

An Outbreak of *Salmonella* Saphra Associated with Fresh Cantaloupe

Background:

Salmonella serotype Saphra (SS) infections are rarely reported, and no outbreak due to this serotype has ever been investigated. Between 2/23/97 and 5/15/97, 25 cases were reported in California (compared with 10 cases from 1973-1996); seven cases were LAC residents. Because of this upsurge in cases, Acute Communicable Disease Control and the California DHS conducted an investigation.

Methods

The first part of the investigation was laboratory-based surveillance to find all serotyped cases of SS in the State. Isolates from these cases were compared using pulsed field gel electrophoresis (PFGE). Next a case-control study was performed. We interviewed all laboratory-confirmed case-patients (or their parents for minors) and conducted a case-control study of the first 18 primary cases with the outbreak strain. Controls were matched to case-patients by age and neighborhood of residence using acquaintances of cases. If unable to obtain acquaintance controls, then the case's physician was asked to provide suitable controls or neighborhood daycare centers were queried for controls. Cases were asked about foods consumed in the week before onset of symptoms and controls about foods consumed in March, 1997 (the month of report of cases in the study). Lastly, a trace-back of the implicated food item was conducted. Each case was asked about restaurants or stores where they had purchased cantaloupes, and how the melons were displayed, prepared and stored in the home. Invoices were obtained for the two weeks prior to retail purchase by the case and followed through to the point of origin.

Results

Twenty four of 25 isolates tested had indistinguishable PFGE patterns. Among the 18 outbreak cases studied further, the median age was 3 years and the range was 4 months to 81 years. All patients but one were either young (< 6 years), old (>65 years), or immunocompromised; 58% had bloody diarrhea, and 17% were hospitalized. Cases were more likely than controls to have consumed cantaloupe (88% vs. 45%, matched odds ratio [MOR] = 15.5, 95% CI = 1.7-139, p=0.004), and pre-cut cantaloupe (56% vs. 23%, MOR=12.0, 95%CI=1.4-102, p=0.02). Cases were less likely than controls to have consumed carrots (17% vs. 83%, MOR=0.13, 95% CI= 0.03-0.70, p=0.03). This negative association remained even after controlling for cantaloupe consumption. No cantaloupes were available for culture, as the trace-back was conducted one month after the outbreak occurred. The trace back of cantaloupes consumed by cases revealed a common distributor for 95% of the cases; this distributor purchased cantaloupes from one small region of Mexico.

Comments

Melons are a rare vehicle for *Salmonella* bacteria. This is the fourth reported outbreak of a rare *Salmonella* serotype associated with cantaloupes (*S. Chester* in 1990, *S. Poona* in 1991, and *S. Oranienburg* in 1996). To prevent infection, cantaloupes should be washed before cutting. Further investigation is needed to determine the reasons for the high rate of bloody diarrhea and negative association with carrot consumption, as well as the most practical and effective measures to decontaminate cantaloupes.