

Listeriosis Associated with Imported Ricotta Salata Cheese

March

Hennepin County/Multiple states

On July 20, 2012, the Centers for Disease Control and Prevention (CDC) notified the Minnesota Department of Health (MDH) of a cluster of five cases of *Listeria monocytogenes* infection and two food isolates in five states/areas that were indistinguishable by pulsed-field gel electrophoresis (PFGE) (CDC two enzyme pattern designation GX6A16.0408/GX6A12.0096). The pattern was new to the national PulseNet database. Two opened cheeses, a raw milk blue cheese from Oregon and a soft cheese imported from France, both collected from a Pennsylvania case's refrigerator, were positive for the outbreak strain of *L. monocytogenes*.

One Minnesota case isolate submitted through routine surveillance matched the outbreak strain (Minnesota pattern LAS162LAP159); the case's family had been interviewed on April 9 using a CDC-developed standardized "*Listeria* Initiative" questionnaire. Cheese exposures reported during initial interview included brie, camembert, goat cheese, and raw cheese (camembert). The case's family reported several restaurants and grocery stores from which the case could have consumed food prior to the *L. monocytogenes* diagnosis. A multi-state outbreak investigation was initiated.

CDC and state health departments conducted a case-case comparison analysis to identify exposures associated with outbreak-related illness. Initial case interviews were unable to identify a particular cheese eaten by a majority of cases, though many reported consuming store-packaged, gourmet cheeses; cross-contamination of multiple cheeses by a single contaminated cheese during cutting and re-packaging was suspected. The cheese inventories of various retail and distribution facilities associated with the outbreak were compared to identify a list of cheeses of interest based on inventory commonalities. The United States Food and Drug Administration (FDA) conducted sampling of intact cheeses working from this cheese list.

Family members of the Minnesota case were re-interviewed with supplemental questionnaires to collect additional details on cheese exposures and locations where food, particularly cheese, for the case had been purchased. A list of establishments for follow-up was prioritized based on where the case's family recalled purchasing cheese for the case and where the case had done most of her grocery shopping. The Minnesota Department of Agriculture (MDA) conducted investigations at these locations, including targeted inquiries about the initial cheeses of interest, collection of cheese inventories, and acquisition of member purchase records. Cheese inventories from two grocery stores, a supplemental questionnaire, and other exposure information for the Minnesota case were provided to CDC.

MDA used distribution information from FDA to trace-forward the implicated Frescolina Marte brand ricotta salata cheese from the importer to retail establishments in Minnesota that received the cheese. The case's family accessed the case's credit card records to identify dates the case ate at the restaurant that received the ricotta salata cheese.

Twenty-two cases from 13 states and the District of Columbia were identified in this outbreak: California (3), Colorado (1), District of Columbia (1), Maryland (3), Massachusetts (1), Minnesota (1), Nebraska (1), New Jersey (3), New Mexico (1), New York (1), Ohio (1), Pennsylvania (2), Virginia (2), and Washington (1). Specimen collection dates ranged from March 28, 2012 to October 6, 2012. Twenty cases were hospitalized and four died. Two of the deaths were related to listeriosis. Nine cases were related to pregnancy; three were diagnosed in newborns. One fetal loss was reported. The other 13 ill had a median age of 77 years (range, 30 to 87 years); 54% were female.

The Minnesota case was a female over 80 years of age from the Twin Cities metropolitan area. *L. monocytogenes* was isolated from a blood sample collected on March 28, 2012. The case's family reported that she did not experience any symptoms related to the *L. monocytogenes* infection. The Minnesota case was hospitalized and died after collection of the specimen that yielded the *L. monocytogenes*; however, the case had an underlying condition and listeriosis was not a cause of death listed on the death certificate.

Nationally, 12 of 15 (80%) cases reported consumption of soft cheese on the *Listeria* Initiative questionnaire. Ten of 11 (91%) cases reported consumption of cut and re-packaged cheese from a retail location. Seven cases were linked directly to consumption of Frescolina Marte brand ricotta salata cheese (including cases identified in infants whose mothers consumed the cheese).

Several food recalls were associated with this outbreak. On August 8, a cheese distributor recalled partial wheels of two cheeses that had been cut and re-packaged at the distributor and were sold in June and July, after California Department of Agriculture sampling identified the outbreak strain of *L. monocytogenes* in cut samples of both cheeses. This recall did not include cheese distributed to Minnesota.

FDA targeted sampling of suspect cheeses identified the outbreak strain of *L. monocytogenes* in an unopened/intact wheel of Frescolina Marte brand ricotta salata cheese that was distributed by the sole U.S. importer. The ricotta salata was imported from Manufacturer A in Italy and sold without further cutting or processing.

On September 14, the importer expanded a September 10 recall to include all imported Manufacturer A products and announced its intention to permanently cease import/sale of Manufacturer A products. The importer released a list of states that received the Frescolina Marte ricotta salata sold between September 2011 and August 31, 2012 that was part of the expanded recall. Minnesota was listed as a state that received the cheese in the expanded recall.

MDA and MDH requested Minnesota distribution information for the ricotta salata cheese and received the information from FDA on October 15. A single Minnesota distributor received two shipments (March 14 and June 20, 2012) of the recalled ricotta salata cheese, one of which was shipped prior to the case's specimen collection date. The March 14 shipment (approximately 66 pounds) was received by the Minnesota distributor on March 19 – cheese from this shipment was sent without further cutting or processing to a small grocery store in the metropolitan area, a restaurant, and a secondary distributor. The secondary distributor did not receive the cheese until May 2012, after the case's specimen collection date. A restaurant in Minneapolis received 8 pounds of the recalled ricotta salata cheese on March 20. The cheese was used during that week in menu items, including a pasta with fried cheese on top, and greens with crumbled cheese and white balsamic vinaigrette dressing. The rest of the cheese was used in the bakery in a chicken salad in April. The case's family had reported this restaurant during the initial interview as one frequented by the case and a location where food for the case was purchased. The case's credit card records indicated that she ate at the restaurant on March 21 and March 22 (among other dates prior to delivery of the recalled ricotta salata to the restaurant). Specific information on food items purchased/eaten was not available. The case had no known exposure to the metropolitan area grocery store that was the only other Minnesota retail location that may have received the cheese prior to the case's specimen collection date. The incubation period for the Minnesota case calculated from the restaurant meal dates to specimen collection date was 6 or 7 days.

This was a multi-state outbreak of listeriosis involving one Minnesota case. Frescolina Marte brand pasteurized ricotta salata cheese imported from Italy was implicated as the source of the outbreak. Cross-contamination of other cheeses during cutting and repackaging at distribution and/or retail locations complicated the outbreak investigation. The Minnesota case was exposed to the implicated cheese at a Minneapolis restaurant; it is unknown if the case consumed this cheese or another cross-contaminated menu item.

Reference

1. Multistate Outbreak of Listeriosis Linked to Imported Frescolina Marte Brand Ricotta Salata Cheese (Final Update). www.cdc.gov/listeria/outbreaks/cheese-09-12/
2. FDA Investigates a Multistate Outbreak of Listeria monocytogenes Infections Linked to Imported Frescolina Marte Brand Ricotta Salata Cheese www.FDA.gov/Food/RecallsOutbreaksEmergencies/Outbreaks/ucm319197.htm