

An outbreak of gastroenteritis by emerging norovirus GII.2[P16] in a kindergarten in Kota Kinabalu, Malaysian Borneo

ABSTRACT

Outbreaks of diarrhea in kindergartens are underreported and frequently go unnoticed in developing countries. To better understand the etiology this study was performed during an outbreak of diarrhea in a kindergarten in Sabah, Malaysia. Outbreak investigation was performed according to the standard procedures. In this outbreak a total of 34 (36.5%) children and 4 (30.8%) teachers suffered from gastroenteritis. Stool samples from seven children and 13 teachers were tested for rotavirus and norovirus. During the investigation stool samples were collected and sent in cold chain to the laboratory. The samples were subjected to rotavirus enzyme linked immunosorbent assay, and reverse transcription PCR for norovirus. All samples were negative for rotavirus but positive for norovirus. To determine the genogroup and genotype of norovirus, nucleotide sequencing of the amplicons was performed. All norovirus from the outbreak was of genotype GII.2[P16]. To determine the relatedness of the strains phylogenetic analysis was done using neighbor-joining method. Phylogenetically these strains were highly related to GII.2[P16] noroviruses from China and Japan. This study provided evidence that a diarrheal outbreak in a kindergarten was caused by GII.2[P16] norovirus which is an emerging strain in East Asia and Europe.