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Title: Outbreak of norovirus gastroenteritis associated with ingestion of pickled soybean sprouts among Taiwanese group tourists in Korea.

Abstract Text:

Background: During January 1–6, 2014, Centers for Disease Control, Taiwan (TCDC) were notified of 16 tourist groups with clustered gastrointestinal illness in Korea. TCDC and the Korea public health authorities jointly investigated the cause, vehicle and extent of the outbreak.

Methods: We identified ill tourists through mandated tour leaders' reporting at international airport quarantine stations. A case was defined as onset of diarrhea or vomiting during the tour in Korea. Case interviews, itineraries, and travelers' photos were used to identify common restaurants and food. We conducted a case-control study in two groups through a structured questionnaire survey and used bivariate analyses to determine associated food. Stool and anal swabs from ill travelers were tested for bacteria and virus by culture and polymerase chain reaction, respectively. Suspected restaurants were investigated by the Korea authorities.

Results: As of January 9, 357 (59%) cases were identified among 605 Taiwanese tourists in 23 groups, and 22 (96%) groups had patronized Restaurant X 1–2 days before illness onset. Forty-seven (68%) of 69 tourists in two surveyed groups completed the questionnaires. All ate at restaurant X within 13-59 hours before illness onset. In bivariate analyses, consumption of pickled soybean sprouts at Restaurant X was associated with illness (OR: 8.9; 95% CI: 1.03-410). Of 30 stool samples, 14 were positive for norovirus. Environment investigation revealed two food handlers at Restaurant X tested positive for norovirus and the restaurant was closed.

Conclusions: This large norovirus outbreak is associated with pickled soybean sprouts ingested at Restaurant X. With increasing international travel, timely reporting of tourists' health events and prompt international collaboration in investigations would lead to early outbreak detection and control.

Key words: foodborne illness, norovirus, outbreak

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