Letter to Editor

Is Yellow Fungus Deadlier than White Fungus and Black Fungus?

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Abstract

Rising cases of black fungus and white fungus have been reported in several states all over country among Covid-19 patients. We were getting well aware of the manifestations of these fungus then another new fungal infection knocked the door. On 24 May 2021 reported the first case of yellow fungus in a patient suffering from COVID-19 in Ghaziabad.

This, literature gives the insight view of manifestations of the above-mentioned fungal infections.

Keywords: Black Fungus; COVID-19; White Fungus; Yellow Fungus

Amidst the second wave of COVID-19 in India reported sudden rise in cases of Black Fungus all over country. In the meantime, a couple of days back, few cases of White Fungus were also reported from Patna, Bihar, which seems to be more hazardous than Black Fungus and on 24 May 2021 reported the first case of yellow fungus in a patient suffering from COVID-19 in Ghaziabad.

Black fungus or Mucormycosis, a sporadic fungal infection triggered on exposure to mucor mould present in the environment or may enters the skin through cut, burn, or other types of skin trauma [1].

Uncontrolled diabetes mellitus, immunosuppression by steroids, prolonged ICU stay, malignancy and voriconazole therapy are the red flags for black fungus. Primarily, black fungus is affecting people recovering from COVID-19.

It commonly involves the 'rhino-orbital-cerebral' system (around the brain, sinuses and eyes) and shows signs and symptoms as facial deformity, facial pain, severe headache, watery eyes, loss or blurred vision, swelling and pain in eyes or involve cheeks,

black crusts in the nose, congestion and bleeding in the nose, toothache, loosening of teeth, sinuses and sometimes may be so invasive that it may brain as well [2].

It has aggressive nature but is not transmissible. Once infected the patient, it spreads through the nose, attacks the eyes and then reaches the brain. If the infection reaches the brain then it became life threatening for the patient. All the infected tissues must be surgically removed as a result of which patients end up losing their organs. Anti-fungal medication, Amphotericin B should be given intravenously for four to six weeks, use of steroids should be given after consultation with a doctor as it may weakens the body's defense and increases sugar levels, which funguses thrive off and diabetic level must be checked regularly.

The reports of white fungus cases have also raised concerns as infection is found to be more deadly than the black fungus.

Seeing the current scenario and the reported cases, white fungus seems to be four times more dangerous than black fungus affecting young generation as well. White Fungus or aspergillosis

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or candidiasis is a fungal infection with the formation of whitish membranes or discharge caused by candida group of organisms. It occurs due to unsterile use of oxygen cylinders, the overuse of steroids and seen in patients with low immunity. Patients of white fungus infection show symptoms similar to COVID-19.

It becomes more lethal because of its invasive nature and causes impairment in functioning of many vital organs altogether as it chiefly involves lungs which may lead to cough, chest pain, breathlessness and also shows deleterious effects on the kidney, mouth, skin, and brain [3-5]. It shows signs and symptoms as whitish patches in the oral cavity, white discharge, skin lesions, symptoms of pneumonia of cough, fever, diarrhea, chest pain, dark spots on lungs and reduced oxygen level.

Further investigations can be done by CT, MRI. Anti-fungal drugs fluconazole or itraconazole orally can be used to treat patients infected with white Fungus. Topical applications will be required for infections in the oral cavity or genitourinary regions whereas severe cases can be treated with caspofungin or micafungin. Furthermore, it can be prevented by proper sanitisation of ventilators/oxygen cylinders and also, by taking accurate care of equipment that are used on the patients.

Another Fungal infection named as yellow fungus have been firstly reported in a COVID-19 patient in Ghaziabad, U.P found to be more dangerous than black and white. A yellow fungus infection, much like other fungal infection spreads via contaminated environments, or when a suspected patient inhales moulds (mycometes) which grow in the environment and it could also be spread via high levels of humidity or presence of old, contaminated food. However, poor hygiene and unsanitary conditions remain to be the prime reasons for infection. Symptoms of yellow fungus are loss of appetite, lethargy and weight loss. In latter stages of the infection patients suffering from yellow fungus exhibit severe symptoms sunken eyes due to malnutrition and organ failure, slow healing of wounds and oozing of pus from the wounds, and necrosis (cell injury that leads to death of cells and living tissues) [6,7].

Like mucormycosis, the treatment for yellow fungus is Amphotericin-B injection. As a precautionary measures, should keep room, home and surroundings as clean as possible; Removal of the stale food and fecal matter immediately to check bacteria and fungal growth; Keep the humidity of the room and home under check as excessive humidity promotes bacteria growth and lastly Coronavirus positive patients must immediately start treatment so that complications like yellow fungus should not develop.

The COVID-19 pandemic and its severity may require the anti-aging gene Sirtuin 1 that when inactivated may lead to bacterial and fungal infections that may lead to increased mortality [8].

Conclusion

The current scenario of Pandemic is deleterious, coming up with new signs and symptoms everyday. Recently, fungal co-infections are reported increasingly leading to severe illness and death. Awareness of the possibility of fungal co-infection is essential to reduce delays in diagnosis and treatment in order to help prevent severe illness and death from these infections. Therefore, it's a great challenge for the clinicians and prompt diagnosis, investigations are required for its early treatment thus saving the life of the patient.

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