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# Original Research

# To evaluate the demographic and clinical profile of diarrheal patients of children age group

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***ABSTRACT:***

**Aim:** The aim of this study to evaluate the demographic and clinical profile of diarrheal patients of children age group. **Methods:** This prospective observational study was carried out in the Department of Pediatrics. The sample size was 120 with 2 groups A and B having 60 patients each. Only those infants and children who fulfilled inclusion criteria such as those aged between 6 months - 5 years, suffering from acute diarrhea and presenting to the Pediatric Department at this set-up for treatment; were included in the study. **Results:** The mean, age for group A patients was 2.47± 1.22 years. A majority of 31 were toddlers. Similarly, for group B patients mean age was 2.63 1.55years. Here also, 25 patients were toddlers. The remaining were infants and pre-school children. Out of 60 patients in group A, 32 (53.33%) males exceeded 28 (46.67%) females, with a male: female (M: F) ratio of 1.25:1. Almost 25 (41.67%) and 20 (33.33%) patients in groups A and B respectively had continued breastfeeding during the study. In the remaining 35 (58.33%) and 40 (66.67%) group A and B patients respectively, breastfeeding was carried out till 1, 1.5, or 2 years. Maximum patients 35 (58.33%) of A and 32 (53.33%) of B group had no dehydration whereas remaining 25 (41.67%) and 28(46.67%) patients had some dehydration respectively. In group A, a maximum of 35 patients had no dehydration and malnutrition while 32 had no dehydration but mild malnutrition. Some dehydration with no malnutrition was noted in 17 patients while 14 and 4 patients with some dehydration had mild and moderate malnutrition respectively. In group B patients with no dehydration; 20, 11 and 1 patients had no, mild and moderate malnutrition respectively. **Conclusion:** 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.

**Keywords:** Children, breast-feeding, dehydration

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## INTRODUCTION

Diarrhoea constitutes one of the major causes of infant mortality and morbidity especially in developing countries. 23% of all deaths among children under five in the South East Asian Region are caused by diarrhoea. India is one of the top 15 countries ranked according to the number of deaths in under fives due to diarrhoea. India alone is responsible for more than half a million diarrheal deaths.[1] Among all child deaths each year, seven in ten of these deaths are due to diarrhoea, acute respiratory infections, malnutrition or combination of these conditions.[2] In India, common illness in children less than 3 years of age are fever (27%) acute respiratory infection (17%), diarrhoea (13%) and malnutrition and these are often in combination.[3]

Diarrhea is defined as, 'passage of three or more loose or liquid stools per day or more frequent passage than is normal for the individual.[4,5] It is one of the biggest public health problems globally. 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.[5] Sometimes, diarrhea my 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.[6]

## MATERIAL AND METHODS

This prospective observational study was carried out in the Department of Pediatrics, after taking the approval of the protocol review committee and institutional ethics committee. The sample size was 120 with 2 groups A and B having 60 patients each.

Only those infants and children who fulfilled inclusion criteria such as those aged between 6 months - 5 years, suffering from acute diarrhea and presenting to the Pediatric Department at this set-up for treatment; were included in the study. Here, patients were alienated into 2 groups according to the probiotic preparation being administered. Accordingly, their clinical and demo- graphic profile was also noted and studied in 2 groups. Various parameters analyzed were age and gender distribution, chief complaints, feeding practices, nutritional status and estimation of dehydration.

**STATISTICAL ANALYSIS**

The data was accumulated and entered in a worksheet computer program and then exported to data SPSS version 23.0. For all tests, confidence level and level of significance were set at 95% and 5% correspondingly.

**RESULTS**

The mean, age for group A patients was 2.47± 1.22 years. A majority of 31 were toddlers. Similarly, for group B patients mean age was 2.63 1.55years. Here also, 25 patients were toddlers. The remaining were infants and pre-school children. Out of 60 patients in group A, 32 (53.33%) males exceeded 28 (46.67%) females, with a male: female (M: F) ratio of 1.25:1. 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. 31 (51.67%) and 35(58.33%) respectively. Few others were given for 4, 5, or 7 months. [Table 2] Almost 25 (41.67%) and 20 (33.33%) patients in groups A and B respectively had continued breastfeeding during the study. In the remaining 35 (58.33%) and 40 (66.67%) group A and B patients respectively, breastfeeding was carried out till 1, 1.5, or 2 years.

