record the socio-demographic profile of post mucormycosis patients.
- To assess the quality of life in the patients of mucormycosis.
- To assess the change in quality of life in the mucormycosis patients after being operated.

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II. MATERIAL AND METHODS

Research methodology organizes all the components of the study in a way that is more likely to lead valid answers. It has crucial implications for validity and credibility of the study findings.

Research Design: The research design selected for this study is cross sectional observational study.

Settings of the Study: It is the Physical location where study was conducted. This study was conducted at a tertiary care centre at MGM Medical college & hospital of Aurangabad City.

Study Area: OPD and IPD Department of ENT & Opthalmology, MGM Medical college & Hospital Aurngabad [Maharashtra], India.

Data Collection: Data was collected from the Post-Mucormycosis Patient.

Period of Study: The study was conducted from 1st August 2021 to 30th September 2021.

Sampling Technique: Cases were selected using purposive sampling.

Approval for Study: Approval for the study was obtained from the Institutional Ethical Committee of MGM Medical College and Hospital, Aurangabad [Maharashtra State].

Sample Size: For this present study 100 cases were enrolled during study period.

Inclusion Criteria:
- Patient diagnosed with mucormycosis.
- Age group – 18 years and above.
- Patients who were willing to give informed consent to fill the questionnaire.

Exclusion Criteria:
- Patients with impaired capacity to give informed consent.
- Patients who are already diagnosed for cancer or other life threatening diseases.

III. METHODOLOGY

A. Assessment tools
- Demographic variables was recorded on pre-designed Performa.
- Performa included Name, age, sex, address, education, COVID status, Time of mucormycosis diagnosis, time for treatment of mucormycosis will be recorded.

B. World Health Organization Quality of Life (WHOQOL) - BREF:

This instrument is used to produce an overall quality of life profile. It contains 26 questions relating to various domains of the life. Response to each question is scaled on 5 points like scale. The first two items in this scale are examined separately, Question 1 asks about individuals overall perception of QOL and Question 2 is about overall perception of health. Remaining 24 questions are divided in to four domains: physical health, psychological health, social relationships, and environmental domains. It is possible to calculate 4 domain scores. Each domain score indicates individual's perception of quality of life in each particular domain. Domains scores are then transformed to 4-20 and 0-100 scales for to maintain uniformity. If an item is missing from assessment mean was substituted.(7)

C. Procedure of Data Collection:

All the patients who were coming to ENT & Ophthalmology OPD for follow up of mucormycosis and admitted in IPD in MGM Medical College & Hospital were approached for the participation in the study. After written informed consent, they were assessed for inclusion & exclusion criteria. Socio-demographic information were noted. A patient who meets the criteria, further QOL was assessed with the help of the WHOQOL-BREF Questionnaire.

D. Statistical Analysis:

The collected data was compiled in EXCEL sheet and Master sheet was prepared. For analysis of this data SPSS (Statistical Software for social Sciences) software version 20.0th was used. Qualitative data was represented in form of values & percentages and Quantitative data was represented in form of mean & SD etc.

IV. OBSERVATION & RESULTS

Table 1: Demographic profile

Demographic factor		Frequency (N=100)	Percentage (%)
Age group (Years)	18-24	2	2.0 %
	25-34	8	8.0 %
	35-44	12	12.0 %
	45-54	26	26.0 %
	55-65	33	33.0 %
	>65	19	19.0 %
Gender	Male	77	77.0 %
	Female	23	23.0 %
Residential Background	Urban	48	48.0 %
	Rural	52	52.0 %
Occupation	Technical	2	2.0 %
	Clerical	2	2.0 %
	Businessman	10	10.0 %
	Industrial	1	1.0 %
	Skilled	23	23.0 %
	Unskilled	62	62.0 %
Marital Status	Married	98	98.0%
	Divorced	0	0.0%
	Widow / widower	2	2.0%
Religion	Hindu	94	94.0%
	Muslim	5	5.0%
	Christian	1	1.0%
Education	Primary	35	35.0%
	Middle	5	5.0%

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	Higher Secondary	35	35.0%
	Bachelors	24	24.0%
	No Formal Education	1	1.0%
Employment	Unemployed	2	2.0%
	Full Time	25	25.0%
	Self Employed	49	49.0%
	Housewife	20	20.0%
	Retired	4	4.0%
Primary Care Giver	Parents	68	68.0%
	Siblings	32	32.0%

In present study we found that the incidence of mucormycosis was more in the age group above 45 years i.e. 78(78%). Mucormycosis was mostly seen in the males more than female i.e. 77(77%). Mucormycosis have nearly equal prevalence in rural & urban area. In occupational view the disease was more common in the unskilled persons. The patients in the study were mostly married i.e. 98(98%). Most of the patients were from the Hindu religion i.e. 94(94%). Mucormycosis was more seen in the persons who had education more than the higher secondary school i.e. 60 (60%). The disease was more seen in the self-employed persons likely in agriculture field i.e. 49(49%). Most of females affected were housewife. Primary care giver of most of the patients were either spouse or husband. Most of the patients suffering from mucormycosis were diagnosed with it within the 1 month of after getting discharge from COVID treatment i.e. it was around 59(59%). Most of the Patients were admitted up to 1 month for the treatment of mucormyc0sis i.e. 74(74%). In most of the patients operative procedures like FESS (Functional Endoscopic Sinus Surgery) was done i.e around 96(96%).

