An Outbreak Of Food Poisoning Among Two Families In Samta City, Jazan.

In April 8, 2000, Samta General Hospital received 13 cases from two families showing symptoms of gastroenteritis, abdominal pain, nausea, vomiting and diarrhea. They gave a history of eating common food at a restaurant in Samta. All the cases were admitted to the hospital, received treatment, improved and discharged within the next few days. Our team was assigned to investigate this outbreak. A case control study was conducted. A case was defined as any individual who ate from restaurant A on April 8, 2000 and had developed abdominal pain, and/ or diarrhea and vomiting. Medical records of each affected individual were reviewed. Microbiology laboratory records were reviewed for all stool samples over the study period. A standard questionnaire was developed to interview the cases and controls. Stool samples and vomitus of the admitted patients were cultured. Restaurant workers were interviewed to obtain information on the food menu, and methods of food storage and handling at the restaurant.

The cases belonged to 2 different families, most of them were children. Four additional cases were found, yielding a total of 17 cases; 6 males (35.3%) and 11 females (64.7%). Cases were between 1 to 41 years of age, 11 (64.7%) were below 10 years old (median age =9). They developed symptoms within 2 to 3 hours of eating the meal. Symptoms were abdominal pain 100%, vomiting 82%, nausea 76%, diarrhea 76%, fever 35%. The food items they reported eating were chicken, rice, salad, mosaga, and marsa (a local dish). The only food item incriminated as cause of the outbreak was chicken (OR 10.96, 95% CI 1.84-84.79, P-value 0.001). Stool and vomitus culture showed that 5 cases were positive for Yersenia entercolitica. Furthermore, the stool culture of the restaurant workers were positive for Salmonella.

— Reported by: Dr. Ahmed Sahli, Dr. Adel Turkistani, Dr. Randa Nooh, Dr. Adel Fatany (Field Epidemiology Training program).

Editorial Note: Five patients had positive stool cultures for Yersinia entercolitia, an organism not commonly recognized as a cause of a food poisoning outbreak in Saudi Arabia. Yersinia entercolitica is an aerobic gram-negative bacillus, a member of the family Enterobacteriaceae. Its animal reservoirs include pigs and dogs. The organism can be found in water, soil, and vegetables. It grows well in refrigerated foods and is isolated more commonly during the winter months and in cooler climates.[1] The majority of cases are mild and go unrecognized. School age children are the most susceptible, presenting with enterocolitis, fever and diarrhea. The incubation period ranges from 1-14 days.[2] Identification requires selective agar, alkali treatment, and cold enrichment techniques.[3,4]

The epidemiological investigation and clinical presentation, however, make Yersinia entercolitica a very weak likelihood, since the incubation period was much shorter (2-3 hours). Yersinia entercolitica is also known to have a longer duration of symptoms.[3] Furthermore, the organisms need selective media to grow, which was not used in this case. The fact that these organisms have not been previously isolated in this area, in addition to the previous factors, may indicate that the laboratory mistook a different enteropathogen for Yersinia.

The stool culture of restaurant workers showed that two were positive for Salmonella. However, this could be excluded as the cause of the outbreak, since Salmonella was not isolated from any of the patients, and the symptoms and incubation period are not competent. Although the laboratory investigations did not isolate Staphylococcus aureus from the cases or the restaurant workers, it may, however, be the causative organism of this outbreak, since the incubation period was very short (2-3 hours), and similar clinical symptoms appeared. Bacillus cereus may be another possibility, but could not be confirmed by laboratory tests. Further epidemiological investigations on the microbiology of diarrheal illness in this region are needed to obtain a clear idea of the incidence of Yersinia.

References:

1. Hennesy TW, Hedberg CW. A national outbreak of Salmonella Enteritidis from ice cream. *N Engl J Med* 1996, 334: 1281-6.
2. Bell BP, Goldoft M, Griffin PM. A multistate outbreak of Eschericia coli 0157:H7. *JAMA* 1994, 272: 1349-53.
3. Alfreds, Evans and Philip. Bacterial Infections of Humans. Third edition, New York. 1998, pp 859-870.
4. Shorter NA, Thompson MD. Surgical aspects of an outbreak of Yersinia enterocolitis. *Pediatr Surg Int* 1998; 13: 2-5.

Figure 1: Epidemic Curve for 17 Gastroenteritis cases after eating from a restaurant on April 8, 2000 in Samta, Jazan.