

Medicine for Managers

Dr Paul Lambden BSc(Hons) MB BS BDS(Hons) FDSRCSEng MRCSEng LRCPLond DRCOG MIHSCM



Hantavirus

Until people became unwell on a cruise ship recently, few had heard of or were familiar with this virus. It is so named because it was originally identified in the Hantan River Area and acquired by soldiers and civilians during the Korean War in the early 1950s. Outbreaks occur sporadically, are uncommon and are serious because there is no drug to treat the virus and no vaccine to prevent it. About 25 species are known to cause human disease.

People become very ill with the virus and the mortality rate is estimated to be up to 40%. It is primarily carried by **rodents** and is typically spread to humans when they inhale airborne particles from mouse or rat droppings, urine or saliva.

It therefore tends to occur in places where humans and rodents are found, such as in agricultural sheds, barns and holiday homes where rodents may have nested. In the UK, very occasionally, a case has been reported from contact with a pet rat.

The virus can be found in areas of Europe, Africa and Asia. In general it can cause a range of disease which varies from the mild to the extremely severe and may appear as a flu-like disease, severe respiratory illness (most common and called Hantavirus Pulmonary Syndrome) or in a haemorrhagic form (Haemorrhagic Fever and Renal Syndrome).

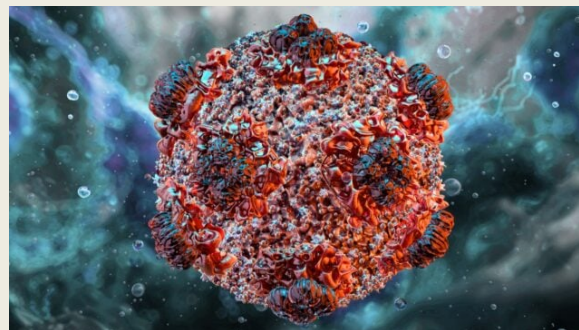
Three people died from the latest outbreak of the virus and at least three more developed symptoms of the illness with the infection on the cruise ship.

Specimens from the dead and ill were sent to laboratories and confirmation of the origin was made at the National Institute for

Communicable Diseases in South Africa.

Transmission of the infection is not normally spread between humans, although person-to-person spread has been recorded, in particular with the Andes strain of the virus (*which is the strain identified associated with the cruise ship*).

Normally, for inter-human transmission to occur, there must be close or intimate contact between people and it is more likely to occur in enclosed, poorly ventilated environments, camp sites, basements and construction sites.



Symptoms

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hey usually appear three to six weeks (but sometimes up to eight) after contact with the virus source and include fever, fatigue and muscle aching as early features, with about half of patients experiencing headache, dizziness and abdominal symptoms such as sickness and diarrhoea.

In the pulmonary form (HPS) later symptoms include coughing, shortness of breath and increasing chest tightness as the lungs fill with fluid.

In the more rare haemorrhagic form, sufferers develop acute shock, low blood pressure, internal bleeding and kidney failure. The Andes virus, the culprit in the cruise ship, is an HPS hantavirus.

Diagnosis

The disease may be difficult to diagnose because it is relatively rare and initially presents as a worsening episode of 'flu.

Positive findings on examination may include the lung changes associated with inflammation.

Unfortunately the virus cannot be diagnosed on routine blood culture (trying to incubate a specimen in a culture plate on a nutrient material) but is typically identified by antibody testing or PCR (Polymerase Chain Reaction) testing which looks for the virus genetic material. A CT scan of the chest may be helpful.

Prognosis

Because it is such a serious infection it needs rapid hospitalisation and aggressive care in an Intensive Care Unit, where high intensity specialist care can be obtained.

The mortality rate is much higher in those areas of the world when Intensive Care is not available or very far away.

Should we be worried?

It is clear that hantavirus is a serious infection which has a significant mortality. Certainly it is wise for a variety of reasons and to reduce disease risk generally to ensure that appropriate steps are taken to minimise exposure to rodents.

However:

- Most strains do not transmit person-to-person
- Only a strain called Seoul hantavirus has ever been identified in the UK and it does **not** transmit between humans.
- The risk of ever having a contact in the UK is very low
- About 150,000 cases are diagnosed globally but very few indeed have been diagnosed in the UK.

paullambden@compuserve.com