



Dutchess County Department of Health Public Health Advisory*

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Commissioner of Health



William R. Steinhaus
County Executive

Confirmed case of Powassan Viral Encephalitis

July 9, 2009 3:00pm

Please Distribute to : Healthcare Providers, Emergency Medicine, Pediatrics, Primary Care, Infectious Diseases, Internal Medicine, Family Medicine, Laboratory Medicine, Pulmonary Medicine, Critical Care, Nursing Homes, and Infection Control staff

SUMMARY:

- A case of Powassan Viral Encephalitis, a very rare disease, was laboratory confirmed in a Dutchess County resident on July 3, 2009.
- Due to the lack of awareness and need for specialized laboratory tests to confirm diagnosis, the frequency of POW encephalitis may be greater than previously suspected.
- Dutchess County Department of Health is recommending that if a patient presents with signs and symptoms of encephalitis, consider doing an arborviral panel.
- For further information on this disease and/or testing please contact :
Dr. Susan J. Wong, New York State Department of Health Wadsworth Center at 518-486-4396, or Christen Hertzog at the Dutchess County Department of Health 845-486-3534.

Current Case History:

A Dutchess County resident reported a tick attachment in April, which was removed by a local provider. The patient presented with a rash, vomiting and low grade fever and was treated with antibiotics. Other severe symptoms developed: gait "off", severe headache, unable to speak and became catatonic. The patient was hospitalized with altered mental status and an MRI demonstrated a Thalmic stroke. After consult with infection MD, was further tested to include Powassan Virus (POWV), which was later confirmed by New York State Department of Health (NYSDOH) Wadsworth laboratories on July 3, 2009. The patient is currently recovering at home, but continues to have severe anxiety, short term memory loss and loss of sensation on the left side of their trunk.

Agent:

POWV, a flavivirus, is transmitted by an infected tick, primarily *Ixodes cookei* (groundhog tick), found in northern regions of North America and eastern Russia. A closely related strain, Deer Tick Virus (DTV), is transmitted through the black-legged tick. In order to identify the type of virus, a special assay, only conducted at research laboratories, is needed.

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***Health Alert**- conveys the highest level of importance; warrants immediate action or attention; **Health Advisory**- provides important information for a specific incident or situation; may not require immediate action; **Health Update**- provides updated information regarding an incident or situation; unlikely to require immediate action.

Dutchess County Department of Health

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Clinical description:

POW presents as a viral infection that can produce a febrile illness varying in severity associated with neurologic symptoms ranging from headache to aseptic meningitis or encephalitis. Arboviral encephalitis cannot clinically be distinguished from other central nervous system infections.

Signs and Symptoms:

POW initially presents as a nonspecific summertime illness with fever, headache, nausea, vomiting and lethargy. Severe disease occurs most commonly in children under age 15 and characterized by seizures, coma, paralysis and other neurological sequelae after recovery. Other signs and symptoms are:

- Acute inflammatory disease after a short duration involving the spinal cord and meninges
- Febrile, headache and vomiting in mild cases progressing to meningeal (stiff neck and back), with eventual aseptic meningitis
- Severe cases present with stupor, disorientation, coma, tremors, convulsions, pastic paralysis and rapidly fatal necrotizing encephalitis

Diagnosis/Testing:

Since the was first identified in 1958, close to 50 cases have been identified in the US. Due to the lack of awareness and need for specialized laboratory tests to confirm diagnosis, the frequency of POW encephalitis may be greater than previously suspected.

- Laboratory diagnosis of arboviral infections can be accomplished by testing serum or cerebrospinal fluid.
- Testing for POW has been approved for use in New York State and should be sent to Wadsworth laboratory.
- DCDOH is recommending that if your patient presents with signs and symptoms of encephalitis, consider doing an arboviral panel.

Incubation Period and fatality rates:

The average incubation period is 7-14 days (range 3-34 days) with viremia lasting 7-10 days.

The case fatality rates of 0.3% - 60% have been reported, with an average of 10%. Patients who recover have about 50% chance of having permanent neurologic sequelae.

There is no specific treatment or vaccine. Supportive care is indicated if hospitalization is required.

Additional Resources:

The Center for Disease Control & Prevention <http://www.cdc.gov/ncidod/dvbid/arbor/arbdet.htm>

A recent article by Hinten et all: <http://www.liebertonline.com/doi/pdfplus/10.1089/vbz.2008.0022>

US Army fact sheet: <http://chppm-www.apgea.army.mil/documents/FACT/18-005-0406Powassan-JusttheFactsApril2006.pdf>

For more information on testing, contact Dr. Susan J. Wong at Wadsworth center at 518-486-4396 or Christen Hertzog at the DCDOH at 845-486-3534.

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