Table 2 : Time Period of Diagnosis of Mucormycosis

Time Period	Frequency	Percentage
During Covid	15	15.0%
Within 15 Days Of Discharge	05	5.0%
Within 30 Days Of Discharge	39	39.0%
Within 45 Days Of Discharge	01	1.0%
Within 60 Days Of Discharge	30	30.0%
Within 3 Months Of Discharge	10	10.0%

Majority of 39(39.0%) patients were diagnosed with mucormycosis within 30 days of discharge and other 10(10%) patients were diagnosed with mucormycosis within 3 months of discharge.

Table 3: Duration of Treatment of Mucormycosis

Time Period	Frequency	Percentage
Up To 15 Days	11	11.0%
Up To 30 Days	63	63.0%
Up To 45 Days	21	21.0%
Up To 60 Days	05	5.0%

Maximum 63(63.0%) patients received treatment of mucormycosis for 30 days, whereas 21(21.0%) patients received treatment of mucormycosis for 45 days.

Table 4: Details of Operative Procedure

Operative Procedure	Frequency	Percent
Not Done	04	4.0%
Done	96	96.0%
Total	100	100%

Out of 100, 96(96.0%) patients underwent operative procedure and 04(4.0%) of patients did not underwent operative procedure.

Table 5: Mean WHOQOL-Domain Scores

Domains of QOL	Number	Minimum	Maximum	Mean	Standard Deviation
Physical Health	100	20	81	42.99	9.17
Psychological	100	13	75	46.06	8.57
Social Relationship	100	25	75	49.62	9.49
Environment	100	31	75	58.03	6.76

The mean of WHOQOL- Physical Health Domain Scores for the patients was 42.99. The Mean WHOQOL-Psychological Domain Scores for the patients was 46.06. The mean Social Relationship and Environment score were 49.62 & 58.03 respectively.

V. DISCUSSION

In our study we found that the mean age of patient was 62.27±9.38 years that is nearly related to study of Sandipta Mitra et al[8] they found the mean (±S.D.) age of the patients was 57±13 year. As the patients of mucormycosis were more common reported in above 60 years of age.

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In present study we found that male predominance was more than the female that is 77%. In the other study done by Kiran Bala they also found the similar result [9] , Sandipta Mitra et al also found male predominance more than female i.e around 71%.

In present study, we found that there was nearly equal number of patients from urban & rural area. Most of the patients of mucormycosis in our study were unskilled by profession i.e. 62%. This may be due to negligence towards the health issues by them. Most of the patients in present study were married i.e. 98%. Most of the patients were educated more than higher secondary school i.e. 59%. Most of the patients from this study were self employed i.e. they are doing agriculture work etc. They were around 49%. Many of the patients were getting primary care from their spouse or husband i.e. around 68%.

Almost all patients in this study were tested COVID positive in past. In a study by White et al., 26.7% of the patients with COVID-19 were found to have invasive fungal infection [10] . Most of the patients were diagnosed with mucormycosis within the 30 days of getting discharge from the hospital. In other study by Sandipta Mitra et al found that the mean (± S.D.) time of onset of symptoms since onset of COVID-19 symptoms was found to be 18 (± 4) days(8).

Around 74% patients received the treatment for 30 days for mucormycosis during admission in the hospital. In present study around 96% patients undergone surgical procedure. Similar findings was noted by Sandipta Mitra et al [8] & observed that 87.5% patients underwent ESS with sinus debridement with /without orbital clearance.

The mean of WHOQOL- Physical Health Domain Scores for the patients was 42.99. The Mean WHOQOL-Psychological Domain Scores for the patients was 46.06. As in mucormycosis physical health and psychological health is mostly affected due to surgical intervention and life-threatening disease. Also among these social relationship and surrounding environment was affected and the mean scores were 49.62 & 58.03 respectively.

VI. CONCLUSION

We concluded that there was higher impact of Quality of Life in Post- mucormycosis patient. However the impact was also affected by many other factors, such as age, comorbidity, severity of illness of patients and the impact is not reduced considerably as time goes by (i.e. even after two months). The Quality of Life in Post- Mucormycosis Patient in term of Physical Health and Psychological health is most commonly affected due to surgical intervention and life-threatening diseases. So for treatment of mucormycosis, psychological counselling should be part of the treatment for all patients to improve their quality of life. Although the long-term impact of mucormycosis is not fully developed and require further observation.

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