

Giardiasis Outbreak Associated with Travel to Mexico — Kansas, January 2015



Background

On February 17, 2015, routine infectious disease surveillance conducted by the Kansas Department of Health and Environment's Infectious Disease Epidemiology and Response section (KDHE) identified an increase in reported giardiasis cases in Kansas. The cases resided in several Kansas counties, but all reported recent travel to Mexico and further investigation determined that all had traveled as part of the same group. KDHE notified the local health departments in the counties where the travelers resided, and an outbreak investigation was initiated on February 18, 2015 to determine the cause and scope of the outbreak and to provide prevention resources.

Methods

Epidemiologic Investigation

A retrospective cohort study was conducted among members of the travel group. Travelers were interviewed by investigators from six county health departments. A special standardized questionnaire developed for this outbreak investigation was utilized in order to obtain demographic information, clinical information, and exposure history.

For this investigation, a confirmed case was defined as laboratory evidence of *Giardia* infection in a person who traveled to Mexico from January 16 to 20, 2015. A probable case was defined as diarrhea without confirmatory laboratory results in a member of the travel group.

Laboratory Analysis

Testing on stool specimens was performed at hospital and reference laboratories.

Results

Epidemiologic Investigation

Twenty-two persons traveled as a group to a resort in Cabo San Lucas, Mexico from January 16 to 20, 2015. Twenty (91%) travelers were interviewed with the standardized questionnaire. Four confirmed and two probable cases of giardiasis were identified. Two (33%) ill persons were male and four (66%) were female; all were adults.

The most common symptom was diarrhea, which was experienced by all persons with outbreak cases of giardiasis [Table 1]. Nausea and bloating/gas were also commonly reported. Onset of gastrointestinal illness for persons with outbreak cases of giardiasis ranged from January 17 to 26, 2015. Four (66%) persons sought health care as a result of their gastrointestinal illness. During interviews, two additional persons reported vomiting, but did not report diarrhea. These persons were found to be two of five who experienced respiratory illness and were diagnosed with influenza A.

Travelers reported eating most or all of their meals at the resort buffet, but very few specific food items were reported. Therefore, no individual food item or meal was determined to be associated with illness. All travelers reported drinking bottled water throughout the trip; two ill persons and three persons without outbreak cases of giardiasis also reported drinking tap water at the resort restaurant. All persons who responded to interview questions about recreational water exposure reported swimming and wading in both the ocean and the resort

pool. No differences in recreational or drinking water exposure were observed in those who became ill compared to those who did not.

Table 1: Symptoms reported among persons with confirmed or probable giardiasis (n=6)

Clinical Information	# of Cases with Symptom	% of Cases with Symptom
Diarrhea	6	100%
Bloating/Gas	5	83%
Nausea	5	83%
Abdominal Pain	4	67%
Greasy Stool	3	50%
Vomiting	2	33%
Fever	2	33%
Bloody Stool	1	17%

Laboratory Analysis

Stool specimens from four persons were tested by microscopy; all were positive for *Giardia lamblia*.

Discussion

This giardiasis outbreak among Kansas residents was associated with travel to Cabo San Lucas, Mexico. Four confirmed and two probable cases of giardiasis were identified. No drinking or recreational water exposure was identified as being associated with illness, nor was any single food item or meal.

This investigation was aided by cooperation among the six county health departments and KDHE which allowed for a high interview response rate among travelers. This outbreak took more time to detect through routine surveillance because the cases were spread out over six Kansas counties, and because the outbreak was not otherwise reported by travelers, healthcare providers, or public health investigators. As a result of the time between travel and interview, inaccuracies may exist in interviewees' food and symptom histories due to recall bias. Collecting accurate clinical and exposure information for this outbreak was complicated by the fact that some travelers were ill with influenza, a respiratory illness which can also include gastrointestinal symptoms.

Giardiasis is a gastrointestinal illness caused by the parasitic protozoan *Giardia* which is spread via fecal-oral transmission. The disease is characterized by diarrhea, gas and bloating, greasy stool, abdominal cramps, and dehydration which can lead to weight loss. People usually become ill within one to three weeks after infection, and symptoms may last two to six weeks or longer¹.

Giardiasis is a common cause of diarrheal illness globally; as many as 33% of people living in developing countries and 8% of people living in developed countries worldwide have been affected. Persons can become infected with *Giardia* by drinking or swimming in untreated surface water such as in lakes, streams, ponds, or rivers; by having contact with somebody who is ill with giardiasis; or by ingesting fecally contaminated food. International travelers are considered to be a high-risk group for illness caused by *Giardia*, particularly those persons traveling to south Asia, the Middle East, and South America^{2,3}. To avoid becoming ill with giardiasis, it is important to practice good hygiene, prevent contact and contamination with fecal matter during sex, and avoid food and drinking or recreational water that may be contaminated⁴.

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¹ <http://www.cdc.gov/parasites/giardia/>

² Ibid.

³ <http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-3-infectious-diseases-related-to-travel/giardiasis>

⁴ http://www.cdc.gov/parasites/giardia/gen_info/faqs.html#prevent