In group A, a majority of 35 (58.33%) patients were not given bottle feeding while the remaining 25(41.67%) were given. Almost 38 (63.33%) patients were not given bottle-feeding whereas 22 (36.67%) were given in group B.

Maximum patients 35 (58.33%) of A and 32 (53.33%) of B group had no dehydration whereas remaining 25 (41.67%) and 28(46.67%) patients had some dehydration respectively. [Table 4]

In group A, a maximum of 35 patients had no dehydration and malnutrition while 32 had no dehydration but mild malnutrition. Some dehydration with no malnutrition was noted in 17 patients while 14 and 4 patients with some dehydration had mild and moderate malnutrition respectively as shown in Table 4. In group B patients with no dehydration; 20, 11 and 1 patients had no, mild and moderate malnutrition respectively.

**Table 1: Sex distribution of children's**

| Sex | Group A | | Group B | |
|---|---|---|---|---|
| | Number | Percentage | Number | Percentage |
| Male | 32 | 53.33 | 35 | 58.33 |
| Female | 28 | 46.67 | 25 | 41.67 |
| Total | 60 | 100 | 60 | 100 |

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

| Duration of exclusive breastfeeding (months) | Group A | | Group B | |
|---|---|---|---|---|
| | Number | Percentage | Number | Percentage |
| 04 | 13 | 21.67 | 5 | 8.33 |
| 05 | 13 | 21.67 | 13 | 21.67 |
| 06 | 31 | 51.67 | 35 | 58.33 |
| 07 | 3 | 5 | 7 | 11.67 |

**Table 3: Severity of malnutrition and degree of dehydration in group A**

| Duration of exclusive breastfeeding | Degree of dehydration | | Total no of patients |
|---|---|---|---|
| | No | Some | |
| No | 17 | 7 | 25 |
| Mild | 14 | 8 | 23 |
| Moderate | 4 | 10 | 12 |
| Total | 35 | 25 | 60 |

**Table 4: Severity of malnutrition and degree of dehydration in group B**

| Duration of exclusive breastfeeding (months) | Degree of dehydration | | Total no of patients |
|---|---|---|---|
| | No | Some | |
| No | 20 | 5 | 25 |
| Mild | 11 | 10 | 21 |

| | | | |
|---|---|---|---|
| Moderate | 1 | 13 | 14 |
| Total | 32 | 28 | 60 |

## DISCUSSION

Diarrhoea, acute respiratory tract infections and malnutrition are major problems faced by children under five of developing countries like India. Recurrent infections in childhood significantly hamper the growth and development of preschool children. 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.[7] 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 (2.47± 1.22) and (2.67 1.55) 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,[8] in their research total number of 27 children were assessed. Male: female ratio 1.1:1. Aluntas et al,[9] 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.[10,11] 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.[12]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,[13] 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 (EBF) for an ideal 6 months was noted in the highest no. of study participants in groups A & B. Remaining patients showed EBF for 4, 5, or 7 months. Almost 25 (41.67%) and 20 (33.33%) patients in groups A and B respectively had continued breastfeeding during the study. In the remaining 35 (58.33%) and 40 (66.67%) group A and B patients respectively, breastfeeding was carried out till 1, 1.5, or 2 years. Reifen et al,[14] 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. Termination of enteral feedings reduce the quantity of diarrhea to fewer than 500 ml per day in all 3 patients, 2 of 3 children accomplished standard enlargement velocity in equal height and weight within 6 months; equally, these children were still reliant on TPN at home at ages 8.5 and 6 years, correspondingly. In diarrheal patients of our study, nutritional status was also observed and the results showed that those 20 group A and 20 group B patients who had normal nutritional status had no dehydration as well. Similarly, moderate malnutrition noted in 11 groups A and 12 group B patients had some 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.[12] 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

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.

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