Viral Haemorrhagic Fever

Includes Argentine Haemorrhagic Fever, *Crimean Congo Haemorrhagic Fever, *Lassa Fever, *Marburg Haemorrhagic Fever and *Rift Valley Haemorrhagic Fever

Revision Dates

Case Definition	August 2014
Reporting Requirements	May 2018

Case Definition

Confirmed Case

Suspect or probable case with laboratory confirmation of infection[1]:

- Detection of virus-specific nucleic acid (e.g., PCR) from an appropriate clinical specimen (e.g., blood, serum, tissue)

AND

- Demonstration of virus antigen in an appropriate clinical specimen (e.g., blood, serum, tissue) by EIA

OR

One of the above criteria PLUS laboratory confirmation using at least one of the following:

- Demonstration of virus antigen in tissue (skin, liver or spleen) by IHA or IFA techniques
- Demonstration of specific IgM antibody by EIA, IFA or Western Blot
- Demonstration of a fourfold rise in IgG serum antibody by EIA, IFA or Western Blot

OR

Isolation of virus from an appropriate clinical specimen (blood, serum, tissue, urine specimens or throat secretions).

Probable Case

Clinical illness[2] and a history within the 3 weeks before onset of fever of one of the following:

- Travel in a specific area of a country where an outbreak of viral haemorrhagic fever (VHF) has recently occurred,
- Contact with a suspect, probable or confirmed case,
- Direct contact with blood or other body fluid secretions or excretions of a person or animal with a confirmed or probable case of VHF or
- Work in a laboratory or animal facility that handles haemorrhagic fever viruses.

Suspect Case

Clinical illness[2].

[1] Any testing related to suspected VHF should be carried out under level 4 containment facilities (NML) due to issues of security, expertise and personnel vaccination. Contact the Public Health Agency of Canada immediately using the 24-hour emergency line (1-800-545-7661), even in the event of a suspected case, in order to activate the ERAP program.

[2] **Clinical illness:**

Argentine VHF: The disease has an incubation period of 6-17 days and the onset of symptoms is relatively slow. Initial symptoms are not very specific (fever, headache, myalgia, conjunctival suffusion, bleeding and abdominal pain). Thrombocytopenia, axillary petechiae, and encephalopathy are usually present and mucosal bleeding occurs in severe cases. Proteinuria is common, but renal failure is unusual. Shock develops 7 to 9 days after onset of illness in more severely ill patients. Encephalopathic signs such as tremor, alterations in consciousness, and seizures can occur. (1)

Crimean Congo VHF: Acute viral illness consisting of sudden onset fever, malaise, generalized weakness, anorexia, irritability, confusion, headache and pain in the limbs and groin. Fever generally lasts 5–12 days and is followed by a prolonged convalescent phase. Acute symptoms are usually accompanied by flushing, conjunctival injection and petechial or purpuric rash involving mucosal surfaces, chest and abdomen. Vomiting, abdominal pain and diarrhea are occasionally seen. Bleeding may be seen from gums, nose, lungs, uterus and GI tract. There is often thrombocytopenia, mild hematuria and proteinuria and evidence of hepatic involvement. Severe cases may be associated with liver failure. (2)

Lassa VHF: Acute viral illness lasting 1–4 weeks. Gradual onset of symptoms including fever, headache, generalized weakness, malaise, sore throat, cough, nausea, vomiting, diarrhea, myalgia, and chest and abdominal pain. Fever may be persistent or intermittent. Inflammation and exudation of the pharynx and conjunctivae are commonly observed. Many cases are mild or asymptomatic. Severe cases may result in hypotension, shock, pleural effusion, hemorrhage, seizures, encephalopathy and proteinuria, resulting in edema of the face and neck. (2)

Marburg VHF: Severe acute viral illness consisting of sudden onset fever, malaise, myalgia, headache, conjunctival injection, pharyngitis, vomiting and diarrhea that can be bloody. Often accompanied by a maculopapular or petechial rash that may progress to purpura. Bleeding from gums, nose, injection sites and GI tract occurs in about 50% of patients. Dehydration and significant wasting occur as the disease progresses. In severe cases, the haemorrhagic diathesis may be accompanied by leucopenia, thrombocytopenia, hepatic, renal and central nervous system involvement or shock with multi-organ dysfunction. (2)

Rift Valley VHF: Human infections with Rift Valley fever are usually associated with a brief, self-limited febrile illness. Most patients experience sudden onset of fever, malaise, severe myalgias with lower back pain, chills, headache, retro-orbital pain, photophobia and anorexia. Fever usually lasts for 4 days. In a minority of patients, fever returns after 2 or 3 days accompanied by return of symptoms as well as flushed face, nausea, vomiting and injected conjunctivae. Severe disease is associated with bleeding, shock, anuria and icterus. Enchepalitis and retinal vasculitis can also occur. (2)

***Denotes potential bioterrorism agent.**

Reporting Requirements

1. **Physicians, Health Practitioners and others**
   Physicians, health practitioners and others shall notify the Medical Officer of Health (MOH) (or designate) of the zone, of all confirmed, probable and suspect cases in the prescribed form by the Fastest Means Possible (FMP).

2. **Laboratories**
   All laboratories shall report all positive laboratory results by FMP to the MOH (or designate) of the zone and the Chief Medical Officer of Health (CMOH) (or designate).

3. **Alberta Health Services and First Nations and Inuit Health Branch**
   - The MOH (or designate) of the zone where the case currently resides shall notify the CMOH (or designate) by FMP of all confirmed, probable and suspect cases.
   - The MOH (or designate) of the zone where the case currently resides shall forward the initial Notifiable Disease Report (NDR) of all confirmed, probable and suspect cases to the CMOH (or designate) within one week of notification and the final NDR (amendment) within two weeks of notification.
   - For out-of-province and out-of-country reports, the following information should be forwarded to the CMOH (or designate) by FMP:
     - name,
     - date of birth,
     - out-of-province health care number,
     - out-of-province address and phone number,
     - positive laboratory report, and
     - other relevant clinical / epidemiological information.

NOTE: Reporting should be etiology-specific.

References

(1) American Academy of Pediatrics. Hemorrhagic fevers caused by arenaviruses. In: Pickering LL, Baker CJ, Kimberlin DW, Long SS, editors. Red Book: 2009 Report of the Committee on Infectious Diseases. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009. p. 325-326.

(2) Public Health Agency of Canada. Case definitions for communicable diseases under national surveillance – 2009. CCDR 2009. Available at: http://origin.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/index-eng.php