

## BEYOND OUR BORDERS

**The 'Beyond our Borders' column focuses on selected and current international diseases that may affect South Africans travelling abroad. Numbers correspond to Figure 6 on page 14.**

### Hepatitis E - South Sudan

On 15 August 2021, the South Sudanese health ministry reported eight deaths related to hepatitis E virus infection in the country's Bentiu camp for internally displaced persons. A total of 219 hepatitis cases has been reported in the country this year.

Hepatitis E disease is a viral hepatitis caused by hepatitis E virus, a single-stranded, single-serotype, RNA virus belonging to the Hepeviridae family. The disease is commonly found in poorly developed regions with poor sanitation and limited access to clean water. The virus has four different genotypes. Genotypes 1 and 2 have only been found in humans. Genotypes 3 and 4 are found in animals with possible transmission to humans. Hepatitis E genotypes 1 and 2 are transmitted by the faecal-oral route. Hepatitis E outbreaks are largely waterborne, whilst most sporadic cases are zoonotic or foodborne. Vertical transmission may also occur.

The incubation period of hepatitis E ranges from 2 to 9 weeks. Symptoms include jaundice, fever, loss of appetite, abdominal pain, and lethargy. Hepatitis E symptoms are indistinguishable from symptoms of other causes of viral hepatitis. For most cases, the virus causes an acute infection that is self-limiting and, in some instances, asymptomatic. Pregnant women are particularly vulnerable to infection, particularly those in the second or third trimester and are at increased risk of acute liver failure, foetal loss, and mortality.

Treatment of hepatitis E is largely non-specific and supportive, with few cases presenting with fulminant liver failure, requiring hospitalisation. Prevention through improved water and sanitation as well as hygiene practices is the most effective tool to combat hepatitis E outbreaks.

### Anthrax - Russia

A human case of anthrax has been reported in Dagestan, Russia. A 52-year-old male was confirmed with cutaneous disease reportedly following his involvement in butchering a cow. He is reported to be in a moderate clinical condition. Cutaneous anthrax is a milder and better tolerated form of disease than the pulmonary or gastrointestinal forms.

Anthrax is a zoonotic disease caused by a spore-forming gram-positive, rod-shaped bacteria known as *Bacillus anthracis*, capable of causing severe illness in both humans and animals. Anthrax spores are extremely resilient and survive for years in soil, or on the wool or hair of infected animals. Spores are ingested or inhaled by an animal, or enter through cuts in their skin. Humans generally acquire the disease directly or indirectly from infected animals, or through occupational exposure to infected or contaminated animal products. The cutaneous form occurs when the spores enter the body through cuts or scratches in the skin and cause a local infection that, if not controlled, may spread throughout the body. The gastrointestinal form occurs when the spores are ingested, and the pulmonary form occurs

when the spores are inhaled. There is no evidence that anthrax can be transmitted from human to human.

The symptoms of anthrax depend on the type of infection and can take anywhere from 1 day to more than 2 months to appear. All types of anthrax have the potential, if untreated, to spread throughout the body and cause severe illness and death. Symptoms of cutaneous anthrax are characterised by a raised, itchy bump resembling an insect bite at the site of infection that quickly develops into a painless sore with a black centre. There may be associated flu-like symptoms. Gastrointestinal anthrax infection causes non-specific symptoms such as nausea and vomiting, abdominal pain, and fever. The disease can result in bloody diarrhoea in the later stages of the disease. Inhalation anthrax, is the most severe form and is characterised by flu-like symptoms, shortness of breath and chest discomfort. This form of the disease may also result in drenching sweats.

Anthrax infection is treated with antibiotics, antitoxin and if necessary, ventilatory support.

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## Hantavirus – Taiwan, Asia

The Taiwan Centre for Disease Control has reported a new hantavirus case in a male in his 40s, bringing the total number of confirmed cases in Taiwan to eight, as of 12 August 2021. The male patient reported a positive history of a rat bite, had no travel history and was admitted to hospital with mild disease where hantavirus infection was confirmed. He has since been discharged home.

Hantavirus pulmonary syndrome is a zoonotic disease spread to humans largely by rodents. Hantavirus, of the family Bunyaviridae, may cause hantavirus pulmonary syndrome (HPS), or haemorrhagic fever with renal syndrome (HFRS). Hantaviruses that cause pulmonary disease are mostly found in the Americas and are termed 'new world' hantaviruses. 'Old world' hantaviruses are mostly found in Europe and Asia and mainly cause the haemorrhagic and renal manifestations.

The rest of this section will focus on HPS.

Humans are at risk of infection by inhalation or direct contact with dust or objects contaminated with rodent faeces or urine, or bites from rodents carrying the virus. The incubation period for HPS ranges from 1 to 8 weeks. Early symptoms include sudden and persistent fever, conjunctival congestion, weakness, back pain, headache, and abdominal pain. Late symptoms occur 4 to 10 days after the initial phase of the illness, and include coughing, shortness of breath and tight chest. Depending on the disease severity, patients may develop some degree of hypotension and progressive evidence of pulmonary oedema and hypoxia, usually requiring mechanical ventilation.

There is no specific treatment, cure, or vaccine for HPS. Treatment is mainly supportive, and prognosis is improved by early patient presentation. Severe cases usually require intensive care management. HPS has a case fatality rate of up to 38%.



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