

Molecular Detection of Acute Virus Infection in Children Hospitalized with Diarrhea in North India during 2014-2016

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Abstract : Background: This acute gastroenteritis viruses such as rotavirus, astrovirus, and adenovirus are mainly responsible for diarrhea in children below < 5 years old. Molecular detection of these viruses is crucially important to the understand development of the effective cure. This study aimed to determine the prevalence of common these viruses in children < 5 years old presented with diarrhea from Lala Lajpat Rai Memorial Medical College (LLRM) centre (Meerut) North India, India. Methods: Total 312 fecal samples were collected from diarrheal children duration 3 years: in year 2014 (n = 118), 2015 (n = 128) and 2016 (n = 66) , < 5 years of age who presented with acute diarrhea at the Lala Lajpat Rai Memorial Medical College (LLRM) centre (Meerut) North India, India. All samples were the first detection by EIA/RT-PCR for rotaviruses, adenovirus and astrovirus. Results: In 312 samples from children with acute diarrhea in sample viral agent was found, rotavirus A was the most frequent virus identified (57 cases; 18.2%), followed by Astrovirus in 28 cases (8.9%), adenovirus in 21 cases (6.7%). Mixed infections were found in 14 cases, all of which presented with acute diarrhea (14/312; 4.48%). Conclusions: These viruses are a major cause of diarrhea in children <5 years old in North India. Rotavirus A is the most common etiological agent, follow by astrovirus. This surveillance is important to vaccine development of the entire population. There is variation detection of virus year wise due to differences in the season of sampling, method of sampling, hygiene condition, socioeconomic level of the entire people, enrolment criteria, and virus detection methods. It was found Astrovirus higher then Rotavirus in 2015, but overall three years study Rotavirus A is mainly responsible for causing severe diarrhea in children <5 years old in North India. It emphasizes the required for cost-effective diagnostic assays for Rotaviruses which would help to determine the disease burden.

Keywords : adenovirus, Astrovirus, hospitalized children, Rotavirus

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