
Abstract

Foodborne Outbreak Investigation in Al-Ahsa, Saudi Arabia, 2021: A Retrospective Cohort Study

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Abstract

Background: On September 10, 2021, Al-Ahsa General Health Directorate reported an unexpected number of patients had presented with gastrointestinal symptoms. All the patients gave a history of sharing a common meal as they ate dinner that was served at the mother's house in a family gathering on September 9, 2021, at 9 PM in Al-Ahsa.

Objective: This study aims to confirm the existence of the outbreak, confirm the diagnosis, define and identify the cases, identify the source of the outbreak, determine the causative agent or organism if possible and its mode of transmission, and recommend preventive measures to be applied to prevent similar outbreaks in the future.

Methods: A retrospective cohort design was used in this outbreak investigation to identify its source. Cases were defined as any person who ate dinner at the family gathering on September 9, 2021, and developed any or a combination of the following symptoms: diarrhea, vomiting, fever, or abdominal pain within 26 hours of food consumption. We collected information on demographics, symptoms, and food history using a semistructured questionnaire. We reviewed hospital records for symptoms and vital signs. We reviewed available laboratory results for cases, and we conducted an active case search to identify more cases. The data obtained was analyzed using SPSS version 21.0 (IBM Corp).

Results: A total of 20 (74%) were defined as cases and 7 (26%) as noncases. Of 20 cases, 16 (80%) were females and 4 (20%) were males. The ages ranged between 2-70 years. Among cases, 59.3% had vomiting, 59.3% had a fever, 48.1% developed diarrhea, and 25% had abdominal pain. The incubation period ranged from 10 to 26 hours, with a mean of 17.8 hours. The risk ratios (relative risks) and *P* values were calculated for each food item to assess the association between consumption of individual food items and subsequent illness. Among 8 food items consumed, red pasta with chicken (relative risk 37.3, 95% CI 3.2-424.6) and beef pizza (relative risk 6.5, 95% CI 1.74-42.2) were significantly associated with illness.

Conclusions: According to the epidemiological investigation, symptoms, incubation period, and laboratory results, there might be some differential diagnosis, but we were unable to more definitively identify the source of the outbreak. We recommend more education to the households about food safety.

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KEYWORDS

foodborne; cohort; outbreak; gastroenteritis; Saudi Arabia

Multimedia Appendix 1

Foodborne Outbreak Investigation in Al-Ahsa, Saudi Arabia, 2021: A Retrospective Cohort Study.

[\[PDF File \(Adobe PDF File\), 553 KB-Multimedia Appendix 1\]](#)

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