ABSTRACT

A STUDY OF DIARRHOEA AMONG CHILDREN WITH SPECIAL REFERENCE TO ROTAVIRUS INCLUDING DETECTION AND MOLECULAR CHARACTERIZATION OF ROTAVIRUS IN A TERTIARY CARE HOSPITAL, THANJAVUR

Aim and Objectives:

Diarrhoeal diseases are the second most common cause for mortality in children below five years. Currently Rotavirus is the leading common cause of severe, life threatening gastroenteritis in children. Rotavirus is the cause for 23-39% of diarrhoea in children. Prevalence of Rotavirus infections varies according to age, season and geographical area. The aim of this study to determine the Prevalence of Rotavirus infections, to characterize Rotavirus strains circulating during this period, provide region specific common genotype information of Rotavirus in Thanjavur tertiary care hospital.

Materials and Methods:

This study includes of 80 children aged less than 5 years suffering from acute gastroenteritis, admitted in pediatric ward, at tertiary care hospital Thanjavur Medical college Hospital, Thanjavur during July 2014 to June 2015. All the 80 samples initially tested to rule out bacterial and parasite

causes. By using Premier™ Rotaclone ELISA Kit Rotavirus antigen was detected. Randomly selected 15 samples including positive and negative samples were tested for RNA identification by real time multiplex RTPCR. Six positive samples by RTPCR were further processed for genotyping by conventional multiplex PCR.

Results and Observations:

Prevalence of Rotavirus diarrhoea in this study was about 29%. Rotavirus diarrhoea was more common in the age group of below 2 years. There was no significant difference between the sexes in this study. Rotavirus diarrhoea was common during winter months from October to March. 87% of RV positive children presented with vomiting which was considered as second predominant symptom next to diarrhoea. 58% of the cases reported with severe dehydration in this study. Duration of hospitalization in Rotavirus positive cases was more when compared to negative cases which imply severity of rotaviral infections. Out of 15 samples, 40% were positive by both ELISA & Rotavirus-A Real-time PCR, 46% were negative by both ELISA & Rotavirus-A Real-time PCR, 13% which were positive by ELISA were negative by RT PCR were considered as borderline positives.

G-P genotyping was done for 6 samples which were positive by Rotavirus-A Real-time PCR. Among 6 samples, G-P type combination most commonly found was G2P[4] (50%) followed by G1P[8] (33%). Remaining 17% was untypable.

Conclusion:

This study highlights the prevalence of Rota Viral Gastro Enteritis (RVGE) in under five year children which is 29%. ELISA for detection of rotaviral antigen is the very usual method for early diagnosis of RVGE. RT PCR is gold standard method for diagnosing RVGE but it's very expensive to undertake as routine diagnostic procedure. The commonest strain of Rotavirus pertaining to Thanjavur tertiary care hospital during the study period was G2P[8] followed by G1P[4]; hence pentavalent vaccine RotaTeq which contains G1 & G2 is preferred over monovalent vaccine. Implementation of effective control measures such as safe drinking water, proper sanitation and vaccination is very much needs to control the morbidity caused by RVGE in under five children.

Key Words: Rotavirus, Thanjavur, RTPCR, Genotyping