

Norovirus and rotavirus in hospitalized children prevalence and association with gastroenteritis

Nkolo Mviena Gaston¹, Boula Angeline¹, Ngoh Rose¹, Akongnwi E. Mugyia², Valantine Ngum Ndze⁶, Njiki Kinkela Mina¹, Kemajou Grace¹, Ngoya Ebiguide Roger¹, Baonga Ba Pouth³, Nimpa Marcellin⁴, Mwenda Jason⁵, Koki Ndombo Paul¹.

¹Mother and Child Centre, Chantal BIYA Foundation Yaoundé, Cameroon

²Faculty of Science, University of Buea, Cameroon

³Expanded Programme on Immunization, Ministry of Public Health, Cameroon

⁴ WHO Country office, Cameroon.

⁵WHO- AFRO, Brazzaville, Congo

⁶ Faculty of Medicine and Biomedical Sciences University of Yaounde 1, Cameroon

Introduction

Rotavirus and Norovirus are leading viral causes of diarrhea in children. This study is conducted to determine the prevalence of rotavirus and Norovirus in hospitalized children < 5 years and also to establish the circulating strain of rotavirus and norovirus in a community of Yaoundé

Methods

A total of 902 stool were collected among children aged <5 years with acute gastroenteritis at the sentinel-base surveillance of Yaoundé- Cameroon, from January 2010 to December 2013. The stool samples collected from children were examined for rotavirus by ELISA and RT-PCR for rotavirus followed by RT-PCR and sequencing for norovirus

Results

Rotavirus and norovirus were detected in 31%(277) and 11%(99) of 902 stool samples respectively. The most prevalent genotype of rotavirus were G3P[6] (24.5%) followed by G1P[8] (15%)

Out of 76 samples tested positive for norovirus were sequenced and sequences analyses found 2 genotypes GI and 8 genotypes GII. The most prevalent genotype was GII.4(80.3%).

Five different genotypes each circulated in 2010 and 2013 while only 2 and 3 genotypes circulated in 2011 and 2012 respectively

The monthly distribution of norovirus genogroups through the years showed that noroviruses are generally detected all year round, with possible peaks in February, July, October and November. Yearly peaks occurred in August and November of 2010, February and November of 2011, September, October and November of 2012 and in July, October and November of 2013

Norovirus co-infection with rotavirus was 3.2%

Conclusion

This study confirmed the presence of rotavirus and norovirus in the community. However, the prevalence of rotavirus infection among children appears to be high while that of norovirus infection is low