

Mucormycosis in Covid-19 (The Black Fungus Hitting COVID-19 Patients)

Ms. Sunita Devi¹, Dr. Priyanka Chaudhary², Dr. Rajwant Kaur Randhawa³

¹Pursuing M.sc (Nursing), ²Associate professor (MSN), ³Professor (CHN),
^{1,2,3}Desh Bhagat University, Mandi Gobindgarh, Punjab, India

ABSTRACT

As COVID-19 cases are increasing rapidly in India again and making our lives hard, there's a nasty and rare fungal infection affecting some coronavirus patients and it is giving the country a double blow. Fungal infections can be devastating and very harmful. We have seen various reports of fungal infection with mucormycosis, termed as "Black fungus", in patients having COVID-19 or who are recovering from the coronavirus. India has registered around 11,717 cases of black fungus till May 25. Maximum of these cases are being reported from Gujarat and Maharashtra only. There are 2,859 cases of black fungus so far in Gujrat, Maharashtra has 2,770 cases, followed by 768 mucormycosis cases in Andhra Pradesh, 752 in Madhya Pradesh, and there are 744 cases in Telangana. Together, these five states have more than 65 percent of India's total black fungus cases. The capital city has reported 620 cases of black fungus. Union Minister Mr. Sadananda Gowda said on 26th May that there are 119 mucormycosis cases in Delhi.

KEYWORDS: Increasing cases of rhino-orbital mucormycosis in people with COVID-19 are being recently reported

INTRODUCTION

India has declared a "black fungus" epidemic, as cases of this deadly rare infection has increased rapidly in patients recovering from Corona Virus. The fungal disease, called mucormycosis has a 50% mortality rate. The potentially lethal fungal infection is likely increasing due the surge of people with COVID-19 fighting the coronavirus can leave people's immune system compromised, which means they may have a higher chance of developing mucormycosis. According to the Centers for Disease Control and Prevention (CDC) mucormycetes, which are mostly present in soil or organic matter like compost piles. COVID-19 patients are particularly susceptible because not only does the virus affect their immune system but treatment drugs can also suppress their immune response. Due to the factor, COVID-19 patients face a renewed risk of failing against the organisms such as mucormycetes, a referring fungi that cause mucormycosis. COVID-19 patients getting the oxygen therapy may have humidifiers in the ICU ward which can increase their exposure to moisture, and make them more susceptible to fungal infection. The use of tap water in the flow meters of the oxygen cylinder is also blamed for fungal infection. Not just this, other patients who has weak immune system, consume too much steroid, voriconazole therapy and patients with diabetes are also at higher risk of infection.

Reviews

Prakash et al.2019

A nationwide multi-center study of 388 confirmed or suspected case of mucormycosis in India prior to COVID-19 found that 18% had DKA and 57% of patients had

How to cite this paper: Ms. Sunita Devi | Dr. Priyanka Chaudhary | Dr. Rajwant Kaur Randhawa "Mucormycosis in Covid-19" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-4, June 2021, pp.1189-1190,

URL:
www.ijtsrd.com/papers/ijtsrd42524.pdf



IJTSRD42524

Copyright © 2021 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



uncontrolled DM. Similarly, in a data of 466 case of mucormycosis without COVID-19 in India.

Sen et al.2021

Recently reported a series of 6 cases of COVID-19 disease with rhino-orbital mucormycosis. One patient in this series had concurrent COVID-19 and mucormycosis at admission, while five other patients developed mucormycosis during treatment with systemic steroid for COVID-19.

A recent report of COVID-19 associated mucormycosis showed that 94% of patients had diabetes. When diabetes is not controlled properly, blood sugar is high and tissues become relatively acidic, it become a good environment for Mucorales fungi to grow. People with diabetes and obesity tend to develop more severe COVID-19 infection. It means they are more likely to received corticosteroids, which are frequently used to treat COVID-19. But those having corticosteroids along with diabetes have higher risk of mucormycosis.

Incidence Rate:

The incidence of mucormycosis has over the year increased in India, According to Hariprasath Prakash, Department of Public Health, international higher school of medicine, Kyrgyzstan, and Arunaloke Chakrabarti, head of the department of medical microbiology, postgraduate institute of medical education and research, Chandigarh.

"An increasing trend of mucormycosis from a single center at successive periods, with an annual incidence of 12.9 cases

per year during 1990-1999, 35.6 case per year during 2000-2004, and 50 cases per year during 2006-2007. The overall numbers increased from 25 cases per year (1990-2007) to 89 cases per year (2013-2015)".

"A multicenter study across India reported 465 cases from 12 centers over 21 months, the study reported an annual incidence of 22 cases per year and average of 38.8 cases for each participating center".

So, it is difficult to determine the exact incidence and prevalence of mucormycosis in India population. "The computational-model-based method estimated a prevalence of 14 cases per 100,000 individuals in India.

Signs and Symptoms:

The initial feature of mucormycosis is nasal discharge from the nose. On endoscopic view of the nasal cavity a black eschar (slough or dead tissue) coated masses will be present which gives away the diagnosis. As the disease grow, the palate may be destroyed as a large black necrotic mass may be seen on opening of the mouth. When the orbit is involved there will be proptosis, loss of movements of the eyeball with consequent double vision. Eye pain, redness with blindness can follow. If the brain is invaded due to blood vessel blockage, there can be strokes, hemorrhages, and can even lead to death. Patients can also have headaches, drowsiness, limb weakness and seizures. In lung mucormycosis clinical features are similar to COVID-19 including fever, cough, breath shortness, making clinical diagnosis difficult.

Treatment and Prevention:

Confirming a fungal lesion, immediate surgical debulking is a must step. The surgery can be radical and disfiguring but is acceptable considering the existential crisis of leaving behind any residual tissue. The entire nasal cavity needs to be

scoured and all fungal, necrotic tissue need to be removed. If the orbit is involved surgeries as serious as exenteration of the eye socket contents may be required. Intracranial decompression may be required if the infection has invaded the brain. Prevention is always better than cure. Maintaining the good hygiene and cleanliness is a must. Regular oral hygiene care with mouthwash, povidone-iodine gargles must be done and use of steroid must be limited to no more than necessary with strict blood glucose control. Stay indoors as much as possible, do regular exercise, at home surrounding must be clean and free from dust.

Conclusion:

To control these fungal infections, it will be required to increase awareness, better tests to diagnose them early, along with a focus on controlling diabetes and using corticosteroids wisely. Patients' needs to have access to timely surgery and antifungal treatment. But there should be more research into prevention of these infection.

References:

- [1] <https://www.bbc.com>
- [2] <https://www.livemint.com>
- [3] <https://www.theguardian.com>
- [4] <https://www.healthline.com>
- [5] <https://www.cnn.com>
- [6] <https://doi.org/10.1016/j.dsx.2021.05.019>
- [7] Indian journal of ophthalmology: doi:10.4103/ijjo.IJO_3763_20
- [8] <https://www.hindustantimes.com>