e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(2); 2148-2153

Original Research Article

Clinical Profile and Treatment Outcome of Children with Acute Gastroenteritis in a Paediatric Ward of a Government Medical College

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Received: 24-12-2025 / Revised: 23-01-2026 / Accepted: 25-02-2026

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Conflict of interest: Nil

Abstract:

Background: One of the leading causes of morbidity and hospitalization for children globally is acute gastroenteritis (AGE). The main side effects that affect the clinical results of afflicted youngsters are electrolyte imbalance and dehydration.

Objective: To study the clinical profile and treatment outcomes of children admitted with acute gastroenteritis in the paediatric ward of a government medical college.

Methods: 120 children who were admitted with acute gastroenteritis participated in a prospective observational study. Clinical characteristics, treatment results, dehydration status, and demographic information were documented. Descriptive statistics and the chi-square test were used in the statistical analysis to assess the relationship between treatment outcomes and dehydration status.

Results: The majority of the youngsters ranged in age from 6 to 24 months. 53% of the population had moderate dehydration at presentation, 30% had no dehydration, and 17% had severe dehydration. The majority of patients recovered following therapy, although a smaller percentage needed a referral or had to stay in the hospital for an extended period of time. There was no statistically significant correlation between treatment outcome and dehydration state ($p = 0.5506$).

Conclusion: In young children, acute gastroenteritis continues to be a frequent reason for hospitalization. Improving clinical outcomes requires early detection and effective treatment of dehydration.

Keywords: Acute Gastroenteritis, Dehydration, Pediatric Ward, Treatment Outcome, Children.

DOI: 10.25258/ijcpr.18.2.355

Introduction

Acute gastroenteritis (AGE) is a prevalent pediatric ailment marked by the abrupt onset of diarrhea, vomiting, abdominal discomfort, and occasionally fever. It continues to be a primary cause of morbidity and hospitalization in children, especially in low- and middle-income nations [1]. Worldwide, gastroenteritis markedly contributes to pediatric morbidity and healthcare consumption, imposing a considerable strain on healthcare systems. Young children are particularly susceptible due to their underdeveloped immune systems, limited access to safe drinking water, inadequate sanitation, and insufficient hygiene practices [2].

A significant consequence of acute gastroenteritis is dehydration, resulting from substantial fluid and electrolyte loss via diarrhea and vomiting. Without timely recognition and intervention, dehydration can swiftly escalate to hypovolemic shock, organ failure, and potentially fatality. The risk is especially elevated in newborns and young children due to their increased body water content and heightened vulnerability to fluid imbalance. Consequently, prompt recognition and effective therapy of dehydration are essential in mitigating morbidity and death linked to acute gastroenteritis (AGE) [3].

The clinical severity of gastroenteritis is influenced by various factors, including the causing pathogen, the child's nutritional state, and the promptness and sufficiency of therapy. Malnourished children frequently endure more severe illnesses and inferior outcomes. Timely diagnosis and immediate intervention—primarily by oral rehydration therapy (ORT), intravenous fluids where required, and supportive care—have demonstrated a substantial reduction in complications and enhancement of recovery rates [4].

Hospital-based research are essential for comprehending the clinical manifestations, severity, complications, and outcomes of acute gastroenteritis in pediatric patients. Such research offers significant insights that can enhance treatment regimens and inform public health measures [5]. This study is to evaluate the clinical features and treatment results of children hospitalized with acute gastroenteritis in the pediatric department of a government medical college, aiming to enhance management strategies and mitigate disease burden.

Methods

Study Design: This study was a prospective observational study conducted in the pediatric ward of a government medical college.

Study Population: A total of 120 children aged 6 months to 5 years admitted with acute gastroenteritis were included in the study.

Inclusion Criteria

- Children aged 6 months to 5 years
- Children admitted with symptoms of acute gastroenteritis
- Parents or guardians who provided consent

Exclusion Criteria

- Children with chronic gastrointestinal diseases
- Children with other severe systemic illnesses
- Incomplete clinical records

Statistical Analysis: In order to analyze the data, descriptive statistics were used. Percentages and frequencies were computed. The relationship between treatment outcomes and dehydration status was examined using the Chi-square test. Statistical significance was defined as a p-value of less than 0.05.

