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Background:

During August 2–5, 2020, Taiwan CDC was notified of > 120 travelers with gastroenteritis after dining at a buffet restaurant in Yilan. We investigated to identify implicated foods and causative pathogen.

Methods:

We conducted a case-control study using an online questionnaire among two groups that ate on July 30 (group A) and August 1 (group B), with 111 and 65 diners, respectively. We defined cases as diners having any of the following symptoms \leq 72 hours after eating at the restaurant: diarrhea, abdominal pain, nausea or vomiting. We conducted univariate and multivariate analyses of 103 foods consumed. We inspected restaurant and interviewed food handlers. Stool specimens from cases and restaurant workers, and environmental specimens were tested.

Results:

Of the 78 and 42 respondents from two tour groups, 18 (23%) and 28 (67%) met case definition. In groups A and B, the most common symptoms were vomiting ($n = 11$, 61%) and diarrhea ($n = 27$, 96%), and median incubation periods were 43 (range: 2–62 hours) and 13 hours (range: 2–55 hours). Illness was associated with French fries ($n = 9$, OR = 10.5, 95% CI: 2.0–54.5) and apple juice ($n = 9$, OR = 5.1, 95% CI: 1.1–23.7) for group A; no associated foods were found for group B. Environmental investigation found daily chlorine levels of chlorinated groundwater sources used by the restaurant were < 0.2ppm during July 9–August 4; water samples were negative for norovirus. Eight restaurant employees were positive for norovirus; six were symptomatic (onset during July 28–August 3); seven diners tested positive for norovirus; all viruses were genogrouped GI.4.

Conclusions:

Because few diners ate the epidemiologically implicated foods, transmission of norovirus most likely resulted from cross-contamination by sick restaurant employees. We recommend ensuring sick food handlers do not work, to maintain food safety.