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Letter to the Editor

Comment on "Viral acute gastroenteritis: clinical and epidemiological features of co-infected patients"

Dear Editor,

I read with interest Ferreira et al.[1] evaluation of enteric viruses co-infections in hospitalized pediatric patients with acute gastroenteritis (AGE), and the assessment of clinical and epidemiological characteristics of these patients. This study would be valuable to formulate future plans to improve the diagnostic routine of viral AGE in hospital settings. Nevertheless, I would like to share particular apprehensions, and clarify some topics in order to contribute to the knowledge of viral AGE co-infections in Brazil.

The detection of positive rotavirus (RV) samples was conducted using mixed methodologies (enzyme immunoassay, latex agglutination and PAGE) with distinct sensitivity and specificity values. The evaluation of these methodologies performance is largely described in literature, and the results often show poor correlation due to distinct targets and inherent problems.[2] Considering the above-mentioned finding, the large collection period (9 years), and the limited number of stool samples, did the authors test all samples with these three different methodologies? Assurance of RV positivity is a critical issue, once it is the central base of the study. Still regarding RV positivity, and considering the fact that the authors used the sensitive and specific methods of RT-PCR and PCR (standard tests for viral diagnosis) for norovirus (NoV), astrovirus (AstV), and human adenovirus (HAdV) detection, why did the authors not use RT-PCR for RV detection or confirmation?

Another concern is the use of generic primers to HAdV detection. Virtually all HAdV serotypes have been found to be shed through the feces and a variety of serotypes have been detected in stool samples. Thus far, however only two serotypes, HAdV-40 and HAdV-41 (members of virus species HAdV-F) have been proven as a causative agent of AGE.[3] I understand that the authors conducted the clinical evaluation of the patients in order to eliminate acute respiratory or urinary infections due to HAdV, nevertheless the method described by Avéllon et al.[4] is able to detected 47 different types of HAdV. Therefore there is no guarantee that only enteric HAdV-40 and -41 were detected. In addition, several reports have described the detection of enteric HAdV infections using specific set of primers for HAdV-40 and -41, including in Brazil.[3]

The study also observed a significant difference ($p = 0.03$) in the median age of the children between the mono- and co-infected groups. It is known that breast-feeding plays an important role in reduce viral gastrointestinal infections, and could prevent RV infection in children during the first year of life. The higher frequency of viral-co-infections observed in older children could be related to breast-feeding. Did the authors have access to such information in the medical records archived?

The evaluation of disease severity between co-infected and mono-infected patients is an interesting point of the study. I am very curious about the causes of death that occurred among cases of nosocomial infection. Did the patients die due to severe dehydration? It is possible that the synergetic action of more than one enteropathogenic virus increases the clinical significance of diarrheal disease. However, the results of a study applying a clinical severity score indicate that the severity of diarrheal illness is not reflected in the proportion of mixed infections.[5] Another question can be raised: did the patients have some type of co-morbidity, immunosuppression or immunodeficiency that could contribute to the fatality? It is possible that the presence of co-infections in such debilitate patients could aggravate the diarrheal illness.

As stated by Ferreira et al.,[1] few reports concerning enteric viruses co-infections in hospitalized children are available in Brazil. Surveillance studies of AGE are important to determine the prevalence and variety of viral pathogens, to initiate targeted preventive measures, such as vaccine programs, and to monitor its impact.

Conflict of interest

Author declare to have no conflict of interest.

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