

Evaluation of Clinical and Demographic Profile of Pediatrics Patients Presenting with Acute Diarrhea in a Tertiary Care Teaching Hospital

Rajeev Sharma¹, Neeta Sehgal²

¹Assistant Professor, Department of Pediatrics, Sakshi Medical College and Research Centre, Miana, Madhya Pradesh, India, ²Assistant Professor, Department of General Surgery, Sakshi Medical College And Research Centre, Miana, Madhya Pradesh, India.

Abstract

Background: Decreasing trend of exclusive breast feeding and faulty practices of bottle-feeding play an important role in the causes of acute diarrhoea. The main cause of death in acute diarrhoea is dehydration, which results from the loss of fluid and electrolytes in diarrheal stools. The present work was planned to assess renal function (Blood Urea and Serum Creatinine) in acute diarrheal disease with dehydration. **Subjects and Methods:** This prospective, observational clinical study was carried out in the Department of Pediatrics, Sakshi Medical College and Research Centre, Miana, Madhya Pradesh during the period from March, 2017 to May, 2018. The sample size was 72; with 2 groups A and B having 36 patients each. **Results:** In group A, a majority of 20 (55.6%) patients were not given bottle feeding while the remaining 16 (44.6%) were given. Almost 21 (58.3%) patients were not given bottle-feeding whereas 15 (41.7%) were given in group B. Maximum patients 20 (55.6%) of A and 19 (52.6%) of B group had no dehydration whereas remaining 16 (44.4%) and 17 (47.2%) patients had some dehydration respectively. **Conclusion:** The Fever and vomiting were the complaints nearly all often linked with diarrhea. A slight fewer than half of the children under research had some-dehydration. Almost half of the study population goes to the toddler age group.

Keywords: Fever, Vomiting, Dehydration, Malnutrition & Acute Diarrhea.

Corresponding Author: Dr. Rajeev Sharma, Assistant Professor, Department of Pediatrics, Sakshi Medical College and Research Centre, Miana, Madhya Pradesh, India.

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Introduction

Diarrhoea is defined as having loose or watery stools at least three times per day or more frequently than normal for an individual. More than 1 billion cases and at least 4 million deaths per year are attributed to diarrhoea worldwide.^[1] All children tend to suffer from diarrhea at some time during their childhood. WHO has estimated that globally there are nearly 1.7 billion cases of childhood diarrheal disease every year and that it remains the 2nd leading cause of death in children under 5 years worldwide.^[2] Sometimes, diarrhea may co-exist with vomiting, fever, abdominal pain etc. depending upon its etiology. Diarrheal diseases can also lead to significant malnutrition and dehydration. Repeated attacks of diarrhea, infections, poor hygiene etc. may be responsible for such outcomes.^[3] Basically, each diarrheal episode deprives the child of nutrition along with fluid loss, thus aggravating the severity of malnutrition and dehydration. Repeated attacks of diarrhea, infections, poor hygiene, etc. may be responsible for such outcomes.^[4] The results from this study will help in a better understanding of acute diarrhea in the pediatric age group of a particular geographical region.^[5] Our aim was to evaluate the clinical and demographic profile of infants and children presenting with acute diarrhea in a tertiary care teaching hospital.

Subjects and Methods

This prospective, observational clinical study was carried out in the Department of Pediatrics, Sakshi Medical College And Research Centre, Miana, Madhya Pradesh during the period from March, 2017 to May, 2018. The sample size was 72; with 2 groups A and B having 36 patients each. A written consent of patient's parents or guardian was obtained on an informed consent form in their respective vernacular language. It was followed by data collection a case record form. Only those infants and children who fulfilled inclusion criteria such as those aged between 6 months to 5 years, suffering from acute diarrhea and presenting to the Pediatric Department at this set-up for treatment; were included in the study. Those with co-morbid conditions or admitted to the PICU were excluded. Here, patients were divided into two groups according to the probiotic preparation being administered. Accordingly, their clinical and demographic profile were also noted and studied in two groups. Various parameters analysed were age and gender distribution, chief complaints, feeding practices, nutritional status and assessment of dehydration. The Statistical analysis was done using IBM, SPSS Statistics-22 software.

