Hantavirus Pulmonary Syndrome

Hantavirus Pulmonary Syndrome (HPS) is a potentially fatal viral infection carried principally by deer mice, but also found in other rodents. There have been over 322 known cases of HPS in the United States as of June 2002 with almost 40 percent resulting in death. However, the survival rate is greatly improved when proper diagnosis and medical support are rapidly obtained. The disease is relatively difficult to get and easy to avoid by taking the necessary precautions. In California, many hantavirus cases have occurred in the central Sierra Nevada.
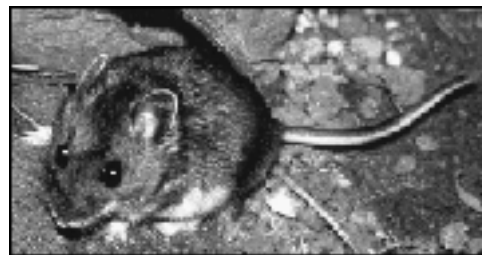
Symptoms

Symptoms of HPS begin to manifest themselves one to five weeks after exposure to the virus. Similar to those of the flu, early symptoms include fatigue, fever, and muscle aches. About half of the HPS patients also experience headaches, dizziness, chills, and/or abdominal problems. Four to ten days after the onset of the early symptoms, the infected person experiences coughing and shortness of breath as the lungs fill with fluid. Without immediate medical attention, the victim may die.

Be sure to tell medical personnel of the patient's possible exposure to hantavirus so that they can consider it as a possible diagnosis. With proper and immediate medical help, victims can survive the infection, but time and the correct diagnosis are critical.

Methods of exposure

Deer mice are the primary carriers of the hantavirus that causes HPS. They inhabit wildland areas throughout the United States except in the southeast. Deer mice live in human-occupied buildings when available or when conditions in the wild become difficult. They live side by side with other types of wild mice and are difficult to distinguish from them.

Humans contract the virus by inhaling the feces, urine, or saliva of infected mice after these excretions have dried onto dust particles or become dust themselves. Activities that disturb dust and make it airborne are particularly dangerous, especially near rodent burrows or in enclosed spaces such as seasonal dwellings. People have contracted HPS after sweeping out summer cabins or other infrequently used facilities that the mice have infested.

Peromyscus maniculatus (Deer Mouse)
Photograph courtesy of Sevilleta Long-Term Ecological Research Project, University of New Mexico

Preventing exposure

Since it is difficult to distinguish deer mice from other types of wild mice, you should avoid contact with all rodents. You can prevent exposure to hantavirus by making your workplace or campsite unattractive to rodents:

- Plug all access holes on the outside of buildings using steel wool, wire cloth, or other materials that mice cannot penetrate. Check rafters, eaves, and overhangs as well as ground level areas for entry points because mice can get into holes as small as a quarter-inch wide (the diameter of a pencil).
- When camping, set up tents and other shelters away from rodent burrows. Carefully control food use and storage to discourage rodent visits to your campsite. Clean up spills and dropped food. Do not keep food in your shelter. If you discover rodent dropping or dead rodents, use caution. You can prevent exposure to hantavirus by taking these precautions:
- Avoid directly handling wild mice, either dead or alive. If you must dispose of a dead mouse, spray the carcass with a solution of one and one-half cups of household bleach per gallon of water before handling. Use rubber gloves, spraying them with bleach when you have finished.
- Do not sweep or vacuum up dust if there is any evidence of mouse droppings or other signs of an infestation. Spray the area to be cleaned with bleach solution (1.5 cups bleach to 1 gallon water), then wipe up feces and other larger particles using paper towels soaked in bleach solution. Finally, wet mop the area with bleach solution.

For more information about HPS, visit the Centers for Disease Control web site: http://www.cdc.gov/ncidod/diseases/hanta/hps/noframes/generalinfoindex.htm or contact the Office of Environment, Health & Safety at 642-3073.