Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Mucormycosis: A killer in the shadow of COVID-19

Dear editor,—I write intending to bring attention to Mucormycosis: a fungal infection brimming a war in the shadow of COVID 19 in India.

Caused by a group of ubiquitous molds called mucoromycetes, Mucormycosis leads to an angio-invasive infection, of which rhino-orbital-cerebral and pulmonary manifestations seem to be taking the limelight in the COVID 19 setting. Even before COVID 19, India has been showing a phenomenal increase in cases, this is largely attributed to the fact that India is home to the second largest population of diabetics in the world, of which around 70% are uncontrolled; and as Mucormycosis finds its patients in the immunocompromised, this proves to be a major risk factor. When this large diabetic population is coupled with COVID 19: which affects the immunity not only directly by reducing T lymphocytes, CD4+, and CD8+ cells, but also indirectly through its treatment regimen, involving steroids and other drugs such as remdesivir which are known to bring about immunosuppression, it provides Mucormycosis the perfect conditions to break out in epidemic numbers [1].

As of present, India is reporting patients with a high rate of associated mortality from Surat, Delhi and Pune, with the possibility of underreporting in many areas. The clue for successful management lies in early diagnosis, and early diagnosis can be guided by suspicion based on subtle clinical features; but to recognize the signature of mucormycosis, physicians need to have seen a critical number of cases. The common symptoms associated with the disease include headache, nasal congestion, black crusts in the nose, facial pain, swelling in cheeks and eyes and loss of vision or pain in the eyes [2]. Symptoms of pulmonary manifestation can be alarmingly similar to those of COVID 19 and influenza; including fever, cough and shortness of breath. Even before the onset of clinical symptoms, it is encouraged to be wary of patients with risk factors, such as diabetes, prolonged administration of steroids and oxygen, any co-morbidities or history of treatment with immunosuppressive drugs; however, it must be noted that plenty of cases have presented with absolutely no risk factor other than a history of COVID 19 and its recommended steroid therapy, making it all the more frightening.

With the overwhelming of hospitals by COVID 19 patients, and the dilution of various physicians to cover the lack of manpower, the reliability of discovering a case through clinical diagnosis and diagnostics falls low, and perhaps this can be an explanation for the higher mortality rate seen now (~87%) as compared to non-covid times (~50%) [3,4]. Any erroneous diagnosis, does more harm as the wrongly prescribed antibacterial or antifungal drugs may only aggravate and exacerbate the condition. Therefore, now more than ever, physicians must speculate a possible case of Mucormycosis when confronted with positive symptoms or signs.

One can rightly estimate that the refusal to pay heed to the rising numbers can be costly for the country, and in many places, we are already seeing these effects; as the availability of liposomal amphoterin B, the drug of choice in treating Mucormycosis, is falling short. With many physicians claiming to resort to a more toxic amphotericin b deoxycholate, and rising costs of available liposomal preparations, the country must get prepared in order to escape a future of panic and deaths. We are most definitely still in the early stages as many states have not yet reported cases, but the graph is expected to show only increasing numbers as indiscriminate use of steroids continues, with self-prescription not uncommon.

To fight a war is one thing, to fight two simultaneously is another, especially when one has already caused and is continuing to cause great destruction. Mucormycosis has been seen presenting itself in COVID 19 patients merely two to three days following their recovery, the repercussions of this cannot be measured only in terms of the mortality the disease causes; the financial burden, the mental strain, the future of the family, all should be considered. The only foreseeable way to overcome this added load on the already saddled back of India is to revaluate the usage of steroids in terms of dose and duration, alert the practicing physicians to prevent overlooking of the disease, all the while maintaining self-hygiene along with clean environment near your surroundings; after all, 'Prevention is better than cure'.

Declaration of Competing Interest

None.

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