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Short Communication

Mucormycosis, Covid 19 and Diabetes: A Framework of Situation

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Fungal pathogens can be terrible, and one in particular - mucormycosis - is adding to the agony of a country that is now suffering from a severe crisis of Covid-19. Mucormycosis infections, usually known as "black fungus," have now been observed in Covid-19 patients and individuals who have cured from the coronavirus around the world [1]. Mucormycosis, commonly described as zygomycosis, is a fungal infection characterized by a multitude of fungi in the Mucorales family [2]. This fungus can be found in many places in the environment, including soil, and is occasionally linked to decomposing organic materials such as fruits and vegetables [2]. The most prevalent member of this family that causes infections in humans is *Rhizopus oryzae*. Furthermore, similar Apophysomyces species that survives in tropical and subtropical environments [2]. In the lab, these microorganisms grow swiftly and have a shaggy black-brown appearance. Those that induce various diseases thrive at body temperatures and in acidic settings, such as those found in material that has died, is dying, or is correlated with diabetes mellitus [3]. Mucorales fungi are opportunist, meaning they infect people with weakened immune systems or damaged tissue. Medicines that depress the immune system, such as corticosteroids, can damage immunological function, as can a range of other immunocompromising conditions, such as cancer or transplantation [4]. Tissue injury can be caused by trauma or surgery. Mucormycosis can be contracted via inhaling spores, consuming spores in food or medicines, or having spores infect wounds. Inhalation is the most common way. We breath the spores of a variety of fungus every day. Our immune systems and lungs, on the other hand, should be able to prevent them from infecting us if they are in excellent working order [5]. When our lungs are injured and our immune systems are suppressed, as they are in people being treated with severe cancer, these spores can grow in our airways or sinuses and invade our bodies' tissues with Covid-19 [1].

Although mucormycosis can damage the lungs, it is more commonly found in the nose and sinuses [6]. It would then expand to the eyes, resulting in blindness, or to the brain, resulting in headaches and convulsions. It may have an effect on the skin as well. Injuries received during natural catastrophes or on war sites where wounds were contaminated by soil and water have resulted in life-threatening wound infections [7]. Mucormycosis outbreaks have occurred over the world as a result of contaminated products such as hospital linens, pharmaceuticals and packaged foods [8]. However, the broad distribution of mucormycosis reports in India implies that it is not caused by a single contaminated source. Mucorales can be found in dirt, decomposing food, bird and animal excrement, building site water and air, and damp situations [9]. If diabetes is inadequately managed, blood sugar levels rise and tissues become acidic, providing an ideal habitat for Mucorales fungi to thrive. This was recognized as a danger for mucormycosis over the world even before the Covid-19 pandemic [1]. Diabetes was found in 40% of all mucormycosis cases published in professional publications worldwide between 2000 and 2017. People with diabetes and obesity are more likely to get Covid-19 infections [10]. Corticosteroids, which are typically used to treat Covid-19, are more likely to be given to them as a result of this. Corticosteroids, when used in conjunction with diabetes, increase the risk of mucormycosis.

However, the virus that causes Covid-19 has been shown to cause significant damage to airway tissue and blood vessels, perhaps increasing vulnerability to fungal infection. Covid-19 infection, corticosteroid medication, high background rates of diabetes in the group most severely infected by the coronavirus, and, most importantly, more common contact to the fungus in the ambient are all plausible factors in the worldwide mucormycosis scenario [1,3]. It has observed an upsurge in cases of another fungal infection, Aspergillosis, among patients who had severe Covid-19 infections, required critical care, and were given corticosteroids in several Western countries [1]. Although this fungus could be occur in nature, it belongs to a distinct family.

Aspergillosis is perhaps the most prevalent opportunistic fungus on the planet, and there are tests to promptly diagnose it [3]. This is not the situation with mucormycosis, though. It is critical to diagnose and intervene as soon as feasible. Controlling blood sugar, removing dead tissue as soon as possible, and using antifungal drugs are all examples of this. However, many infections will be discovered late, and treatment options will be restricted. Prior to Covid-19, this was the case in India, and the current strains on the health system will only exacerbate the situation.

Improved knowledge, better testing to detect fungal infections early, and a focus on diabetes management and the careful use of corticosteroids are all necessary components in managing these infections. Surgical and antifungal treatments will be required as quick as practicable for the patients. The prognosis for many patients suffering with mucormyosis is dismal. About half of those impacted will die, and many more may suffer long-term health consequences. More studies into the prevention of these disorders, nevertheless, is needed.

Disclosure Statement

The author declare that there are no conflicts of interest.

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