

In progress: Impact assessment of rotavirus vaccine introduction in Pakistan's routine immunization program

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Background

Rotavirus diarrhea surveillance started in 2007 in major hospitals across Pakistan and shows average annual proportion of rotavirus cases to be 30.5% among children under 5 years of age receiving hospital care for diarrhea. Prevalent rotavirus genotypes were G1P[8], G2P[4] and G4P[6]. Monovalent rotavirus vaccine Rotarix[®] was rolled out in national immunization program of Pakistan during 2018. We are conducting a case control study aiming to assess vaccine effectiveness along with the ongoing surveillance, to also compare the proportion of diarrhea hospitalizations due to rotavirus, circulating rotavirus genotypes and changes in attendance rates of all-cause severe acute diarrhea pre- and post-introduction of vaccine.

Method

Rotavirus surveillance is going on for children <5 years hospitalized with severe acute diarrhea. Sentinel sites are five major tertiary care hospitals across the country. For case control study, children with age eligible to have received rotavirus vaccine and hospitalized with severe acute diarrhea are being enrolled. We will calculate vaccine effectiveness (one minus odds ratio of vaccination) by comparing stool rotavirus ELISA-positive cases with negative controls. Genotyping for all positive samples will be done using multiplex RT-PCR.

Result

Stool samples from 81.8% of 800 patients enrolled in case control study have been collected since April 2018. Vaccination records from 90% of the enrolled case patients have been obtained.

Conclusion

The information generated would be of value locally and globally as it would be the first to represent concrete evidence from this region with challenging social and demographic settings and resource constraints.