total testing for year 2011). Rotavirus was detected in 47 (45.6%) children. The disease characteristics, except severity, were similar for rotavirus-positive and rotavirus-negative cases as per Clarke and Vesikari scoring system. However, these two scales differ greatly in categorizing the severeity. As the Clarke score does not include direct assessment of dehydration, it is less likely to identify an episode of disease as severe, as compared to Vesikari score [6].

The rotavirus disease proportion in this study is close to the earlier reported studies in hospitalized children using ELISA for diagnosis of infection. An earlier study showed good sensitivity and specificity of rapid diagnostic kit when compared to standard diagnostic test [7], whereas another study reported high false positivity [8]. Limitations of the study include small sample size, and lack of comparison of the results with the standard diagnostic method. These results might not be generalized or representative of the actual epidemiology. In conclusion, the study re-affirms that significant proportion of acute diarrhea in hospitalized under-five children is caused by rotavirus. There is a need to evaluate the rapid diagnostic kits *vis-à-vis* standard diagnostics.

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Association of Rotavirus Gastroenteritis with Histo-blood Group Antigens

Association of rotavirus gastroenteritis with histo-blood group antigens in children younger than 5 years admitted with diarrhea (*n*=389) was studied. Distribution of blood groups in rotavirus positive (*n*=96) and rotavirus negative (*n*=51) diarrhea gastroenteritis cases did not show any susceptibility to any blood group; blood group O seemed to be protective.

Keywords*: Epidemiology, Diarhea, Risk.*

Rotavirus is the predominant cause of severe diarrhea in children in both, developed and developing countries [1]. The discovery that cell attachment protein VP8 of human rotavirus specifically interacts with A-type Histo-Blood Group Antigens (HBGA) [2,3] have prompted rotavirus epidemiologic studies in relation to host HBGA phenotypes [4]. A recent study has indicated that the binding pattern of rotavirus to different HBGAs is strain-dependent [5] necessitating epidemiological studies in different populations. We aimed to study the association of rotavirus infection with HBGA phenotype.

This study was conducted between October 2013 to July 2014, and enrolled under-five children admitted with diarrhea to Capital Hospital Bhubaneswar, Odisha. Approval was obtained from human ethical committee of RMRC, Bhubaneswar. Children admitted to the hospital with three or more watery stools within 24 hrs (WHO definition) were enrolled into the study. Fecal samples (*n*=389) and finger prick blood (*n*=147) were collected from the enrolled children whose parents/guardians

TABLE I DISTRIBUTION OF BLOOD GROUPS AMONG HOSPITALIZED CHILDREN WITH DIARRHEA

Blood group	*Rotavirus-positive (n=96)*	*Rotavirus negative (n=51)*	*Total (n=147)*
A[#]	28 (29.2%)	14 (27.5%)	42 (28.6%)
B[#]	40 (41.7%)	13 (25.5%)	53 (36.1%)
AB[#]	7 (7.3%)	4 (7.8%)	11 (7.5%)
O*	21(21.9%)	20 (39. 2%)	41 (27.9%)

*[#]P>0.05,*P=0.02.*

provided consent. Stool samples were tested for rotavirus antigen using Ridascreen kit [6] and blood group was determined using Monoclonal ERYSCREEN Tulip Diagnostics Ltd. (India) kit [7].

The enrolled children (*n*=389;275 males) belonged to 14 districts of the State. Rotavirus antigen was detected in 54%, of whom majority (52.4%) were between 7-12 months age. Majority were from low socioeconomic class (class IV-51.6%, class III-45.2%).

Distribution of blood groups among the gastroenteritis cases is given in ***Table* I**. There was no susceptibility of any particular blood group to rotavirus infection. However, O blood group seemed to be protective (*P*=0.02).

Studies from other parts of the globe revealed varied results on association of HBGA with rotavirus infection. Trang, *et al*. [8] showed all rotavirus-infected children to be HBGA secretors or partial secretors suggesting that HBGA phenotype is a key susceptibility factor for rotavirus infection in children. A report from Turkey suggested an association of rotavirus infection with blood group A [9]. Another study from Turkey; however, did not find any relationship between rotavirus gastroenteritis and major blood groups [10], a finding similar to our results.

This study was limited by hospital-based case enrolment. Given the observations of *in vitro* studies [4] and varying results from limited epidemiological studies, large-scale community-based investigations may add further to the present literature.

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