Results

Table 1: Shows the sex distribution of patients

Sex	Group A (N=36) %	Group B (N=36) %
Male	21 (58.3%)	19 (52.8%)
Female	15 (41.7%)	17 (47.2%)
Total	36 (100%)	36 (100%)

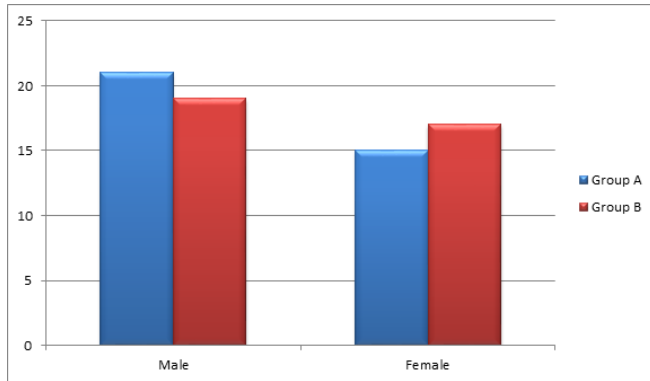


Figure 1: Shows the sex distribution of patients.

Table 2: Duration of exclusive breast-feeding among diarrheal patients

Duration of exclusive breastfeeding (months)	Group A (N=36) %	Group B (N=36) %
04	06 (16.7%)	04 (11.1%)
05	08 (22.2%)	07 (19.4%)
06	19 (52.8%)	20 (55.6%)
07	03 (8.3%)	05 (13.9%)

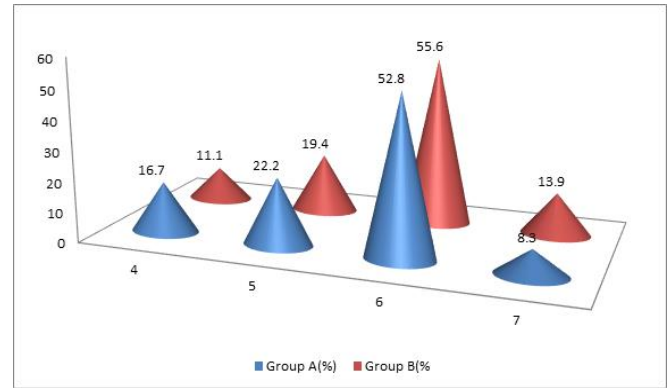


Figure 2: Shows the duration of exclusive breast-feeding among diarrheal patients.

Table 3: Severity of malnutrition and degree of dehydration in both group

Duration of exclusive breastfeeding	Degree of dehydration					
	Group A (N=36) %			Group B (N=36) %		
	No	Yes	Total	No	Yes	Total
No	10 (27.8%)	04 (11.1%)	14 (38.9%)	09 (25.0%)	03 (8.3%)	12 (33.3%)
Mild	08 (22.2%)	05 (13.9%)	13 (36.1%)	08 (22.2%)	06 (16.7%)	14 (38.9%)
Moderate	02 (5.6%)	07 (19.4%)	9 (25.0%)	02 (5.6%)	08 (22.2%)	10 (27.8%)
Total	20 (55.6%)	16 (44.4%)	36 (100%)	19 (52.8%)	17 (47.2%)	36 (100%)

This present study was conducted in the Department of Pediatrics, Sakshi Medical College And Research Centre, Miana, Madhya Pradesh. Out of 72 patients in group A, 21 (58.3%) males exceeded 15 (41.7%) females, with a male. Similarly in the case of Exclusive breast-feeding: Exclusive breastfeeding (EBF) for 6 months was given in a large no. of group A and B patients i.e. 19 (52.8%) and 20(55.6%) respectively. Few others were given for 4, 5, or 7 months. [Table 2 & Figure 2] Almost 12 (33.3%) and 10 (27.8%) patients in groups A and B respectively had continued breastfeeding during the study. In the remaining 24 (66.7%) and 10 (72.2%) group A and B patients respectively, breastfeeding was carried out till 1.5, 2, or 2.5 years. [Table 3] In group A, a majority of 20 (55.6%) patients were not given bottle feeding while the remaining 16 (44.6%) were given. Almost 21 (58.3%) patients were not given bottle-feeding whereas 15 (41.7%) were given in group B. Maximum patients 20 (55.6%) of A and 19 (52.6%) of B group had no dehydration whereas remaining 16 (44.4%) and 17 (47.2%) patients had some dehydration respectively. [Table 3]

