

Possible Exposure to Hepatitis A Virus in Contaminated Strawberries

Background

Federal and state authorities notified the Department of Health Services on March 27, 1997, that strawberries epidemiologically linked to three outbreaks of hepatitis A in Michigan had been purchased for student lunches by the Los Angeles Unified School District (LAUSD). School officials determined that the product had been processed into a frozen compote of strawberries and blueberries, which had already been served to children and staff at 18 schools from March 25 to March 28. All remaining product was embargoed and returned to a central warehouse pending further investigation. In conjunction with Community Health Services and LAUSD medical staff, several clinics were scheduled to administer human immune globulin (IG) to everyone exposed. Over 9,000 persons received IG within the 2-week window period for post-exposure prophylaxis. A surveillance plan was established to detect possible illness resulting from this alleged exposure.

Objectives

To improve passive reporting of hepatitis A cases during the 6-week study period, and to determine if any cases were related to consumption of strawberry compote.

Methods

Starting the second week of April, weekly telephone calls were made to 70 laboratories in Los Angeles County known to perform specific testing for acute hepatitis A infection by the HAV-IgM assay. Suspect cases were immediately assigned to the appropriate district for epidemiologic investigation, and results were rapidly transmitted to ACDC for evaluation. LAUSD school nurses contacted families of all absent children to query for symptoms of possible hepatitis. Children with suspicious symptoms were offered free testing for hepatitis A at their local public health center.

Results

Table 1 shows the total number of screening tests for acute hepatitis A infection performed during the three months surrounding the exposure dates (March 1 – May 31) and the monthly positivity rate. The monthly countywide total of tests dropped during May; the percentage of positive tests dropped significantly from 2.2% to 1.6%. Reported 1997 monthly hepatitis A cases exceeded the monthly reported cases of the two previous years for the months February to May (data not shown). The number of confirmed hepatitis A cases in April and May attending any LAUSD school was slightly higher than the previous year's monthly average, 37 cases compared to 29 cases from the same period in 1996 (Table 2). Only five of these 37 cases attended a school at which the implicated strawberries had been served. All five cases had

Table 1

| Total HAV-IgM Tests Performed and Number of Positive Tests by Month* | | |
|---|-------------|--------------|
| Month | Total Tests | Positive (%) |
| March 1997 | 13418 | 301 (2.2) |
| April 1997 | 14204 | 280 (2.0) |
| May 1997 | 12932 | 209 (1.6) |

*70 laboratories performing HAV-IgM tests in L. A. County

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other risk factors for acquiring the disease, including travel to an endemic country or close contact with another confirmed case in the 6 weeks prior to onset.

Comments

While there was a slight increase in reported hepatitis A cases attending LAUSD schools, none was epidemiologically linked to consumption of implicated strawberries. A trend toward increasing cases was seen prior to the exposure and continued through May, falling back to below average in June.

Active surveillance was felt to be responsible for some of the increased cases during the six weeks it was in force. There was no explanation for the high number of cases seen in March, but this was clearly unassociated with strawberries.

Trace-back investigations by the federal Food and Drug Administration ultimately revealed that the implicated strawberries were purchased from a Mexican farm and sold illegally to the US federal school lunch program. The investigation in Michigan was stymied by lack of specific lot numbers served at the local level, such that a much larger amount of product was implicated than was actually served in the four Michigan school districts that experienced hepatitis outbreaks. Because of nearly complete IG prophylaxis for persons exposed to the strawberries and its reasonably good efficacy when administered within 14 days of exposure, it was impossible to detect a single hepatitis A case caused by this mass exposure. In all likelihood the Los Angeles strawberry lots were not contaminated.

Table 2

| Hepatitis A Cases by Month, County Total and LAUSD Students Only | | |
|---|-----------|-------|
| Month | LAC Total | LAUSD |
| March 1997 | 141 | 10 |
| April 1997 | 127 | 16 |
| May 1997 | 130 | 11 |
| 1996 Monthly Average | 108 | 10 |
