

Rotavirus gastroenteritis and strain diversity in Saudi Arabia. *Current status and future prospects.*

To the Editor

We applaud Dr. Kheyami¹ on the meticulous dissertation on strain diversity of rotavirus isolates in the Kingdom of Saudi Arabia (KSA). Certainly, constant surveillance on circulating rotavirus strain types in patients in KSA would be essential to pick up patients infected with mixed, or newer strains. In addition, it would be critical to monitor circulation of rotavirus in the environment, which has been a public health hazard. Rotavirus VP4, VP6, and VP7 genetic material was detected in river and waste waters in Amazon Hydrographic Basin and Rio de Janeiro in Brazil.²

During the 1980s, rotavirus gastroenteritis was diagnosed in 4 hospitals and 2 dispensaries in the Gizan area of KSA. Using 'Rotazyme' enzyme-linked immunosorbent assay (ELISA) kit (Abbott Laboratories, North Chicago, USA) at the King Fahad Central Hospital, Gizan, KSA, ELISA reactivity was evident in 39 Saudi and Yemeni infants, <3 year-old in both genders.³ Rather than an ELISA format for rotavirus diagnosis, health care centers in KSA should be fortified for a point-of-care diagnosis of rotavirus infections using simple, 1-2 step kits that do not require trained staff and sophisticated laboratory infrastructure. The performances of the 2 diagnostic tests for rotavirus infection were evaluated in stool samples in child-care centers of Lyon, France. During the assessment of VIKIA Rota-Adeno immuno-chromatographic test (bioMérieux, France) and the ELISA IDEIA Rotavirus kit (Dako) the results compared well with genotyping. The sensitivity and specificity of the VIKIA Rota-Adeno test and the ELISA IDEIA Rotavirus kit were strictly comparable and very good.⁴

In conclusion, constant surveillance on the circulation of different rotavirus types in Saudi environment and clinical practice would address rotavirus-associated morbidity in the community.

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Reply from the Author

I would like to thank Drs. Arya and Agarwal for their interest in my paper.¹ Indeed, countrywide monitoring

for enteric viruses and rotaviruses in particular is needed to reduce morbidity and mortality. Despite the recent progress in laboratory techniques, viral agents diagnostic tests are not routinely used in KSA. This is likely to have resulted in underestimation of the burden of disease attributable to them. Therefore, the role these agents play in general hospitalized children should be highlighted to medical staff and the public.

Our previous rotavirus study in Madina showed that rotavirus is responsible for 28% of the episodes of severe diarrhea requiring hospitalization.⁵ In the last few years, we have demonstrated the value of establishing strain surveillance before the introduction of any rotavirus vaccine to monitor the strains in circulation, to characterize strains against which vaccines might not be effective, and to identify new variant strains that might arise after a program of vaccination begins.⁶⁻⁸ On the other hand, other enteric agents may also be important. In this regards, our recent study showed that coronavirus ranked as the second cause of diarrhea in KSA with a relatively high detection rate (6%).⁹

In conclusion, the more widespread application of sensitive detection methods including ELISA and molecular techniques in laboratory investigations of the gastrointestinal agents will lead to better understanding, and more clearly define the true burden of their role in gastroenteritis in both children and adults, and may allow the diagnostic gap to be closed further.

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