

# Children's clinical-biological profile positive to rotavirus in the DRC: Kalembelembe surveillance site experience 2009 - 2018

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Acute Rotavirus diarrhea remains the leading cause of severe acute gastroenteritis in infants and young children in Sub Saharan Africa.

Rotavirus deaths could reach 600 000 cases a year worldwide, mostly in the developing country. Several studies have shown that it is through vaccination that developed countries have significantly reduced the incidence of this disease and others have eradicated it outright.

In the DRC, clinical-biological surveillance of the infection was introduced in August 2009 in children under 5 admitted for Rotavirus gastroenteritis in the site of the Kalembelembe Pediatric Hospital. The purpose of this surveillance is to determine the circulating rotavirus strains in the DRC and to advocate for the introduction of the vaccine.

The main objective of the study is to determine the clinical and biological parameters observed in these children diagnosed with Rotavirus positive during their hospitalization.

## Method

The present study is retrospective from August 2009 to July 2018 based on the collection of clinical data recorded in the registers and database of Rotavirus surveillance coordinated by the National Program of Vaccination with the support of WHO.

The surveillance included all children under 5 hospitalized at Kalembelembe Pediatric Hospital for gastroenteritis during the study period.

The biological analyzes were carried out at the laboratory of the Kalembelembe site by the enzyme immunoassay technique (ELISA). The results of analyzes are confirmed by the National Laboratory for Biological Research (INRB) and the genotyping analysis is also carried out.

The external quality control is regularly performed in the 3 sentinel sites (Kalembelembe, INRB and SENDWE) organized by CDC ATLANTA under the supervision of WHO.

Data was processed and analyzed using Excell software

## Result

In total from 2009 to 2018, 2,344 cases of severe acute diarrhea were notified, 2,185 stool samples were taken and analyzed by Rotavirus ELISA and 1,420 samples were rotavirus positive (65%). The sex ratio M/F of positive cases is 1.34 (57%) of Rotavirus positive children are male. The age distribution of positive cases of severe acute gastroenteritis shows that the most affected age groups are successively.

Age (month)	Proportion (%)
0 - 6	31%
7 - 12	50,6%
13 -18	13,2%
> 18	5,2%

The monthly distribution of Rotavirus-positive cases of gastroenteritis shows that Rotavirus infection coincides with the dry season in our country.

The most commonly found genotypes in the DRC: G2P6 26%, P8 21%, G1P8 13% and combinations G1P4 7% P6 7%, G1P6 4%, G3P6 3%, G3P8 3%, G2P4P8 2% and others G4, P4G6 and G1G2P6. Regarding the clinical parameters of Rotavirus positive cases deaths:

CLINICAL PARAMETERS OF DEATH	N(%)
STATE OF HYDRATION (Dehydration)	M = 05 (21%) S = 19 (79%)
HOSPITALIZATION STAY	<7 J = 19 (79%) ≥7J = 05 (21%)
TOTAL	24

Rotavirus acute gastroenteritis mortality rate is 2%

The majority of cases of death, 79%, suffer from severe dehydration with a hospital stay <7 days

### Conclusion

Acute rotavirus diarrhea remains a major public health problem in Africa in general and the DRC in particular with an incidence of 65% in hospitalized children under 5 years of age with Kalembelembe Pediatric Hospital without sex differentiation because sex ratio is 1.

The majority of child deaths (79%) arrive at the hospital at severe dehydration level and die a few hours or days after their hospitalizations.

The group 0 to 18 months is the most affected because of their vulnerability and in increasing the infant mortality rate.

Hence the need to introduce vaccination against acute gastroenteritis severe Rotavirus to reduce the high incidence of this infectious and transmissible disease finally to prevent possible outbreak despite the problem of genotypic diversity of strains remains in our country.