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An Outbreak of Group C Rotavirus Infection in an Elementary School in Shimane Prefecture, Japan, February 2006

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Most of the outbreaks of group C rotavirus infection occur in April and May in Japan (1,2). In this report, however, we describe a winter outbreak of group C rotavirus infection in Shimane Prefecture, Japan (Fig.1).

A report of the possible outbreak in an elementary school was first submitted to the public health center by the local school board. Stool specimens were collected from 4 school children and 1 teacher who developed the first symptoms between February 24 and 27.

All the specimens were positive for group C rotavirus antigen at titers of 4 - 128 by an RPHA test kit (Denka Seiken Co., Ltd., Tokyo, Japan), as well as for the VP7 genome by RT-PCR (3). About 1,000 nucleotides of the PCR products were sequenced. The 5 PCR products from the respective stool specimens showed nucleotide homology of 99.9%, and the sequences demonstrated the highest homology with the OT-99 strain (accession no. AB086969). These 5 stool specimens were negative for norovirus, astrovirus, sapovirus, group A rotavirus, and enteric adenovirus.

Based on the questionnaire survey results, it was assumed that the outbreak started among children in the 1st and 2nd grades. Then the symptoms were reported among schoolchildren in grades 3 - 6 (Fig. 2). When those who developed symptoms between February 10 and March 3 were considered to have group C rotavirus infection, this outbreak included 326 patients, consisting of 220 school children, 7 school workers and 99 family members. Among the 227 school children and school workers, diarrhea, fever, vomiting, nausea and abdominal pain were recognized in 70.5, 60.4, 52.0, 52.4 and 67.4%, respectively.

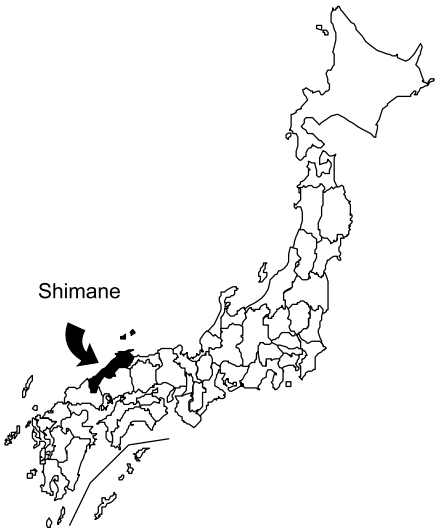

Fig. 1. Location of Shimane Prefecture in Japan.

This outbreak involved not only the infection of schoolchildren and school workers, but also cases of secondary infection at home. This indicates the importance of early detection of the outbreak and of taking appropriate preventive measures.

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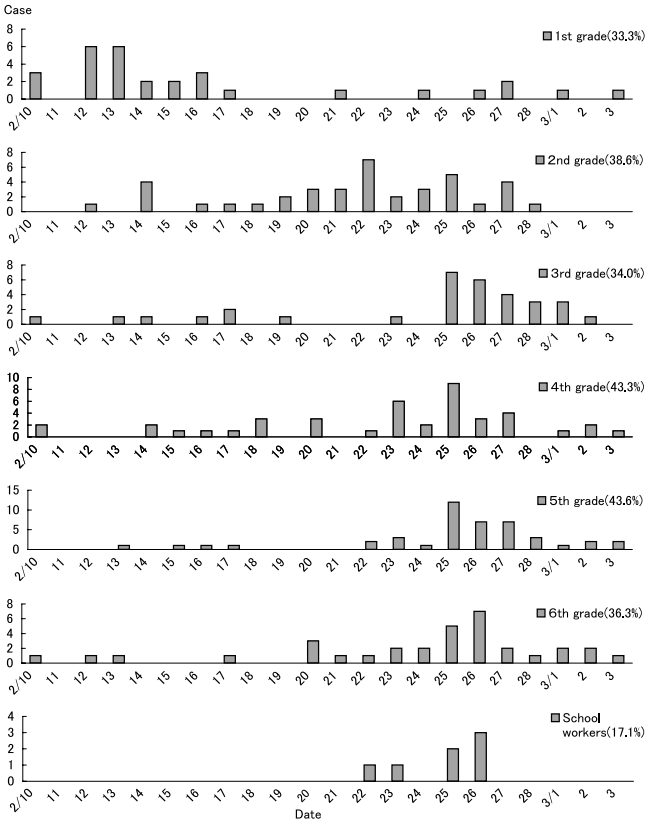

Fig. 2. Time course of the appearance of the patients.
( ), onset rate.

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