



Omsk Hemorrhagic Fever

Fact Sheet

What is Omsk hemorrhagic fever?

Omsk hemorrhagic fever (OHF) is caused by Omsk hemorrhagic fever virus (OHFV), a member of the virus family *Flaviviridae*. OHF was described between 1945 and 1947 in Omsk, Russia from patients with hemorrhagic fever.

Where does Omsk hemorrhagic fever occur?

OHF occurs in the western Siberia regions of Omsk, Novosibirsk, Kurgan and Tyumen

How is Omsk hemorrhagic fever spread to humans?

The main host for OHFV is rodents, principally the water vole (*Arvicola terrestris*), but the virus also infects the non-native muskrat (*Ondatra zibethica*). OHFV is transmitted to the rodents from the bite of an infected tick (*Dermacentor reticulatus*, *Dermacentor marginatus*, *Ixodes persulcatus* are the major vectors). Humans usually get the disease from a tick bite.

Humans are at additional risk of contacting OHF through their contact with muskrats. Muskrats, which are not native to the Omsk region, but were recently introduced to the area, like humans, fall ill and die when they are infected with the virus. Therefore, humans can contract OHF through contact with the blood, feces, or urine of an infected sick or dead muskrat. Experimental evidence shows that other rodents, i.e. narrow-skulled voles (*Microtus gregalis*) suffer similarly to muskrats; therefore, contact with these animals may also cause disease in humans.

OHFV can be transmitted through the milk of infected goats or sheep and isolated from aquatic animals and water. This suggests that the virus is extremely stable in the environment.

What are the symptoms of Omsk hemorrhagic fever?

After an incubation period of 3-8 days, the symptoms of OHF begin suddenly with fever, headache, severe muscle pain, cough, dehydration, gastrointestinal symptoms and bleeding problems. Patients may experience abnormally low blood pressure, and low platelet, red blood cell, and white blood cell counts. After 1-2 weeks of symptoms, some patients recover without complication. However, in most patients, the illness is biphasic and the patient begins experiencing a second wave of symptoms at the beginning of the third week. These symptoms include fever and signs of encephalitis (inflammation of the brain).

How is Omsk hemorrhagic fever diagnosed?

The diagnosis is made by virus isolation from blood or by serologic testing using enzyme-linked immunosorbent serologic assay (ELISA).

Are there any complications after recovery?

OHF frequently causes hearing loss, hair loss, and behavioral or psychological difficulties associated with neurological conditions.

Is Omsk hemorrhagic fever fatal?

The case fatality rate of OHF is 0.5% to 3%,

How is Omsk hemorrhagic fever treated?

There is no specific treatment for OHF, but supportive therapy is important. Supportive therapy includes the maintenance of hydration and the usual precautions for patients with bleeding disorders.

Who is at risk for the diseases?

In areas where the reservoirs and tick species are prevalent, people with recreational or occupational exposure to rural or outdoor settings (e.g., hunters, campers, forest workers, farmers) are potentially at risk for OHF by contact with infected ticks. Furthermore, those in Siberia who hunt and trap muskrats specifically are at higher risk for OHF.

How is Omsk hemorrhagic fever prevented?

There is no vaccine currently available for OHF, but vaccines for other tick-borne encephalitis diseases have shown to confer immunity and may be used for high-risk groups. Additionally, utilizing insect repellents and wearing protective clothing in areas where ticks are endemic is recommended.

Related materials:

Omsk hemorrhagic fever virus. Material Safety Data Sheet (MSDS), Public Health Agency of Canada.

<http://www.phac-aspc.gc.ca/msds-ftss/msds113e.html>