Norovirus GII.2 Outbreak in a College of Technology, Kaohsiung, Taiwan, 2016

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Background: On December 12, 2016, Taiwan CDC was notified of a foodborne outbreak in a college of technology. Initial investigation showed all ill patients participated in the field trip on December 9 with compatible symptoms of norovirus infection. Since October 2016, new recombinant GII.2 norovirus outbreaks were increasing in Taiwan. We investigated this outbreak to identify the source and illustrate disease severity.

Methods: We conducted a cohort study and enrolled teachers/students who participated in the trip and shared the same lunch and dinner. We used photos taken at table to verify food items, and collected demographics, symptoms, hospitalization and foods consumed by a semi-structured questionnaire. We defined cases as vomiting or watery diarrhea in participants with illness onset ≤ 72 hours after eating lunch or dinner. We conducted bivariate analyses to identify associated foods. Stools of ill students/food handlers, environmental samples of kitchen and food specimens were collected for bacterial and viral testing. Norovirus-PCR positive products were genotyped.

Results: Among 7 teachers and 115 students, 56 (46%) were cases (48 male, median age 19 years [range: 18–41]). Symptoms included diarrhea (n = 54, 96%), abdominal pain (n = 48, 86%), and vomiting (n = 44, 78%). Fifty-one cases sought medical care; five were hospitalized. For 35 cases available with symptom duration, median illness duration was 74 hours (20 [57%] more than 72 hours). None of the 24 food items was significantly associated with illness (range of RR: 0.56–2.19). Norovirus were detected in 5/7 students and genotyped GII.2. Neither food handlers nor food/environmental specimens were norovirus positive.

Conclusion: Although we could not identify the implicated food, this norovirus GII.2 outbreak was characterized by longer illness duration compared with known norovirus infections. Public health should be aware of emerging new recombinant norovirus, and further investigations are needed to assess viral virulence.