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Early Autumn Brings Viral Meningitis to Alaska

Brief Summary of Clusters

Since late August 2003, numerous confirmed and suspected cases of viral meningitis have occurred in children from four cities in Alaska. (Table 1) Confirmed cases are patients with meningeal signs and symptoms, but no bacteria or fungi were isolated from cerebrospinal fluid (CSF). Suspected cases are patients with meningeal signs and symptoms, but lumbar puncture (LP) results are unavailable.

Table 1. Viral Meningitis Cases

| Location | # Confirmed Cases | # Suspected Cases | Organism |
|--------------|-------------------|-------------------|------------------------|
| Eagle River | 1 | 5 | Echovirus, type 9 |
| Fort Yukon | 4 | 2 | Echovirus, type 30 |
| North Pole | 1 | 1 | Coxsackie B |
| Fairbanks | 0 | 2 | Pending |
| Total | 6 | 10 | Grand Total: 16 |

Laboratory results are still pending for some of the cases in Fort Yukon, North Pole, and Fairbanks.

The age range of affected individuals was 2 months to 14 years. The typical clinical presentation was fever and fatigue progressing to moderate to severe headache with lethargy and nuchal rigidity. None of the affected children had focal neurological findings. There were no intensive care admissions or deaths, although nine children were hospitalized. All confirmed and suspected cases are expected to recover.

Laboratory findings in most cases included normal to slightly elevated peripheral white blood cell counts (WBC). WBC in CSF ranged from 20 to 1100 cells with polymorphonuclear predominance. CSF glucose and protein were normal.

Important Facts about Viral Meningitis

Occurrence: Viral meningitis is common in Alaska and occurs every year in the late summer and early autumn. Large outbreaks have occurred in the past.¹⁻⁵

Mode of Transmission: Non-polio enteroviruses such as coxsackie and echovirus cause 60 to 90% of all viral meningitis cases. These viruses are acquired through direct contact with nose and throat discharges or with feces from infected people. Enterovirus may also be acquired by contact with fomites, inanimate objects contaminated by respiratory secretions or feces from infected people.⁶

Virulence: Less than 1% of all people infected with enterovirus will develop symptoms of meningitis. Most people infected will have either a mild illness such as gastroenteritis, upper respiratory infection, sore throat, conjunctivitis, or no symptoms at all. Asymptomatic people may still be contagious to others.⁶

Treatment: There is no specific treatment for enteroviral meningitis. Bed rest, fluids, and medication for pain and fever are the mainstay of therapy. More severe cases may require hospitalization for intravenous fluid replacement and pain control.⁷

Prevention: The spread of enteroviruses may be moderated through enteric precautions. Strict hand washing is the most effective tool to prevent transmission. Fomites may be disinfected by washing surfaces with a dilute bleach solution (made by mixing 1 capful of household bleach in one gallon of water).³

Recommendations

- If you suspect a case of viral meningitis**, please obtain the following specimens:
 - Nasopharyngeal swab and rectal swab placed in viral transport media
 - CSF for viral culture
 - Serum for serological analysis at a later date
 (Note: Nasopharyngeal and rectal swabs are more likely to yield an organism than CSF specimens.)
- All samples should be sent to:

State Public Health Laboratory, Fairbanks
231-233 Arctic Health Building
901 Koyukuk Ave, South
PO Box 60230
Fairbanks, Alaska 99806
Phone: 907-474-7017
- When working up a patient with a headache, stiff neck, and fever, it is important to **maintain bacterial meningitis in the differential diagnosis**. In the setting of a viral meningitis cluster, it may be easier to miss a sporadic case of bacterial meningitis, which could have disastrous consequences. There was a single, unrelated case of meningococcal disease in Eagle River concurrent with the viral meningitis cluster.
- Viral meningitis is not a reportable condition in Alaska. Meningococcal disease, on the other hand, should be reported to the State of Alaska Department of Health and Social Services, Section of Epidemiology as soon as the diagnosis is suspected.
- If you have any questions about viral meningitis, please contact the State of Alaska, Department of Health and Social Services, Section of Epidemiology at 907-269-8000 or 800-478-0084 after hours.

References

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