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Norovirus Outbreaks at Nursing Homes in Osaka, Japan

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An epidemic outbreak of norovirus (NoV) raged through nursing homes in Japan in the past winter season (January, 2005). Twenty-five outbreaks of confirmed NoV in nursing homes and hospitals were involved, together with 13 outbreaks in other facilities. In the present report, we describe three separate outbreaks that occurred in nursing homes in Osaka, Japan.

Case 1

Between the 15th and 16th of December 2004, two residents in a nursing home in Daito City showed symptoms of gastroenteritis including vomiting and fever, and were diagnosed with viral gastroenteritis in a hospital; five other residents had similar symptoms. NoV infection was suspected

to have been spread by person-to-person contact and was not considered to be foodborne because there was no common source of food. On the 22nd of December, four stool samples were tested. NoV (GII.4; CAW type) was detected in all samples by reverse transcriptase-polymerase chain reaction (RT-PCR) using G2F1/G2SKR primers and Yuri primers (1,2). In total, 39 residents had symptoms; 2 of 28 residents on the second floor, 16 of 35 residents on the third floor, 14 of 35 residents on the fourth floor, and one short-term resident on the first floor. Additionally, 6 staff members, including one cook had symptoms of gastroenteritis (Fig. 1A). Most of those infected were located on the third and fourth floors. Residents of the third floor had senile dementia, residents of

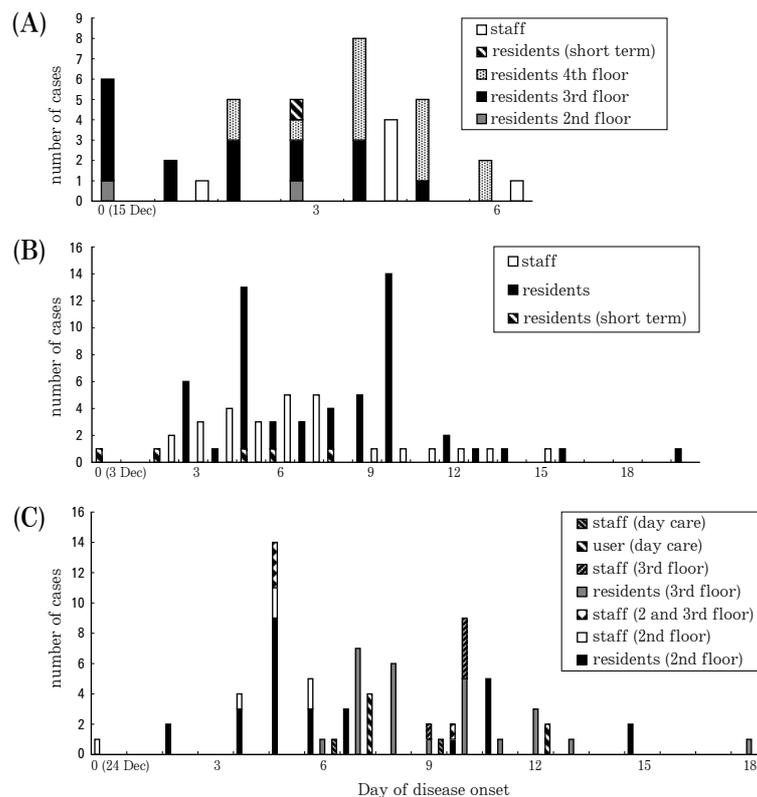


Fig. 1. Cases of gastroenteritis in a nursing home in Osaka by day of onset. (A), number of residents by floor and staff members in Case 1; (B), number of residents, short-term users and staff members in Case 2; (C), number of residents and staff members by floor in Case 3.

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fourth floor were self-supporting and did not require much care, and residents on the second floor required a high level of nursing. This outbreak indicates the difficulty of controlling sanitation in communal life for the elderly and people with dementia. On the other hand, it was possible to prevent NoV transmission among people confined to bed through the efforts of the staff. It is important to note that the short-term resident visited all floors of the nursing home. Furthermore, there is a high risk of spreading NoV in nursing homes from outside.

Case 2

At a nursing home in Ibaragi City, in the northern part of Osaka, one short-term resident vomited in a meeting place on the 3rd of December 2004. After 2 days one other resident and 2 staff members became ill. On the 6th of December, 6 residents (5 on the first floor and one on the second floor) and 3 staff members showed symptoms of gastroenteritis. Two peaks were observed on the 8th and 13th of December (Fig. 1B). At the time of the second peak, a disinfectant was changed to hypochlorous acid because the possibility of NoV infection was high. Three stool samples were tested in our laboratory on the 22nd of December and NoV GII.4 (Bristol, CAW type) was detected in all three. The total number of people with symptoms increased to 105. In conclusion, NoV infection had spread from person-to-person contact in the day care facilities and group home. It was suspected that the vomitus was the initial source of NoV transmission.

Case 3

On the 24th of December, one staff member working at a nursing home in Izumiotsu City showed symptoms of gastroenteritis, including diarrhea and vomiting. Five resi-

dents living on the second floor showed signs of diarrhea between the 26th and 28th of December, though their symptoms improved under medical treatment. On the 29th of December, 9 residents and 2 staff members on the second floor and 3 nurses on the second and third floors became ill (Fig. 1C). Eight fecal samples and 4 vomitus samples were examined for NoV on the 4th of January 2005, and NoV GII.4 was detected in all 8 fecal samples and in 2 of the vomitus samples. In total, 77 people were infected, and the cause was suspected to be NoV.

There are many kinds of nursing facilities for elderly people in Japan, depending on their level of mental and physical ability. Their health depends greatly on management decisions and hygiene programs. Therefore, better awareness of NoV infections should be encouraged to prevent and control future outbreaks in such closed institutions with high-risk people.

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