



“Patients like AbdelLatif are typically from poor, rural areas with limited health care access, so they usually seek diagnosis very late, when the disease is advanced and harder to treat.”

**Dr Dania Zaid**, a doctor at the Mycetoma Research Centre (MRC), Khartoum, Sudan, on AbdelLatif AbdelRahim, a teenager from Darfur. It was very costly for his parents to send him to the MRC when his feet started swelling with the slow-growing infection.



# MYCETOMA

## LOOKING FOR TREATMENT ALTERNATIVES TO AMPUTATION

Mycetoma, which comes in either a bacterial or fungal form, is a chronic slow-growing infection and truly one of the most neglected diseases in the world. It is not well understood or widely studied. Infection begins most often in the foot, likely after a cut allows the bacteria or fungus to enter, and sometimes spreads to other parts of the body. Mycetoma causes severe disability, and amputation is common when infection is severe or treatment fails.



Disease burden is concentrated in the 'mycetoma belt' (between latitudes 15° S and 30° N)



Global burden is unknown

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DNDi and the Mycetoma Research Centre in Khartoum, Sudan are conducting the world's first mycetoma clinical trial

## THE TREATMENT CHALLENGE

For the fungal type of mycetoma (eumycetoma), available treatments are frustratingly ineffective, even after 12 long months of treatment. The medicines are also unaffordable and cause considerable side effects. A combination of antifungal drugs and surgery is often used, and amputation is common.

**DNDi aims to develop an effective, safe, affordable, and simpler curative treatment.** There is currently no effective cure for fungal mycetoma.

## World's first clinical study for potential new mycetoma drug

In 2017, together with the Mycetoma Research Centre in Sudan and the Japanese pharmaceutical company Eisai, DNDi launched a clinical trial for a promising new antifungal treatment, fosravuconazole, in the first-ever double-blind randomized clinical study for mycetoma.

The study had recruited 84 patients by the end of 2018, about half the target number, to assess the efficacy of weekly treatment with the anti-fungal fosravuconazole, compared with the standard of care, which is daily treatment with itraconazole for 12 months. Fosravuconazole was developed by Eisai to treat another fungal disease, onychomycosis, and has also been tested by DNDi as a treatment for Chagas disease. It has shown strong anti-fungal activity against mycetoma in the laboratory and has the potential to be an affordable, oral drug.

## MycetOS: 'Open Pharma' for mycetoma drug discovery

In 2018, the University of Sydney, Erasmus MC, and DNDi launched the Mycetoma Open Source project (MycetOS), which uses an 'Open Pharma' approach to discover new drug candidates for fungal mycetoma using open-access data and collaborative methods in a virtual research community (see p.9).

## DNDi endorses global Call for Action against mycetoma

DNDi joined partners from 35 countries attending the Sixth International Conference on Mycetoma in Khartoum, Sudan to endorse a 'Call for Action' to accelerate global efforts for mycetoma patients. The Call for Action urges the global health community to work together across sectors to address the devastating consequences of this highly neglected disease by increasing support for mycetoma research, diagnosis, treatment, and care.

