

A *Clostridium Perfringens* Associated Foodborne Outbreak on a Campsite— Northern Taiwan, 2016

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Background: *Clostridium perfringens* causes foodborne illness with clinical manifestations similar to diarrheal toxin-producing *Bacillus cereus* infection. However, *C. perfringens* testing is not included for foodborne outbreak investigations in Taiwan. On September 25, 2016, ≥ 100 college students reported acute diarrhea after a party on a campsite in Northern Taiwan. We conducted an investigation to identify etiology and associated factors.

Methods: We conducted a case-control study. We identified and interviewed party attendees; collected information on foods consumed and symptoms through questionnaire. We defined cases as illnesses in party attendees who had diarrhea (≥ 3 loose stools/day) within 48 hours after the party began. Controls were asymptomatic attendees. We used bivariate analysis to identify associated factors. Stool samples and leftovers were tested for foodborne pathogens; *B. cereus* culture-negative samples were tested for *C. perfringens* and *cpe* enterotoxin gene.

Results: Of the 115 students interviewed, we identified 56 cases. The median incubation period was 11 hours (range: 7–35 hours). Most common symptoms were diarrhea (56, 100%), abdominal pain (51, 91%), and nausea (10, 18%). All party attendees ate boxed lunch at noon on September 24th. Illness was associated with eating stir-fry vegetable (OR: 2.38; 95% CI: 1.02–5.54) and simmered bean curd (OR: 2.17; 95% CI: 1.03–4.60) at lunch. Furthermore, students who also ate dinner provided by the same caterer that night had increased odds of developing illness (OR: 2.62; 95% CI: 1.12–6.12). *C. perfringens* were isolated from three food handlers and two cases, but only isolates from cases were *cpe*-positive. Leftovers were culture negative; testing for *C. perfringens* was not performed.

Conclusion: Clinical manifestations, epidemiologic characteristics, and having isolates with same toxinotype indicate that this outbreak was caused by *C. perfringens*. We recommend *C. perfringens* and *cpe* gene testing, especially for suspected diarrheal toxin-producing *B. cereus* associated foodborne outbreaks.
