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Current major event

Black fungus: a reemerging infection

Black fungus, a colloquial term for the diagnosis of mucormycosis, is a rare fungal infection known to occur in severely immunocompromised patients. Mucormycosis is not transmitted by contact between people or between people and animals.

Editorial note

The incidence rate of mucormycosis globally varies from 0.005 to 1.7 per million population. In a systemic review and meta-analysis of 851 cases published in 2018, death was reported among 389 patients (46%). The current surge is higher in those with pre-existing diabetes and those on systemic corticosteroids.

According to a press release by the Directorate of Health in Sulaimaniyah, Iraq, one fatal case of black fungus was reported as of 1 June 2021. A 78-year-old man with uncontrolled diabetes and hypertension was admitted to the hospital due to COVID-19 two weeks before his death. He was on recovery from COVID-19 but died of black fungus infection, as confirmed later by laboratory test.

There are a number of media reports of black fungus cases in Bangladesh, Egypt, India, Iran and Pakistan among COVID-19 patients with some claiming a link between black fungus and COVID-19, or even a specific variant of SARS-CoV-2. However, there is no evidence that black fungus is associate with COVID-19. The disease is very rare and can occur independently of COVID-19 let alone any specific variants.

The main risk factors for black fungus are severe immunosuppression, and it might show in very few COVID-19 patients due to low immunity and misuse of corticosteroids for a long time. Corticosteroid therapy is essential for the treatment of severely ill COVID-19 patients. However, prolonged use should be avoided as corticosteroids can weaken immune systems. Other risk factors include diabetes (especially when it is poorly controlled), low white cells, cancer, organ transplant, iron overload, kidney problems, long-term steroids or immunosuppressant use, and to a much lesser extent of HIV/AIDS.

The infection is caused by exposure to the fungus in the environment, commonly in soils, decomposing organic matter (such as rotting fruit and vegetables), and animal manure. Spores can be spread most often through inhalation, contaminated food or open wounds. The symptoms depend on where in the body the infection occurs. It most commonly infects the sinuses and brain, resulting in a runny nose, one-sided facial swelling, pain, headache, fever and tissue death. Although rarely observed, it can also infect the lungs, stomach, intestines and skin.

Mucormycosis is difficult to treat, sometimes requiring both intravenous antifungal therapy and surgical removal. A mucormycosis patient has to closely follow the advice of their health care provider.

The best way to prevent mucormycosis is to avoid the abuse of steroids, control diabetes well, and detect the disease early through increased clinical awareness.

Black fungus (Mucormycosis)

How is mucormycosis recognized?

- Swelling of the face and around the eye, usually on one side.
- Facial pain or headache, usually on one side.
- Red eye, usually on one side.
- Black patches on the nose or the roof of the mouth.
- Fever.

How is mucormycosis detected? A health care provider can:

- Take a sample from the inside of the nose or a sinus for laboratory testing.
- See the fungus under a microscope or grow it using "fungal culture".
- Conduct scans or camera-based (endoscopy) tests of the sinuses, head and lungs.

What should a health care provider do to prevent mucormycosis?

- Ensure the sterilization and disinfection of medical equipment used on multiple patients to prevent different types of healthcare-associated infections including mucormycosis infection.
- Ensure good ventilation systems in health facilities.
- Avoid the abuse of the corticosteroids and ensure adequate diabetes management.
- Avoid poor wound and improper linen management in health facilities.

Prevention (mucormycosis)

- Seek the advice of a health care professional, especially if you have underlying conditions like diabetes and malignancies that put you at risk for more severe COVID-19 and mucormycosis.
- Avoid the abuse of the corticosteroids unless monitored by a health care providers, and ensure adequate diabetes management.
- Avoid close contact with soil.
- Avoid damp buildings or those damaged by water.
- If you cut your skin, clean the injured area with soap and water.

Update on outbreaks

in the Eastern Mediterranean Region

COVID-19 in 22 EMR countries

Current public health events of concern

[cumulative N° of cases (deaths), **CFR %**]

Coronavirus disease 2019 (COVID-19): 2019-2021	
Afghanistan	[103 902 (4215), 4.1%]
Bahrain	[262 427 (1297), 0.5%]
Djibouti	[11 587 (155), 1.3%]
Egypt	[276 756 (15 829), 5.7%]
Iran (Islamic Republic of)	[3 086 974 (82 854), 2.7%]
Iraq	[1 283 305 (16 860), 1.9%]
Jordan	[745 978 (9656), 1.3%]
Kuwait	[337 371 (1862), 0.6%]
Lebanon	[543 371 (7819), 1.4%]
Libya	[190 748 (3174), 1.7%]
Morocco	[526 363 (9237), 1.8%]
occupied Palestinian territory (oPt)	[341 446 (3818), 1.1%]
Oman	[246 406 (2683), 1.1%]
Pakistan	[948 268 (21 974), 2.3%]
Qatar	[220 693 (582), 0.3%]
Saudi Arabia	[473 112 (7663), 1.6%]
Somalia	[14 852 (775), 5.2%]
Sudan	[36 430 (2740), 7.5%]
Syrian Arab Republic	[25 076 (1841), 7.3%]
Tunisia	[382 950 (14 038), 3.7%]
United Arab Emirates	[610 179 (1752), 0.3%]
Yemen	[6877 (1353), 19.7%]