

Rotavirus in Human and Domestic Animals in Sudan

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INTRODUCTION

In humans, rotavirus has been documented to cause about 111 million cases of gastroenteritis requiring home care annually, 25 million clinic visits, 2 million hospitalizations and a median of 440,000 deaths in children under 5 years of age world wide (Parashar *et al.*, 2003). Rotavirus was the major detected pathogen associated with diarrhea in Melit District in South Sudan (Sixl *et al.*, 1987).

In Sudan, Mohamed *et al.* (1998) detected rotavirus in 8 out of 200 camel calves; and by us in 13.9% of 332 camel calves with diarrhea (Ali *et al.*, 2005).

In Sudan, rotavirus was detected in 77 out of 116 calf samples (El Nour, 1994).

Berrios and colleagues (1988a) described the association of rotavirus infection with diarrhea in young goats.



MATERIALS and METHODS

Sample collection: A total of 198 stool samples were collected during 2005-2006 from 85 infants, 50 camel calves, 40 cattle calves, and 23 goat kids.

Group A rotavirus antigen detection: All fecal samples were examined by Rotavirus IDEIA (DAKO Diagnostics, U. K.).

Polyacrylamide gel electrophoresis (PAGE): 20 samples, were tested by PAGE according to published methods (Steele and Alexander, 1987).

RESULTS

Rotavirus antigen detection:

A total of 33 (12 infants, 13 cattle, 5 goat and 3 camel) samples tested for group A rotavirus were found positive (Fig. 1).

Polyacrylamide gel electrophoresis (PAGE):

Of 20 samples examined by PAGE, 10 were positive for group A rotavirus. Electropherotype with different profiles (Fig.1)

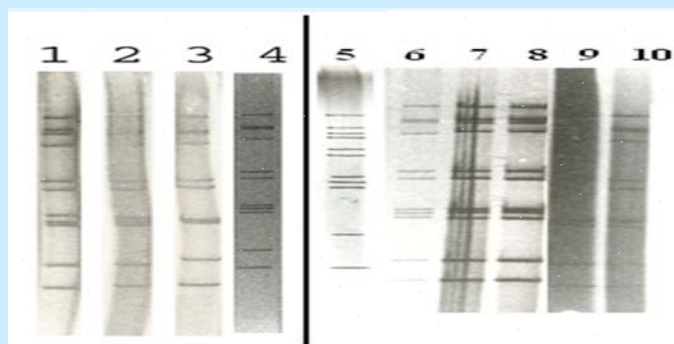


Figure 1 : Detection of group A rotavirus in fecal samples of infants and domestic animals in Sudan using ELISA.

Figure 2: Characteristic group A rotavirus long profile detected by PAGE, lane 1.2.3.4.10 human, lane 5 camel, lane 6,7,8,9 cattle samples

DISCUSSION and CONCLUSION

In this study rotavirus antigen was detected in 14.1 % of 85 tested infants. In the present study, rotavirus antigen was detected in 6 % of 50 tested camel calves: this confirms the association of rotavirus with camel calf diarrhea.

The results obtained in this small study reveal the detection of rotavirus antigen in 32.5 % of 40 tested calves, this was the highest incidence noticed in this work and is higher than most of the previous reports. This study has shown the significant role of rotavirus in diarrhea in kids (21.7 %).

Characteristic group A rotavirus long profile was seen in 10 samples, most of them were human samples.

Group A rotavirus is existing in human and domesticated animals in Sudan.

The highest rotavirus incidence was in cattle then in goats.

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