RAPID DIAGNOSIS OF HUMAN ROTAVIRAL INFECTIONS BY DEMONSTRATION OF VIRAL RNA GENOME

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SUMMARY

The diagnostic potential of polyacrylamide gel electrophoresis (PAGE) and sensitive silver staining for the detection of rotavirus in clinical specimens obtained from children and adults with diarrhea in Bangkok and Nonthaburi was determined. The sensitivity and specificity of the method were equal to those exhibited by enzyme-linked immunosorbent assay (ELISA). The technique was further modified to reduce cost and working time. Modification by over-passing an expensive phenol extraction step of stool sample before RNA analysis reduced the sensitivity of the method. Because of it's high sensitivity, unambiguous nature of positive results, economy, simplicity, rapidity, and independence on specific antigen or antibody, the technique is adaptable to all situation to use for investigation of rotaviral associated diarrhea. The method also showed an immediate determination of the RNA electropherotypes which is of value for epidemiological study. The incidence of pararotaviral infections, double infections and reinfection were demonstrated during this study.

Results from this routine diagnosis of rotaviral infection in 1236 diarrheic patients visited Siriraj and Children's Hospitals in Bangkok and Bamrasnaradura Infectious Disease Hospital in Nonthaburi during July 1985 - July 1986 indicated that rotavirus is the most important cause of acute gastroenteritis in children during the first 4 years of life. The average infection rate among pediatric diarrhea was 31.9 % when compared to 8.2 % in adult diarrhea. The incidence was observed all year round with peak

in cooler and drier months. The relative role of rotavirus and most of the bacterial pathogens in the etiology of gastroenteritis in children and adults was demonstrated.