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Original Research

Assessment of efficacy of two different treatment regimes in treating diarrhoea among Pediatric subjects

Dr. Mohit Sharma[1], Dr. Jyoti Bhartiya[2]

[1]MD Pediatrics PGI, Chandigarh, Medical Officer, Himachal Pradesh
[2]BDS, MHA, Asst. Professor, Sir Sai University, Himachal Pradesh

ABSTRACT:
Background: Acute diarrhoea is defined as the production of three or more watery stools a day for less than 14 days. In non-severe acute diarrhoea of gastroenteritic origin, these stools do not contain visible amounts of blood or mucus. The present study compared two different treatment modalities for pediatric diarrhoea. **Materials & Methods:** 68 children age below 5 years with diarrhoea of both genders were divided randomly into 2 groups of 34 each. Group I patients were prescribed oral Racecadotril three times a day and group II was prescribed probiotics (placebo). Comparison of stool output was done in both groups. Presence of rotavirus in stool was also detected. **Results:** Group I had 18 patients in age group 0-3 years and group II had 17 and age group 3-5 years had 16 in group I and 17 in group II. Stool output in rotavirus positive found to be 142.6 mg in group I and 192.4 mg in group II and in rotavirus negative it was 96.2 mg in group I and 89.5 mg in group II. The difference was significant ($P< 0.05$). **Conclusion:** Oral Racecadotril found to be effective in reducing stool output in children with diarrhoea as compared to probiotics.
Key words: Diarrhoea, Probiotics, Racecadotril

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Corresponding author: Dr. Mohit Sharma, MD Pediatrics PGI, Chandigarh, Medical Officer, Himachal Pradesh

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INTRODUCTION

Acute diarrhoea is defined as the production of three or more watery stools a day for less than 14 days. In nonsevere acute diarrhoea of gastroenteritic origin, these stools do not contain visible amounts of blood or mucus.[1] If this occurs, then the appropriate diagnosis is dysentery, which requires specific management. The World Health Organization (WHO) emphasises the importance of parental insight in deciding whether children have diarrhoea or not, and in the first few months of life, a conspicuous change in stool consistency rather than stool frequency must be taken into account.[2]

Acute gastroenteritis (AGE) is a major cause of child mortality and morbidity globally, with 760,000 deaths per year in infants and children under 5 years of age, especially in low-income countries (LIC).[3] Of all child deaths from diarrhea, 78% occur in Africa and South-East Asia. The United Nations (UN) developed the Millennium Development Goal 4 (MDG 4) with the aim of reducing mortality of children below 5 years by two thirds by 2015 but many countries, especially in south Asia and sub-Saharan Africa, are not on track to meet this target.[4] Therefore, the Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea has recently outlined necessary actions for the elimination of preventable child deaths due to pneumonia and diarrhea by 2025 as part of the MDG5.Rotavirus infection accounts from 20% to 60% of all diarrhoeal episodes in developing and developed countries and is the major cause of acute diarrhoea in young children under five years of age.[5] The present study compared two different treatment modalities for pediatric diarrhea.

MATERIALS & METHODS

The present study comprised of 68 children age below 5 years with history of diarrhea of both genders. Parental consent was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Patients were divided randomly into 2 groups of 34 each. Group I patients were prescribed oral Racecadotril three times a day and group II was prescribed probiotics (placebo). Comparison of stool output was done in both groups. Presence of rotavirus in stool was also detected. P value less than 0.05 was considered significant. P value less than 0.05 was considered significant.

Table I: Distribution of patients

Age group (Years)	Group I (Racecadotril)	Group II (Probiotic)
0-3	18	17
3-5	16	17

Table I, graph I shows that group I had 18 patients in age group 0-3 years and group II had 17 and age group 3-5 years had 16 in group I and 17 in group II.

Graph I: Distribution of patients

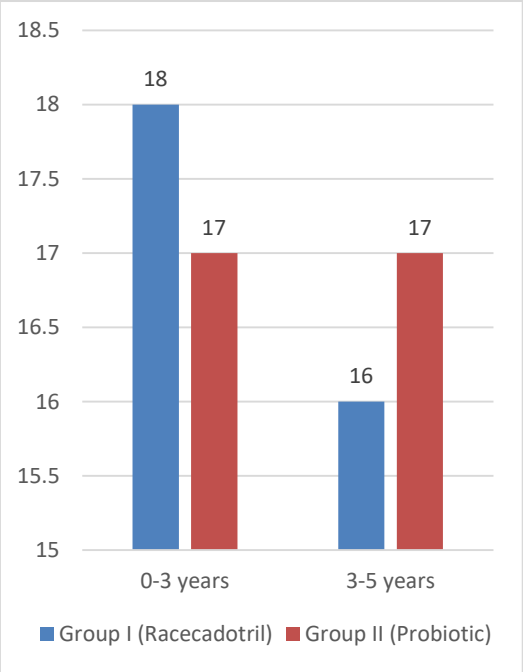
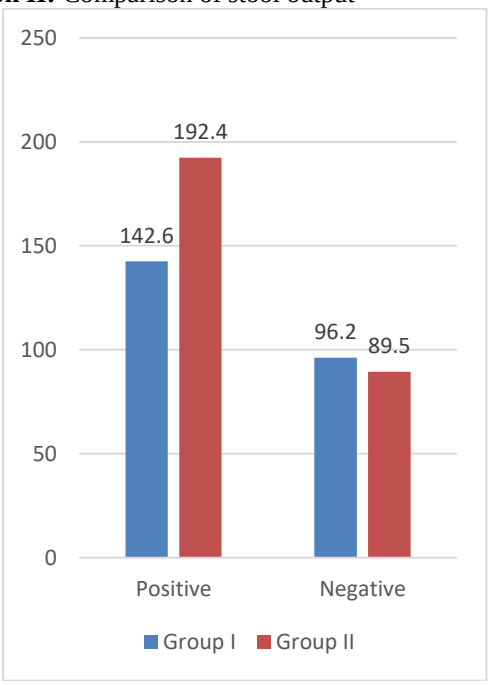


