LETTER-TO-THE-EDITOR

Colonization of *Vibrio cholerae* among Persons in Contact with Cholera Patients

Sir:

Cholera is a major health problem in Myanmar. Until the 6th pandemic, cholera was caused by *Vibrio cholerae* O1 classical biotype (1). In 1961, the 7th pandemic of cholera began, and unlike the previous pandemics, this was caused by *V. cholerae* El Tor.

In 1992, an epidemic of a cholera-like disease, caused by *V. cholerae* O139 synonym Bengal, occurred in Bangladesh and India (2). *V. cholerae* O139 strain was first identified in Myanmar in 1994 as isolated cases in an endemic pattern (3). *V. cholerae* O139 has since then become one of the casual pathogens in Myanmar.

Cholera is transmitted from patients and convalescent carriers to the persons having intimate contacts and to the community through direct and indirect modes of transmission. Intra-familial spread of infection mainly occurs in the range of 4-22% and sometimes as high as 50% (4). Thus, to know the colonization of *V. cholerae* among persons in contact with cholera patients, this study was carried out.

The study was conducted in Yangon from January to September 1999. Rectal swab samples were collected from 50 lactating mothers and 50 children aged less than two and a half years, who were either from families of hospitalized patients or from their neighbouring houses. *V. cholerae* O1 and O139 were confirmed in the index cases by culture and serotyping at the Infectious Diseases Hospital Laboratory in Yangon. With informed consents, rectal swabs were collected on day 1, day 5, and day 10 in sterile bottles, containing alkaline peptone water and were labelled. These were transported to the laboratory and were processed within one hour after arrival. In total, 300 rectal swab samples were examined.

The rectal swab from alkaline peptone water (pH 8.4 with 0.5% NaCl) was plated onto alkaline nutrient agar (pH 8.4) and was incubated at 37 °C overnight. After incubation, subculture was done, and then second alkaline peptone water was incubated for enrichment of organism. Finally, subculture was done from the second enrichment media. After overnight incubation at 37 °C, convex and smooth round colonies that are opaque and granular in transmitted light were picked out, and biochemical reactions, oxidase reaction, and serotyping were done.

Serotyping of the isolated strains was done with polyvalent *V. cholerae* O1 antisera and then with *V. cholerae* O1 (Inaba and Ogawa antisera) by slide agglutination test. If agglutination did not occur with polyvalent O1 antisera, serotyping was done with *V. cholerae* O139 antiserum.

Of the 300 samples tested, one lactating mother and two breastfed children were found to have *V. cholerae* O1 Ogawa serotype, two lactating mothers and two breastfed children had *V. cholerae* O139, four lactating mothers and two breastfed children had *V. cholerae* non-O1 and non-O139, and one breastfed child had *Vibrio* spp.

<table>
<thead>
<tr>
<th>Index case</th>
<th><em>V. cholerae</em> O1</th>
<th><em>V. cholerae</em> O139</th>
<th><em>V. cholerae</em> non-O1 and non-O139</th>
<th><em>Vibrio</em> spp.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lactating mothers (n=1)</td>
<td>Breastfed children (n=2)</td>
<td>Lactating mothers (n=7)</td>
<td>Breastfed children (n=6)</td>
</tr>
<tr>
<td><em>V. cholerae</em> O1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><em>V. cholerae</em> O139</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>
spp. non-typeable. These were isolated from persons with contacts of proven *V. cholerae* O1 patients (Table). Similarly, among the contacts of index cases with *V. cholerae* O139 patients, five lactating mothers and four breastfed children were found to have *V. cholerae* O139 serotype, and one breastfed child had *Vibrio* spp. non-typeable.

In this study, *V. cholerae* and other vibrios were isolated from 12 mother-child pairs who were in contact with cholera patients. They were asymptomatic and did not develop diarrhoea during the 10-day follow-up.

Four pairs of mothers and children with *V. cholerae* O139-positive cultures were in contact with four *V. cholerae* O139 patients. One mother-child pair with *V. cholerae* O1-positive culture was also in contact with one *V. cholerae* O1 patient. In these cases, they were probably infected via their index patients.

Moreover, two pairs of mothers and children with *V. cholerae* O139-positive cultures were in contact with *V. cholerae* O1 patients. The organisms would have been transmitted from another source of infection. Thus, colonization of *V. cholerae* among persons in contact with cholera patients would be transmitted probably via their index patients or from other sources.

REFERENCES


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