

An Outbreak of Gastroenteritis in Japan due to *Escherichia coli* O166

To the Editor: Enteroaggregative *Escherichia coli* (EAggEC) heat-stable enterotoxin 1 (EAST1) was originally found as an enterotoxin of EaggEC (1). Recently, Yamamoto et al. (2) reported that the *EAST1* gene, or its variants, were present not only in EAggEC but in other diarrheagenic *E. coli*, including some enteropathogenic *E. coli* (EPEC) and enterotoxigenic *E. coli* (ETEC). Hedberg et al. (3) found that an outbreak of gastrointestinal illness in 1991 had been caused by EAST1-producing *E. coli* that possessed the EPEC gene locus for enterocyte effacement. We propose that *E. coli* producing EAST1 but possessing no other identifiable pathogenic properties may compose either a new group of diarrhea-associated *E. coli* or a new subgroup of ETEC.

In an outbreak of gastroenteritis on July 23, 1996, in Osaka, Japan, 54 of 91 persons attending a meeting held in an office building on July 22, 1996, became ill. The patients did not eat any common foods except the lunch served at the office. Symptoms were diarrhea in 52 (96%); abdominal pain in 32 (59%); nausea in 8 (15%); fever in 8 (15%); and vomiting in 5 (10%). The mean incubation period was 17 hours.

Stool specimens of 33 patients were examined, and *E. coli* O166 with an unidentifiable H antigen were isolated from 29 specimens. Laboratory tests for other bacterial pathogens and viruses were negative. The isolates showed the same DNA banding pattern in pulsed-field gel electrophoresis after treatment with the restriction enzymes *Xba* I or *Not* I.

The *E. coli* O166 organisms did not adhere to HEp-2 cells in a localized, diffuse, or enteroaggregative manner and did not give mannose-resistant hemagglutination of human or bovine red blood cells. Although the organisms were further analyzed for expression of known ETEC colonization factors by a dot-blot assay using specific monoclonal antibodies, they did not express CFA/I, CS1, CS2, CS3, CS4, CS5, CS6, CS7, CS17, PCFO159, PCFO166, or CFA/III. In polymerase chain reaction (PCR) tests, the bacteria did not have coding genes for verocytotoxin of enterohemorrhagic *E. coli*, heat-labile, or heat-stable enterotoxin of ETEC, attachment and effacement (*eaeA*) of EPEC, or invasion (*invE*) of enteroinvasive *E. coli*.

Consequently, they are not assigned to any of the recognized diarrheagenic groups of *E. coli*: EPEC, ETEC, enterohemorrhagic *E. coli*, enteroinvasive *E. coli*, EAggEC, and diffusely adhering *E. coli*. According to the PCR method of Yamamoto et al. (2), however, the organisms possessed the *EAST1* gene.

To our knowledge, this is the first report of an outbreak caused by EAST1-producing *E. coli* that did not have other well-characterized virulence genes. We believe that these strains should be assigned to a new subgroup of ETEC. Such strains would not be detected in most current surveys for diarrheagenic *E. coli*, as tests for EAST1 are rarely included. The role of EAST1 in pathogenicity has been controversial. We propose that diarrheal specimens be examined for EAST1-producing *E. coli* so that the distribution of these organisms worldwide can be determined.

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***Vibrio cholerae* Outbreak in Italy**

To the Editor: On 16 June, the microbiology unit of the Hospital of Lodi communicated to the local public health unit that *Vibrio cholerae* had been isolated and identified by standard biochemical tests in stool samples of an outpatient whose