

Rotavirus vaccine has reversed the severity of diarrhea and trend of hospitalizations among children younger than five of age

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Background

World Health Organization has recommended immunization to prevent severe Rotavirus infection. Rotavirus diarrhea causes dehydration and prolonged hospitalization among children younger than five years of age. Therefore, this study was done to determine the prevalence of Rotavirus diarrhoea, severity of diarrhoea and hospital stay among vaccinated children aged 6 weeks to 2 years admitted with acute diarrhea in Mwanza city hospitals.

Methods

This was a hospital based cross sectional study conducted from July 2017 to January 2018. Vaccinated children aged 6 weeks to 24 months with acute diarrhea admitted at the three referral hospitals in the City Mwanza, Tanzania were recruited. Data for socio-demographic, symptoms and clinical findings were collected using a standard structured data collection adopted from WHO Rotavirus surveillance tool. Stool specimens were collected from each child for detection of the presence Rotavirus infection using an enzyme immunoassay (ProSpecT Rotavirus Microplate Assay, Oxoid Ltd, UK). The severity of diarrhea was assessed using bouts of diarrhea and degree of dehydration. The hospital stay of each child was documented. Data were analyzed using STATA software version 13.

Results

A total of 301 vaccinated children with acute diarrhea admitted in three hospitals were recruited in the study with a median age of 12 [IQR: 8 – 17] months; of these 9 (3.0%) and 292 (97.0%) had received one dose and two doses of Rotavirus vaccine respectively. Majority of children 166 (55.2%) were males. The prevalence of Rotavirus diarrhoea was 24.6% (74/301) [95% CI 20.0% – 29.8%]. Children with Rotavirus diarrhea had almost the same likelihood of having less than seven bouts of diarrhoea compared to those without Rotavirus diarrhea (91.9% [68/74] versus 92.9% [211/227]; p-value =0.761). Children with Rotavirus diarrhoea had almost the same likelihood of having no dehydration compared to those without Rotavirus diarrhea (39.2% [29/74] versus 43.2% [98/227]; p-value =0.547). Children with Rotavirus diarrhea had a significant shorter hospital stay than those without Rotavirus diarrhoea (3 [2 – 4] days versus 3 [3 – 5] days; p=0.0297).

Conclusions

Rotavirus vaccine has significantly reduced the prevalence and severity of Rotavirus diarrhea and has reversed the trend of hospitalizations among children younger than five years of age.