

Thesis Title Epidemiology of Human Rotavirus
 Infection in Pediatric Diarrhea
 in Different Geographical Areas
 of Thailand during July 1987-June
 1991 (A Study of Electropherotype
 and Serotype)

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ABSTRACT

A continuous study on rotavirus infections among pediatric diarrheas visited hospitals in Bangkok, Lampang, Hat Yai, Nakhon Ratchasima and Surat Thani was made by polyacrylamide gel electrophoresis and silver staining method. Rotavirus was found to be endemic in all studied provinces and caused epidemic annually. The epidemic pattern of each place was more or less different in time and duration. The magnitude of epidemic varied in different seasons and different areas of study. The

rate of infection during the non-epidemic months was high (20%) in Bangkok and low (<10%) in other provinces. The epidemic was initiated by a 1-2°C drop of temperature from 28-29°C, be maintained at low relative humidity (<75%) and suspended in warmer climate. Genomic variability of rotaviruses detected in each geographical area ranged from 9-53 electropherotypes per season, but only one or a few electropherotypes predominated. Within the same epidemic year, the same electropherotypes might predominate in most or all studied areas; or the different or local strains might play predominant roles. Subgroups and serotypes of representative rotaviruses were determined by ELISA using specific monoclonal antibodies to subgroup and serotype of human rotaviruses. A long-term study in Bangkok showed the epidemics of serotype 4 during 1982-1983 followed by serotype 1 human rotaviruses, with serotype 2 co-existed throughout the study period. Serotype 1 caused epidemic for 1 or more than one successive epidemics. Serotype 2 rotaviruses increased every other years and remarkably predominated during 1987-1988.

Electropherotypes analysis showed that each epidemic of the same serotype caused by different rotavirus strains. Serotype 1 (during 1988-1989) and serotype 2 (during 1987-1988), each of identical electropherotype caused epidemic in all studied provinces. Serotype variation among studied geographical areas was observed during 1987-1991, and the predominant serotypes found were in different electropherotype.