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Bulletin No. 14
July 25, 1990

Outbreak of Viral Meningitis Strikes Alaska

During the second week in July, an outbreak of illness, characterized by severe headache, vomiting, fever, and stiff neck, began to affect residents of Kotlik.

Several patients were flown to Bethel for evaluation and were diagnosed as having viral (aseptic) meningitis. Under the direction of Bethel physicians, on July 16-17 an IHS sanitarian conducted an investigation of the illness in Kotlik and found widespread illness. Of 369 Kotlik residents, at least 20% had symptoms. On July 20 a Bethel physician and state public health nurse visited Kotlik to further evaluate the outbreak and to obtain clinical specimens to identify the virus.

This outbreak of illness and meningitis is being caused by a virus, probably Coxsackievirus A-9. At this time, similar illness is being reported from nearby villages of Stebbins, Alakanuk, Emmonak, and Aniak. Since June, Coxsackievirus A-9 has been identified from 20 patients from Anchorage, Fairbanks, Bethel, and Soldotna.

Persons ill have ranged in age from one month to 70 years; 53% were under ten years of age. Symptoms have included headache (89%), nausea (53%), vomiting (84%), low-grade fever (37%), neck stiffness (79%), and photophobia (47%).

Because of dehydration due to vomiting and in order to diagnose the cause of illness (and rule out bacterial meningitis), 28 patients have been evaluated at the Bethel Hospital. Sixteen (94%) of 17 patients who underwent lumbar puncture had abnormal cerebrospinal fluid (CSF) findings typical of viral meningitis.

All patients have recovered. Most illness has been relatively mild (although not to the individual who is sick and has a severe headache or vomiting), and full recovery has occurred in 204 days. All patients treated at the Bethel Hospital have improved rapidly after rehydration, and most have returned to their villages.

There have been several previous outbreaks of enteroviral meningitis in Alaska (see Figure). Outbreaks occurred in 1970 (Cordova), 1972 (Kotzebue), 1978 (Juneau), and 1982 (statewide). ECHO 30 enterovirus was identified as the cause of this outbreak.

Enteroviruses are transmitted directly from person to person through the fecal-oral route and possibly also by respiratory droplet spread. Outbreaks due to enteroviruses show striking seasonal variation; they are most common in summer and early fall. Familial clustering is often observed in outbreaks, and at least 50% of infections are asymptomatic. Incubation periods range from 2-14 days, with a usual incubation period of 3-5 days. Enteroviruses predominantly affect those in younger age groups. Severity of illness ranges from no symptoms in the vast majority to upper respiratory or gastrointestinal symptoms to meningitis. Severe illness with myocarditis, encephalitis, or death is extremely rare. No death or permanent disability has resulted from any of the past enteroviral aseptic meningitis outbreaks in Alaska.

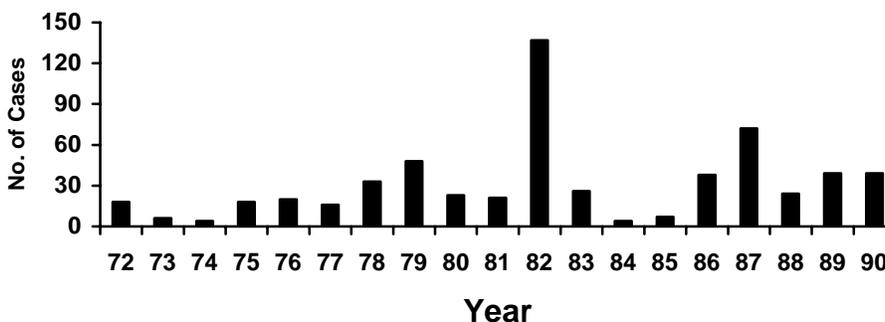
Definitive diagnosis is made by viral isolation from the pharynx or feces and four-fold serologic titer change. There are at least 67 enterovirus types. Following the isolation of a virus, specific serologic testing against the virus can be conducted.

Bacterial meningitis cannot be distinguished from aseptic meningitis solely by history and physical examination. Clinicians must use their judgment and expertise in evaluating patients who have signs and/or symptoms of meningeal irritation.

Aseptic Meningitis in Alaska

January 1972 - July 20, 1990

N = 592



SUMMARY

- This outbreak of aseptic meningitis is probably caused by Coxsackievirus A-9.
- There is no specific treatment for enteroviral meningitis.
- There is no vaccine that can prevent the infection.
- The virus is spread readily from person to person, and there is no effective way to prevent infection.
- Quarantine has no value to prevent spread of the disease. People should not restrict their usual activities in hopes of avoiding illness.
- Many people who become infected will have no symptoms of illness.
- Most illness is mild, and all patients have fully recovered.
- Most illness will occur in children under 10 years, but illness may occur in persons of all ages.
- Illness is not transmitted by food or water. Ill foodhandlers need not be restricted from work. The illness will not affect any commercial fishing operations or seafood processing.
- This outbreak is not related to village water systems.

On-going surveillance is important so we can evaluate the spread of the virus. All physicians and other health care providers should report cases of aseptic meningitis to the Section of Epidemiology over the Rapid Telephonic Reporting System (in Anchorage area, 561-4234; outside Anchorage, dial operator and ask for 478-1700).