

Rotavirus in children with diarrhea in Tripoli, Libya

The most common cause of acute diarrhea in young children in developed and developing countries are rotaviruses. In developing countries, it is estimated that 20–70% of hospitalizations and close to one million children below the age of five die annually because of rotavirus infections (1). Of the seven groups (A–G) of rotaviruses, group A is usually the cause of rotavirus-associated diarrhea. Infections due to rotaviruses occur via the fecal–oral route. Previous studies from Libya showed that rotavirus is the leading cause of infectious diarrhea. However, these studies were carried out more than a decade ago (2–4).

Two hundred stool samples were collected between September 2008 and May 2009 from children aged a few days to 60 months with acute gastroenteritis attending the Aljalla Pediatric Hospital, Tripoli, Libya. Samples were examined for group A rotavirus antigens using ELISA (Rotavirus IDEIA Dako, UK). The Epi-2000 software (Centers for Disease Control and Prevention, Atlanta, GA, US) was employed for statistical analysis. *P*-values were calculated using χ^2 -test and *P* < .05 was considered statistically significant.

Rotavirus was detected in 33% (66/200) of children examined. Rotavirus was observed at closely similar rates among male and female patients, 33.6% (40/119) and 32.1% (26/81), respectively. However, the virus was detected significantly more frequently (*P* < .04, OR = 2.64) among diarrheic children aged ≤ 24 months (36.1%, 60/166) than among diarrheic children aged >24 months (17.6%, 6/34). Seventy percent (140/200) of diarrheic children required hospitalization. Rotavirus was detected significantly more frequently (*P* < .002, OR = 3.33) among hospitalized children (40%, 56/140) than among non-hospitalized children (16.7%, 10/60). It should be noted that hospitalization was not based on ELISA results. The highest frequencies of the virus were detected in December (50%, 3/6), February (37.5%, 24/64), and March (45.2%, 19/42). Table 1 shows the distribution of rotavirus infection among diarrheic children during the study period of 9 months.

A review of the literature (5) showed prevalence rates of 24%–31% for rotavirus in Libyan children with diarrhea. A rate of 33% was found among the population studied in the present investigation. In addition, a significant association of rotavirus with diarrheic children requiring hospitalization was observed. A study from Zliten in Libya reported that 98% of rotavirus-positive

Table 1. Distribution of rotavirus infection among diarrheic children

| Month of study | No. tested | No. positive (%) |
|----------------|------------|------------------|
| September | 7 | 1 (14.3) |
| October | 5 | 1 (20.0) |
| November | 16 | 5 (31.3) |
| December | 6 | 3 (50.0) |
| January | 35 | 12 (34.3) |
| February | 64 | 24 (37.5) |
| March | 42 | 19 (45.2) |
| April | 17 | 1 (5.9) |
| May | 8 | 0 (0.0) |
| Total | 200 | 66 (33) |

children with diarrhea were dehydrated (3). Our findings and those of others from Libya (2–4) indicate that rotavirus may be responsible for a large part of the morbidity and mortality associated with this syndrome in this country. Such findings support the urgent need to introduce a rotavirus vaccination program in Libya to protect the pediatric population (6). In addition, the health authorities and other related agencies should promote the benefits of breastfeeding and good personal hygiene among child-bearing mothers using the media and other venues (e.g. maternity clinics) to reduce the incidence of rotavirus-associated diarrhea in children less than 2 years of age.

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