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Alkhurma virus spotted in Egypt

Reports of infection in travellers suggest wider geographic range for rare disease



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The first cases of Alkhurma haemorrhagic fever to be seen outside Saudi Arabia are reported¹ online in the December edition of *Emerging Infectious Diseases*. Fabrizio Carletti and colleagues say two people who visited a camel market in Egypt at different times during 2010 developed symptoms of the disease after returning to Italy.

"The detection of 2 independent infection events for travelers who visited the same area in a restricted period strongly supports the hypothesis of sustained local ALKV [Alkhurma virus] circulation," write the authors.

The virus, which is classified as a high-biosafety pathogen, lives in camels and sheep. Most human cases of Alkhurma haemorrhagic fever are seen in butchers, who are more likely to come in contact with contaminated blood of an infected animal. But people can also catch the virus through the bite of an infected *Ornithodoros savignyi* tick or by drinking unpasteurised milk.

The disease turns fatal in about 25% of patients. It was discovered in the mid-1990s and named after the city where the first fatal case occurred. About 40 cases have been reported since then, never outside Saudi Arabia.

The first case of imported disease described by the authors, a 64-year-old man, told doctors that he got bit on the foot by what looked like a tick while visiting a camel market in April this year. Within two days after the bite he developed a high fever, chills, and nausea among other symptoms. On returning to Italy his condition worsened but he was discharged from hospital in mid-May after successful treatment.

In the meantime, blood samples were sent for testing to discover the cause of his illness. Initial tests ruled out dengue and West Nile viruses, but after suspecting that a flavivirus might be involved, medical scientists used genus-specific reverse transcription-PCR to identify genetic material very similar to that of the Alkhurma virus.

Weeks later, blood samples from another patient also tested positive for the virus. The two patients visited the region around one month apart.

Carletti and colleagues call for future research to determine how far the virus has spread in the region, and to weigh up the risk to locals and visitors. But the virus should now be added to the list of travel-related pathogens under surveillance, they say, and travellers should be advised about the risks of coming in contact with animals in endemic areas.

In the same issue of the journal, scientists probing risk factors for Alkhurma haemorrhagic fever in the Saudi city of Najran report² that some people exposed to the virus develop symptoms that are too mild to be detected as clinical illness. Abdullah Alzahrani and colleagues say this suggests that only severe cases may have been recorded so far, artificially increasing the case-fatality rate for the disease.

The finding also points to the possibility that the virus may circulate more widely than previously thought, according to the authors — in other parts of Saudi Arabia or in other countries. "The history of the reported disease in Makkah during the Hajj, when thousands of livestock are imported to Saudi Arabia, and the existence of the outbreak in Najran, which is at the border with Yemen, necessitate further studies in adjacent countries."

Alzahrani and colleagues draw their conclusions from an investigation into 28 cases of the disease identified in Najran city by active surveillance between 2006 and 2009. For each patient they selected two people who had no antibodies against the virus, and compared risk factors between the two groups using survey data about their exposure history, clinical features of any illness and demographic factors.

Backing results from previous studies, the analysis found that people were more likely to contract Alkhurma virus by having contact with animals or getting bitten by a tick — but not through unpasteurised milk or the bite of mosquitoes, a suspected vector for the virus. The study also suggests that living near a farm could be an additional risk factor for the disease.

References and link

1. Carletti F, Castilletti C, Di Caro A, Capobianchi MR, Nisii C, Suter F, *et al.* Alkhurma hemorrhagic fever in travelers returning from Egypt, 2010. *Emerg Infect Dis* 2010. doi: [10.3201/eid1612101092](https://doi.org/10.3201/eid1612101092)

2. Alzahrani AG, Al Shaiban HM, Al Mazroa MA, Al-Hayani O, MacNeil A, Rollin PE, *et al.* Alkhurma hemorrhagic fever in humans, Najran, Saudi Arabia. *Emerg Infect Dis* 2010. doi: [10.3201/eid1612.100417](https://doi.org/10.3201/eid1612.100417)

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