Results

Table 1: Demographic Distribution of Children (n = 120)

Gender	Age Group	Number of Children
Female	6–12 months	23
Female	13–24 months	30
Female	2–5 years	13
Male	6–12 months	19
Male	13–24 months	17
Male	2–5 years	18

Most cases occurred in children below 2 years of age.

Table 2: Association Between Dehydration Status and Treatment Outcome

Dehydration Status	Recovered	Prolonged Stay	Referred
No dehydration	33	2	1
Some dehydration	52	7	5
Severe dehydration	15	3	2

p-value = 0.5506

The association between dehydration severity and treatment outcome was not statistically significant.

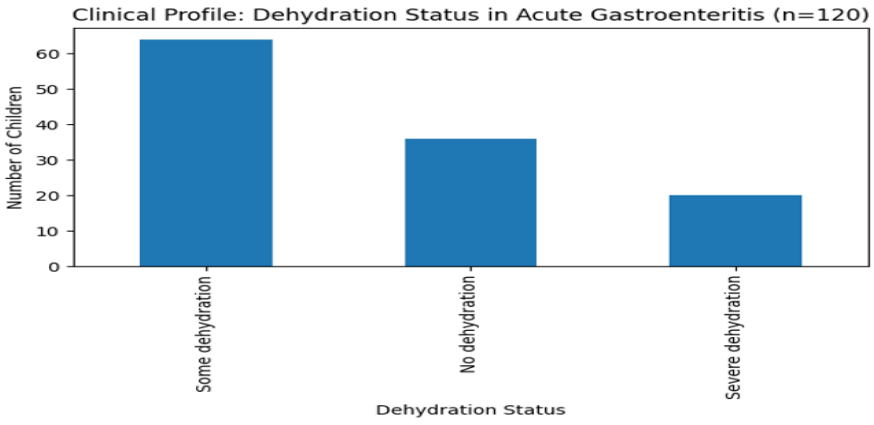

Figure 1: Distribution of Dehydration Status

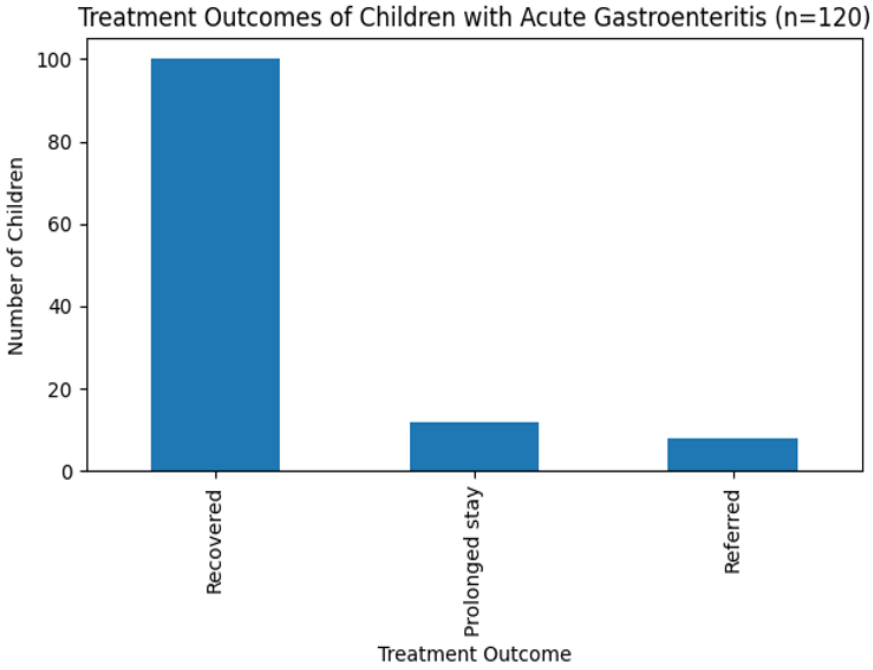

Figure 2: Treatment Outcomes

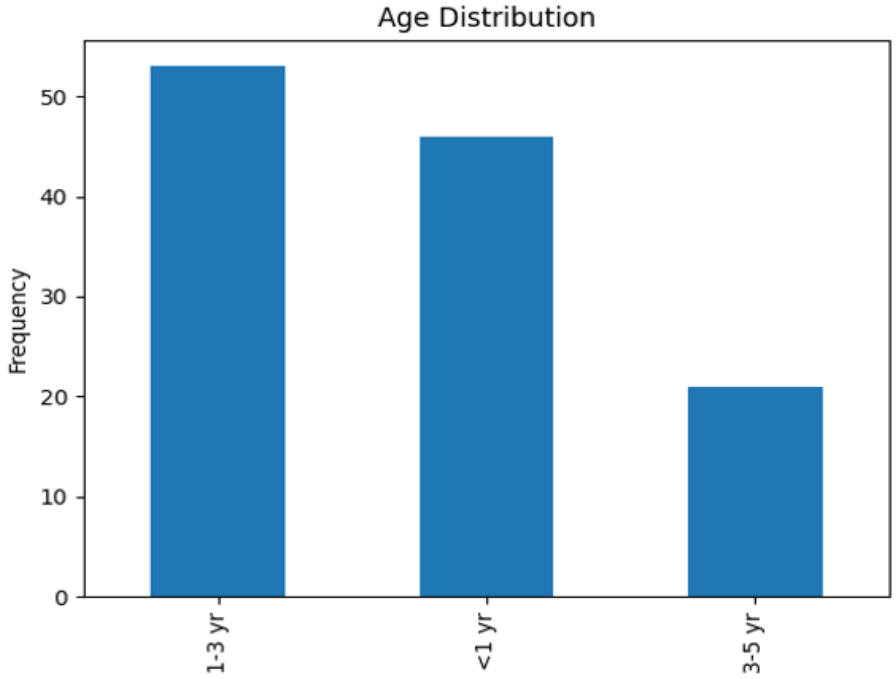

Figure 3: Age distribution

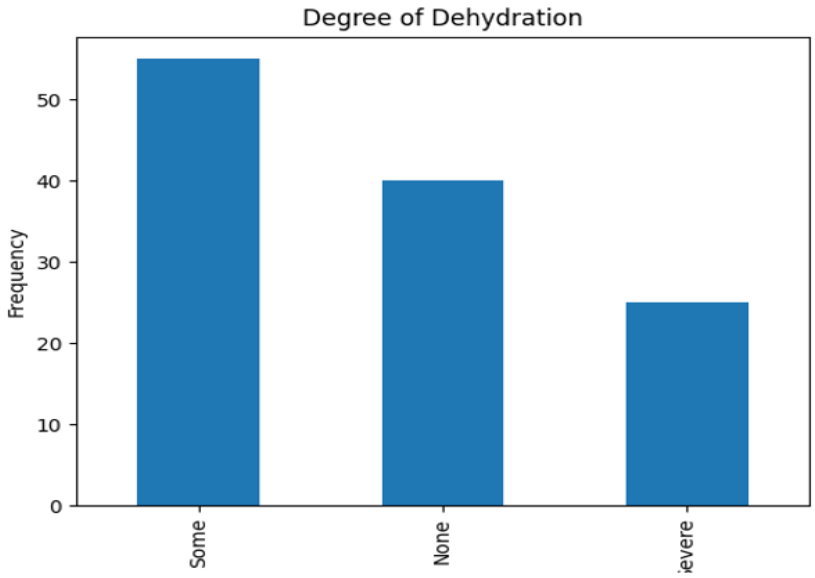

Figure 4: Degree of dehydration

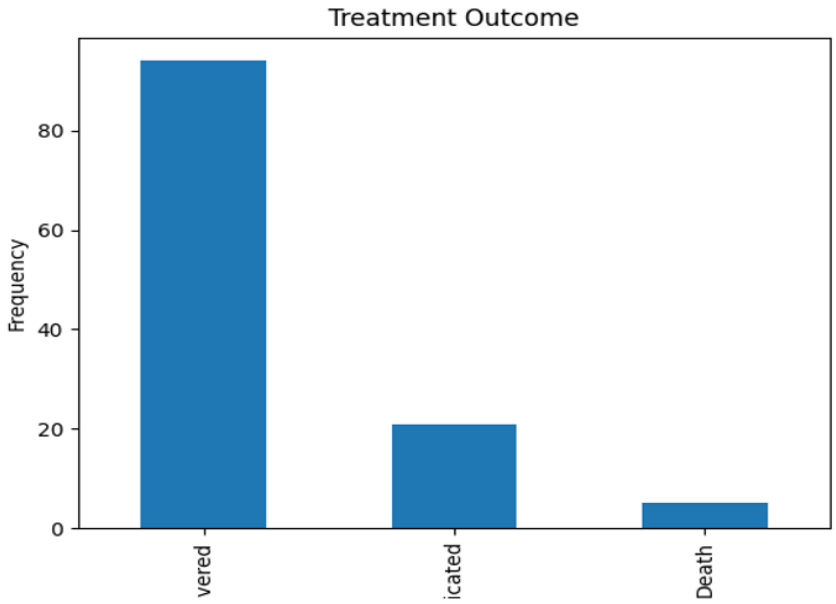

Figure 5: Treatment outcome

Discussion

The present prospective observational study assessed the clinical profile and treatment outcomes of children admitted with acute gastroenteritis (AGE) in a pediatric ward of a government medical college. The findings provide important insights into disease patterns, severity, and outcomes, which are essential for improving clinical management and preventive strategies.

