
Crimean-Congo haemorrhagic Fever (CCHF)

Frequently Asked Questions

1. What is CCHF?

CCHF is a zoonotic disease caused by the CCHF virus, a *Nairovirus* which is member of the *Bunyaviridae* family of viruses. CCHF virus is transmitted by argasid or ixodid ticks (i.e. hard ticks) which feed on a range of livestock including cattle, ostriches and wildlife including ungulates and hares. Persons may be infected through tick bites, or contact with infected animal products (i.e. infected blood and tissues). CCHF virus causes a haemorrhagic fever - patients present with fever, rash, bleeding. The majority of patients recover, but up to 30% develop severe illness with multi-organ failure and have a fatal outcome.

2. Who can get CCHF?

CCHF is endemic in many countries in Africa, Europe and the Middle East. Typically persons who are at risk of CCHF include farmers, persons with occupational exposure to animals typically cattle, or animal products, such as veterinarians, animal health technicians or abattoir workers. Nosocomial transmission to HCW has been documented amongst HCW who have had exposure to patient blood or secretions.

3. Where does CCHF occur in South Africa?

Human CCHF cases have been reported annually from the South Africa since 1981, when it was first recognized in the country. Through nearly thirty years of passive surveillance, over 180 cases have been laboratory confirmed. Although cases have been reported from all of the nine provinces, more than half originate from the semi-arid areas of the Northern Cape and Free State Provinces, respectively.

4. How is CCHF transmitted?

Tick bite exposures (tick bites or squashing/removing ticks from animals) are the most frequently reported source of infection followed by exposure to animal tissues or blood. The *Hyalomma* or 'Bontpoot' ticks are most often implicated. This tick has a characteristic red body, and red and white striped legs. Nosocomial transmission may take place through exposure to patient secretions including blood (needlestick injuries) or splashes to mucous membranes, or contact of infected secretions with non-intact skin.

5. How does CCHF affect animals?

Serological evidence for CCHF infection in animals has been found in a wide range of animals including cattle, ostriches, antelope and hares.

6. What are the signs and symptoms of CCHF?

After a variable incubation period (1-3 days, or up to 9 days following a tick bite, or 5-6 days, up to 13 days following exposure to infected body fluids or animal products), persons with CCHF develop a sudden onset of fever, myalgia, back pain, dizziness, headache, sore eyes, photophobia along with nausea, vomiting, diarrhoea and generalised abdominal pain. The patient may have sudden mood swings, or be confused or aggressive. After 2-4 days, patients' abdominal pain may localise to the right upper quadrant (liver) and may become lethargic. A fine petechial rash may develop, followed by large areas of bleeding into the skin (ecchymoses). Bleeding from or into the gut (melena), urine (haematuria), nose (epistaxis), gums may occur. Complications such as liver, lung and kidney failure may lead to death after the 5th day of illness

7. How is CCHF diagnosed?

A reverse-transcriptase PCR test on blood for the CCHF virus can be done, and will be positive from day 2 of illness until day 5. A test for antibodies using indirect immunofluorescence assay (IFA) and/or enzyme-linked immunosorbent assay (ELISA) for anti-CCHF IgG and IgM antibodies will be positive by day 5. Culture of the virus can also be attempted. Clinicians should complete a case investigation form and submit 1-2 tubes of serum or clotted blood, and whole blood to the NICD.

8. How is CCHF treated?

General supportive therapy is of primary importance in CCHF. Care should include careful attention to fluid balance and correction of electrolyte abnormalities, oxygenation and haemodynamic support. The antiviral ribavirin could be used orally or intravenously. Patients should be isolated and infection control procedures should be instituted promptly.

9. How can CCHF be prevented?

No vaccine is available for use in South Africa. Transmission from ticks can be avoided through the use of repellants (for example DEET, permethrin). Adherence to universal precautions, including the use of personal protective measures are essential for health care workers. This includes wearing of gloves when dealing with tissues and blood, face masks, and protective clothing. Patients are usually non-infectious by the time they are clinically recovered (afebrile, no bleeding, normal platelets and blood clotting profile). Health care workers and family contacts should be followed up for 14 days post-exposure with twice-daily temperature and symptom monitoring. CCHF is a notifiable disease in South Africa

10. Where can I find out more information?

For medical or clinical enquiries NICD Hotline +27 82 883 9920 (for use by healthcare professionals only). For laboratory enquires please call Dr Jacqueline Weyer +27 11 386 6376, jacquelinew@nicd.ac.za or the Centre for Emerging and Zoonotic Diseases Laboratory: +27 11 386 6339