In group A, a maximum of 10 (27.8%) patients had no dehydration and malnutrition while 8 (22.2%) had no dehydration but mild malnutrition. Some dehydration with

no malnutrition was noted in 4 (11.1%) patients while 5 (13.9%) and 7 (19.4%) patients with some dehydration had mild and moderate malnutrition respectively as shown in [Table 3]. In group B patients with no dehydration; 9(25.0%), 8 (22.2%) and 2 (5.6%) patients had no, mild and moderate malnutrition respectively. In patients with some dehydration, 3 (8.3%) patients had moderate malnutrition while 6 (16.7%) had mild and 8 (22.2%) had no malnutrition.

Discussion

Very few studies were conducted in India which focuses on clinical and demographic profile of infants and children presenting with acute diarrhea in a tertiary care teaching hospital. The present study covered the clinical and demographic profile of infants and children aged 6 months to 5 years and presenting with chief complaints of acute diarrhea to the Department of Pediatrics, Sakshi Medical College And Research Centre.^[6] In our study, analysis of the socio-demographic profile of the study population showed that a large no. of patients belonged to the toddler age group in groups A and B respectively. Accordingly, their Mean age_S.D were (2.32_1.36) and (2.60_1.52) years in group A

and B respectively. Infants and preschool children were relatively lesser affected in both study groups. Gender distribution in our study showed male preponderance in both the groups as mentioned in table 1. Lee et al,^[7] in their research total number of 27 children were assessed. Male: female ratio 1.1:1. Aluntas et al,^[8] done their study on 70 children of which 52% female, 48% male. Infants and preschool children again had a greater number of males than females. Chen et al and Heuilan et al in their respective studies noted male predominance and the majority of the patients (84%) were between 6 months to 2 years.^[9] Among the presenting complaints of diarrheal patients, vomiting, as well as fever, was noted in a majority. Similar observations were examined in the studies performed by Francavilla R et al, where 65% of patients had vomiting and 51% of study participants had fever associated with diarrhea.^[10] This may be due to higher incidences of infective origin diarrhea among patients. Depending upon the loss of fluid, fewer patients in both, groups A and B, also presented with symptoms of refusal to feed and decreased urinary output each. Kumar M et al,^[11] described after vomiting and fever, (47.7%) with decreased oral intake and 12 (27.3%) with decreased urine output along with loose stools were noted. Exclusive breastfeeding for an ideal 6 months was noted in the highest no. of study participants in groups A & B. Reifen et al,^[12] performed research on 3 children with prolonged, watery diarrhea ongoing in premature infancy, they establish dissimilar histologic and ultrastructural features that they elected tufting enteropathy. In diarrheal patients of our study, nutritional status was also observed and the results showed that those 10 group A and 09 group B patients who had normal nutritional status had no dehydration as well. Similarly, moderate malnutrition noted in 07 groups A and 08 group B patients had some dehydration. Contradictory to that, only 02 in group A and 02 in group B had moderate malnutrition but no dehydration. This is similar to the observations from Francavilla R et al study where the control and placebo groups had the majority of patients with no dehydration i.e. 25 and 26 respectively.^[10] Literature also suggests that malnutrition can predispose a child to diarrhea and severity may be slightly higher in those patients causing fluid loss and dehydration. The knowledge of resistance patterns of common etiological agents in the local area can help practitioners to choose an adequate antimicrobial drug to start empirical therapy in a patient with severe diarrhea without knowledge of a specific pathogen. This study can also be carried out at regular intervals to study any variations in the pattern of clinical profile of such patients. The effectiveness of treatment in these patients can also be studied in the future. Dehydration and malnutrition can also

be prevented through patient education, availability of safe drinking water, adequate sanitation and hygiene.

Conclusion

These findings suggest that, there were few limitations as well. The Fever and vomiting were the complaints nearly all often linked with diarrhea. A slight fewer than half of the children under research had some-dehydration. Almost half of the study population goes to the toddler age group. Proportional studies linked to contributory agents like bacteria, viruses should be specified more significance since they assist in disease preclusion tactics. Role of Information Education and Communication is extremely significant concerning diarrhoeal and therefore should be prioritized. It can also be carried out at regular intervals to study any variations in the pattern of clinical profile of such patients.

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