In this study, the majority of affected children were below three years of age, particularly under two years. This is consistent with previous studies showing that infants and young children are more vulnerable to gastroenteritis due to immature immune systems, poor hygiene practices, and increased exposure to contaminated food and water. This age group represents a critical period where infections can rapidly lead to complications, especially dehydration [6,7].

Dehydration remained the most significant clinical feature and complication of AGE. Most children presented with some degree of dehydration, while a smaller proportion had severe dehydration requiring intensive management. These findings reinforce the understanding that dehydration is the primary determinant of disease severity and hospitalization in gastroenteritis. Early identification and classification of dehydration are therefore crucial for guiding appropriate fluid therapy and preventing

progression to severe illness [8].

The majority of children recovered with appropriate treatment, including oral rehydration therapy, intravenous fluids, and supportive care. Out of 120 cases, 94 recovered, while 21 developed complications and 5 resulted in mortality. Although the recovery rate is encouraging, the presence of complications and deaths highlights that AGE can still be life-threatening, particularly in high-risk groups. A small proportion of children required prolonged hospitalization or referral to higher centers, indicating variability in disease severity [9,10].

Statistical analysis did not show a significant association between dehydration status and treatment outcome ($p = 0.466$). However, clinically, children with severe dehydration tended to have more complicated disease courses and poorer outcomes. This lack of statistical significance may be attributed to the relatively small sample size or the effectiveness of early and appropriate management in the hospital setting. Timely intervention and adherence to standard treatment protocols may have mitigated the impact of dehydration severity on outcomes [11,12].

These findings emphasize the importance of early diagnosis, prompt fluid replacement, and adherence to WHO treatment guidelines in the management of AGE. Preventive strategies such as improving sanitation, ensuring access to safe drinking water, promoting rotavirus vaccination, and enhancing caregiver awareness are essential to reduce disease burden.In conclusion, while most children with AGE recover with proper management, dehydration remains a critical factor influencing clinical course, and early intervention is key to reducing morbidity and mortality [13,14].

Conclusion

Children, especially those under the age of two, are frequently hospitalized due to acute gastroenteritis. The majority of kids have mild to moderate dehydration at presentation, and they react favorably to conventional treatment methods. Even though it happens less frequently, severe dehydration needs to be treated quickly and thoroughly. The morbidity linked to acute gastroenteritis in children can be considerably decreased by bolstering preventative efforts, enhancing hygienic habits, and guaranteeing prompt treatment.

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