Fact Sheet No. 12
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HANTAVIRUS

NEED TO KNOW INFORMATION FOR AGRICULTURAL PRODUCERS

INTRODUCTION

Hantaviruses are rodent-borne zoonotic viruses that are transmitted to humans mainly by inhalation of virus-contaminated aerosols of rodent excreta and secreta. They produce two major clinical syndromes in humans:

- Hantavirus pulmonary syndrome and
- Hemorrhagic fever with renal syndrome.

In Canada, the Hantavirus pulmonary syndrome is the most common form and is associated with Sin Nombre virus.

Hantavirus pulmonary syndrome is a severe acute disease that is associated with respiratory failure, pulmonary edema and cardiogenic shock. The diagnosis of Hantavirus infections in humans is based on clinical and epidemiological information as well as laboratory tests.

HOW IS HANTAVIRUS SPREAD?

Rodents are common inhabitants of farm buildings and exposure to gaseous form of urine, feces and saliva is common. Hantaviruses are spread by deer mice and other wild rodents. When the particles of rodent urine, droppings and saliva float in the air and are breathed in the virus can enter the body and cause infection. This can happen when infectious materials are disturbed such as during vacuuming or sweeping. This risk of transmission increases inside closed, poorly ventilated buildings, vehicles and out-buildings.
Transmission can also occur when contaminated material get into broken skin or possibly ingested in contaminated food or water.

SIGNS AND SYMPTOMS

A person exposed to Hantavirus can start showing flu-like symptoms within 1-6 weeks. Early symptoms in exposed person may include:

- Fever
- Chills
- Muscle aches
- Headaches
- Gastrointestinal problems

Late symptoms could be seen within 4 to 10 days of the exposure, and these may include:

- Lungs filled with fluid
- Shortness of breath
- Low blood pressure
- Reduced heart efficiency

WHO IS AT RISK?

Cases of Hantavirus pulmonary syndrome have been related to grain farming and cleaning of animal care areas.

Persons who work in occupations with unpredictable or incidental contact with rodents or their nesting materials are at risk (e.g., telephone installers, oil workers, plumbers, electricians, pest control officers and certain construction, maintenance and wildlife workers).

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LABORATORY DIAGNOSIS OF HANTAVIRUS INFECTION

Hantavirus is detected by examining the blood and tissue samples. Laboratory testing should be performed on samples from patients with fever of unknown origin, severe myalgia, thrombocytopenia, renal failure or respiratory distress, and patients living in Hantavirus disease-endemic regions, or persons with recent outdoor activities during which there was possible exposure to rodents or their excreta.
The laboratory diagnosis of Hantavirus infection are- serology, reverse transcription-PCR, immunochemistry and virus culture.

TREATMENT

There is no specific vaccine, treatment or cure for Hantavirus infection, but early recognition can help with quick and full recovery.

PREVENTION

The following efforts can be made to reduce the number of rodents within human living and work spaces and to limit contact with their droppings, urine and saliva.

Here are some ways to keep rodents away from buildings you may enter:

- Sealing any openings in your home where rodents can enter.
- Storing both human and animal food, water and garbage in heavy plastic or metal containers with tight fitting lids.
- Keeping surrounding grass around short, and keep woodpiles away from your building.
- Store hays on pallets.

PROTECT YOURSELF BY:

- Making use of appropriate personal protective equipment to prevent exposure when working with materials potentially exposed to rodents and their saliva or excreta. Personal protective equipment may include rubber or plastic gloves and boots, goggles as well as a mask with HEPA filters such as an N100.
- For areas heavily contaminated with rodents, their saliva or excreta, it is advisable to use powered air-purifying or air-supplied respirators with P100 filters. Either full-face respirators or half face respirators with goggles should be used to prevent contact with infectious aerosols. Do not sweep or vacuum rodent droppings. This will release particles into the air, which you then breathe in.
- Soak or spray dead mice, nests and droppings in 1:10 solution of sodium hypochlorite (household bleach) for about 10 minutes to kill off the virus.
- Use disinfectant and hot soapy water to clean the personal protective equipment and cleaning instruments.

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