Table II: Comparison of stool output

Rotavirus	Group I	Group II	P value
Positive	142.6	192.4	0.01
Negative	96.2	89.5	0.05

Table II, graph II shows that stool output in rotavirus positive found to be 142.6 mg in group I and 192.4 mg in group II and in rotavirus negative it was 96.2 mg in group I and 89.5 mg in group II. The difference was significant (P< 0.05).

Graph II: Comparison of stool output



DISCUSSION

Acute diarrhea remains one of the most important health issues worldwide, with high morbidity and mortality rates, accounting for more than two million deaths annually. Acute diarrhea is the commonest infectious disease in developing countries, mostly affecting children younger than five years old.[6] Whereas most cases of acute diarrhea are caused by virus, such as rotavirus and enteric adenovirus, and tend to present in a mild and self-limiting fashion, with the optimal treatment consisting solely of oral rehydration and nutritional support, practitioners in ambulatories or emergency rooms, especially in developing countries, are frequently faced with life-threatening presentations, characterized by signs of severe dehydration, toxemia, marked leucocytosis with high percentages of immature forms, high-grade fever, severe welfare depression, tenesmus, gross fecal blood loss and dissemination of infection.[7] Supportive anti-dehydration therapy, associated with adequate nutritional support, is the cornerstone of therapy, regardless of the etiology and the severity of the process, and its prompt and early adoption is associated with a favorable outcome. Moreover, dehydration can simulate toxemia and mislead the clinical assessment of severity. As a consequence, volumetric expansion, electrolyte corrections and nutritional support should always be performed before any other therapeutic measure.[8]The

present study compared two different treatment modalities for pediatric diarrhea.

In present study, group I had 18 patients in age group 0-3 years and group II had 17 and age group 3-5 years had 16 in group I and 17 in group II. Acute diarrhoea is a leading cause of child mortality in developing countries. Principal pathogens include Escherichia coli, rotaviruses, and noroviruses. 90% of diarrhoeal deaths are attributable to inadequate sanitation. Acute diarrhoea is the second leading cause of overall childhood mortality and accounts for 18% of deaths among children under five. In 2004 an estimated 1.5 million children died from diarrhoea, with 80% of deaths occurring before the age of two. Treatment goals are to prevent dehydration and nutritional damage and to reduce duration and severity of diarrhoeal episodes. The recommended therapeutic regimen is to provide oral rehydration solutions (ORS) and to continue feeding.[9] Although ORS effectively mitigates dehydration, it has no effect on the duration, severity, or frequency of diarrhoeal episodes. Adjuvant therapy with micronutrients, probiotics, or antidiarrhoeal agents may thus be useful. The WHO recommends the use of zinc tablets in association with ORS. The ESPGHAN/ESPID treatment guidelines consider the use of racecadotril, diosmectite, or probiotics as possible adjunctive therapy to ORS. Only racecadotril and diosmectite reduce stool output, but no treatment has yet been shown to reduce hospitalisation rate or mortality. Appropriate management with validated treatments may help reduce the health and economic burden of acute diarrhoea in children worldwide.[10]

We found that stool output in rotavirus positive found to be 142.6 mg in group I and 192.4 mg in group II and in rotavirus negative it was 96.2 mg in group I and 89.5 mg in group II. While stool cultures and antimicrobial testing of the isolates are the best way to select the most adequate antimicrobial regimen, the results are only available after 72 hours or more. In some instances, it is possible to wait for the result; often cases improve substantially during this interval and the use of antibiotics is no longer required when the results become available, even if enteropathogenic bacteria are identified. In severe cases, however, it is advisable to start antimicrobials empirically as soon as stools are collected for culture.[11]Since the use of antibiotics is associated with higher response rates if it is adopted early in the course of the disease, one is often not able to wait for the results of the stool culture before initiating antimicrobial therapy. Therefore, the decision to start antimicrobial therapy for acute diarrhea must be made solely on clinical grounds, and the choice of the antimicrobial agent has to be made empirically; it should consist of the narrowest antimicrobial spectrum possible that covers the most likely pathogens in each case.[12] As soon as the results of the stool culture become available, the therapy may be altered according to the antimicrobial susceptibility pattern, favoring the use of narrower-spectrum, cheaper and/or safer drugs, if antimicrobial therapy remains necessary.

CONCLUSION

Authors found that oral Racecadotril found to be effective in reducing stool output in children with diarrhoea as compared to probiotics.

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