

Fungi are the World's Most Dangerous Emerging Microbes

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The year was 2020, and it was the middle of the second wave of the COVID pandemic in the United States. Cases had surpassed 2.4 million, and deaths from the novel coronavirus were approaching 125,000. Tom Chiller, at his Atlanta home office, looked up from his e-mails and ran his hands over his shaved head. In normal times, Chiller is a physician and epidemiologist at the US Centers for Disease Control and Prevention, where he is in charge of the unit that monitors health concerns from fungi such as moulds and yeasts. In March, when the US began to recognise the magnitude of the threat posed by the new virus, New York City was put on lockdown, and the CDC urged practically all of its hundreds of staff to work from home, he put that expertise on hold. Chiller had been a part of the public health agency's difficult and thwarted fight against COVID ever since. Its personnel had been collaborating with state health officials, tracking reports of cases and deaths and determining which jurisdictions needed to be notified [1].

Scientists are concerned that some fungus has lately gained antibiotic resistance. Patients with weakened immune systems are particularly sensitive to fungi like *C. auris*. COVID-Antibiotics can render hospitalised patients vulnerable against superbugs, according to 19 studies. Drug-resistant germs topped the Centers for Disease Control and Prevention's list of urgent threats before scientists learned about COVID-19. For years, experts have warned against the overuse of antibiotics, fearing that they will breed dangerous superbugs, or bacteria that are resistant to antibiotics. Fungi, on the other hand, have recently begun to develop resistance against drugs used to treat them. *Candida auris*, for example, is known to infect the most susceptible people in hospitals and nursing homes and to defy most antifungal medicines. Infectious disease experts were ready for the hazardous fungus before it arrived in the United States in 2016, having seen it wreak havoc in other nations, according to Maryn McKenna of Scientific American [2].

According to estimates from the Global Action Fund for Fungal Infections, more than 300 million people are affected with fungal illnesses each year, with 25 million at high risk of dying or losing their sight - more than the annual mortality from malaria or tuberculosis. There were around 1,500 cases of *C. auris* in the United States by the end of 2020, spread over 23 states. For some, COVID-19 put an end to the growing anxiety about *C. auris*, but others were concerned that the virus and the fungus might collide [3].

When the immune system is out of control, several therapies used to treat COVID-19, such as steroids, inhibit it. Patients are left vulnerable to opportunistic infections such as *Candida auris*, *Aspergillus fumigatus*, and other drug-resistant bacteria as a result of this. Hundreds of cases of *C. auris* were reported in hospitals and long-term care institutions in Los Angeles and Orange counties; in India, the fungus invaded a 65-bed ICU and killed two-thirds of patients who got it in addition to COVID-19. The fungus is so widespread that it is wreaking havoc on healthcare systems. Before the epidemic, a man died at Mount Sinai Hospital after a 90-day struggle with *C. auris*. Because the entire area was infested, the hospital had to bring in special cleaning equipment and even tear up some of the floor and ceiling tiles [4,5].

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