

Outbreak of toxoplasmosis associated with municipal drinking water. The BC Toxoplasma Investigation Team.

Bowie WR¹, King AS, Werker DH, Isaac-Renton JL, Bell A, Eng SB, Marion SA.

Author information

1

Division of Infectious Diseases, University of British Columbia, Vancouver, Canada.
bowie@unixg.ubc.ca

Abstract

BACKGROUND:

Outbreaks of toxoplasmosis are recognised infrequently. In March, 1995, a sudden increase of serologically diagnosed cases of acute toxoplasmosis was noted in the Greater Victoria area of British Columbia, Canada. Concurrently, but independently, seven cases of acute toxoplasma retinitis were diagnosed against a background of no cases in the previous 5 years.

METHODS:

Cases were defined by serological testing, clinical presentation, and residence in Greater Victoria. A screening programme for women who were or had been pregnant was started. Geographical mapping of cases, and case-control studies of symptomatic cases and of women enrolled in the screening programme were done.

FINDINGS:

100 individuals aged 6 to 83 years met the definition for an acute, outbreak-related case. 94 resided in Greater Victoria and six had visited it; 19 had retinitis, 51 had lymphadenopathy, four others had symptoms consistent with toxoplasmosis, seven had other symptoms, 18 were symptom-free, and one would not provide information. 36 (0.9%) of 3812 screened pregnant and postnatal women were cases. Excess cases were not detected outside Greater Victoria and no conventional source of toxoplasmosis was implicated. Mapping studies of cases and of the screened women, and both case-control studies showed significant associations between acute infection and residence in the distribution system of one reservoir supplying water to Greater Victoria (ORs or RRs: 3.53, 3.05, 8.27, and 5.42, respectively). The epidemic curve appeared bimodal, with peaks in December, 1994, and March, 1995, that were preceded by increased rainfall and turbidity in the implicated reservoir.

INTERPRETATION:

A municipal water system that uses unfiltered, chloraminated surface water was the likely source of this large community-wide outbreak of toxoplasmosis.

FREDERICK H MINSHALL