

Reduction of hospitalizations with diarrhea among children aged 0–5 years in Nouakchott, Mauritania, following the introduction of rotavirus vaccine

Mohamed-Lemine Cheikh-brahim Ahmed; Jorg Heukelbach; Abdellahi Weddih; Abdelkarim Filali-Maltoufa; Mariem Sidatt; Khattry Makhalla; Sid'Ahmed Dahdi; Aly Cheybany Cheikh Ahmed; Mohamed Val El-Mami; Jacqueline E. Tate; Umesh D. Parashar; Mohammed Benhafid

Introduction

Rotavirus vaccine was introduced in Mauritania in December 2014. We investigated hospitalizations with diarrhea during pre and post-vaccination periods among children aged 0–5 years in Nouakchott, the capital of Mauritania.

Methods

We conducted a retrospective review of hospital admission registries from November 1st 2012 through October 31st 2017 at all referral hospitals in Nouakchott. We described admissions of children aged 0–5 years by diagnosis, date of admission, age and sex, and compared the proportion of all childhood hospitalizations with diarrhea before and after rotavirus vaccine introduction.

Results

In total, 6552 (19%) of all 34,329 hospitalizations in 0–5 year-olds had diarrhea. Of these, 3523/16,952 (20.7%) were recorded during the pre-vaccine period, 1373/6897 (19.9%) during the transition period (November 2014–October 2015), and 1656/10,480 (15.8%) during the post-vaccination period. The proportion of all childhood hospitalizations with diarrhea during the pre-vaccine period was 22.6% among males and 18.7% among females. Approximately one third (32.3%) of hospitalizations with diarrhea occurred in children aged 6–11 months. During the post-vaccination period, the proportion of hospitalizations with diarrhea declined by 24%, and the highest reduction (74%) was observed in children aged 2 to 5 years ($P < 0.001$).

Conclusions

The proportion of childhood hospitalizations with diarrhea in Nouakchott was reduced by about one fourth after introduction of rotavirus vaccination in Mauritania, indicating a major impact for public health for children in the capital city.