

Rotavirus genotyping in pre and post area vaccination in Côte d'Ivoire from 2010-2018

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Background

Group A rotaviruses are the major viral agent of acute gastroenteritis and severe diarrhea in children <5 years old. The World Health Organization (WHO) recommends surveillance of circulating strains before and after introduction of vaccination in countries. However, the diversity of circulating strains in developing countries is a major challenge to the vaccination programs. This study, carried out in furtherance of the sentinel surveillance, aims to identify the different genotypes circulating before and after the introduction of the Rotavirus vaccine.

Method

All children with acute gastroenteritis aged 0 to 5 years, admitted in one of the sentinel surveillance collection sites were included in the study. The study period was from January 2010 to December 2018. Rotavirus was detected in stool specimens by enzyme-linked immunosorbent assay (ELISA). Rotavirus G and P types were determined by real-time polymerase chain reaction (RT-PCR).

Results

A total of 1472 stool samples were collected before introducing vaccination and 430 after. During the first period, 31.8% of the stools were rotavirus positive by ELISA test. G1 was predominant with 39.6% followed by G12 (27%). P [8] was 50.4%. The predominant genotype combinations were G1P [8] with 26.1%; G12P [8], 15%; G1P [6], 11.3% and G12P [6], 10.8%. After introducing vaccination 17.5% of the stools were positive by ELISA test. G1 was predominant with 52.9% followed by None typable (NT) strains (25.4%).

Conclusion

Genotyping of circulating rotavirus strains is important in monitoring strains before and after the introduction of the vaccine. With previous observations, these findings will contribute to baseline data to further monitor the impact of rotavirus immunization in Côte d'Ivoire.