



New York

Cite this as: *BMJ* 2023;381:p1378
<http://dx.doi.org/10.1136/bmj.p1378>
 Published: 15 June 2023

Fungal infections are especially dangerous for covid-19 patients, CDC study warns

Janice Hopkins Tanne

Patients admitted to hospital with covid-19 were more likely to die if they also had a fungal infection, a study from the Centers for Disease Control and Prevention has found.¹

“Covid-19 infection is a substantial risk factor for certain fungal infections, particularly those caused by invasive moulds, likely because of covid-19 related immune system dysregulation and immunosuppressive therapies,” the researchers wrote in *Emerging Infectious Diseases*.

During the pandemic patients dually infected with covid-19 and a fungal infection had 48.5% mortality, compared with 12.3% in patients who had only fungal infections.

Dual covid-19 and fungal infections led to longer hospital stays, higher rates of intensive care treatment, more use of invasive mechanical ventilation, and more deaths, regardless of the specific fungal pathogens involved, the study said. It has called for better surveillance of fungal diseases, especially during respiratory virus pandemics.

Fungal infections are costly for US healthcare, totalling about \$6.7bn in 2018. Hospital admissions involving fungal infections have increased 8.5% each year in the US from 2019 to 2021, and in 2021 they caused more than 7000 deaths. Risk factors for fungal infections include environmental exposures and underlying conditions such as being immunocompromised.

In the study, researchers used a US hospital database containing de-identified data on patients admitted to more than 1000 non-government, community, and teaching hospitals. During 2020-21, 39 423 patients were admitted to hospital with fungal infections and 5288 of those (13.4%) also had covid-19 infections.

In covid-19 patients who also had fungal infections, the two most common fungal pathogens were *Aspergillus*, involved in 27.8% of cases, and *Candida*, involved in 21.5%. Other fungal pathogens infecting these patients were *Coccidioides*, *Pneumocystis*, *Histoplasma*, *Cryptococcus*, *Blastomyces*, Mucorales species, and other specified and unspecified fungi.

The median age for patients with dual infections was 63, compared with 61 for those with only fungal infections. Men were more likely to have a fungal infection than women and made up 59.9% of patients with dual covid-19 and fungal infections and 57.5% of those with only covid-19 infection. In patients admitted to hospital with dual infections the highest percentages of deaths involved aspergillosis (57.6%), invasive candidiasis (55.4%), mucormycosis (44.7%), and unspecified mycoses (59.0%).

The authors said that consistent with national mortality data, hospital admissions of patients with dual infections “disproportionately occurred among non-white male patients in the western United States.”

“Racial or ethnic disparities observed for fungal infection associated hospital admission rates might relate to long standing inequities in social health determinants such as lack of access to medical care or occupational exposures, and prevalence of underlying conditions (such as diabetes), that might increase fungal and covid-19 infection risk among certain minority groups,” they continued.

The researchers have said the findings highlight the importance of “maintaining a high index of clinical suspicion for fungal infections in patients at high risk, including those with covid-19,” as well as the need for increased fungal disease surveillance.

1 Gold JAW, Adjei S, Gundlapalli AV, et al. Increased hospitalizations involving fungal infections during COVID-19 pandemic, United States, January 2020-December 2021. *Emerg Infect Dis* 2023. doi: 10.3201/eid2907.221771.

This article is made freely available for personal use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.