



## Original Article

# Impact of an ORT Corner in a Teaching Hospital

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### Abstract

An ORT (Oral Rehydration Therapy) Corner was set up in Rajshahi Medical College in July 1990. 4267 Patients aged between 0-12 years who attended the ORT corner of the diarrhoeal training unit in the year of 2003 were studied to find out the impact of this unit in the management of diarrhoeal diseases in children and its effect on diarrhoeal admission in the hospital. 53.56% (2285) of them were male and 46.21 % ( 1972) were female. Only 1.54% (66) of the patient who attended the ORT Corner needed hospital admission. 78.72% Patients were under 5 year of age and 90.57% (3865) patients had no dehydration (group-A) and they were sent home with ORS (Oral Rehydration Solution) and necessary advice. 8.3% (355) patients had some dehydration (Group –B) and they were treated at the ORT corner with ORS for 2-6 hours and sent home after initial rehydration.

But 19 (0.44%) patients had needed hospital admission later due to failure of ORS treatment. 47 (1.10%) Patient had severe dehydration (Group-C), who had persistent diarrhoea and immediately admitted in Paediatric unit and given necessary treatment.

Total diarrhoeal admission in indoor was 74 in 2002 and 66 in 2003 and a significant reduction in admission was observed during the study period from that of the previous year. ( $p < 0.01$ ).

It was concluded that the ORT corner was very effective simple and safe in the management of diarrhoea in children and reduced the number of diarrhoeal admissions in the hospital.

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### Introduction

Diarrhoea affects nearly 500 million children every year in the world and is a major cause of malnutrition in less than five age group. Diarrhoea has been recognized as one of the main killers of children in developing countries. The extent of diarrhoeal diseases in developing countries like Bangladesh and its role in childhood morbidity and mortality even in the developed countries is also well recognised<sup>1</sup> Since its formal scientific discovery in 1960, Oral Rehydration Solution (ORS) made of glucose, salt and water has proved

to be a miraculously simple, low cost and life saving treatment for acute diarrhoea<sup>2</sup>. It was then standardized and put to global use by WHO and UNICEF and has saved the lives of millions of children with life threatening diarrhoea. After that, particularly from 1975, much has happened through a number of on going researches to change the prospect of this inexpensive and highly effective treatment. Most important of the advances has been the demonstration that cereals can be an important basis of ORT which in addition to replacement of fluid, reduces stool

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volume<sup>3,4,5</sup>The ORS solution can alone rehydrate 90% of patients with dehydration. It can reduce the hospital admission rate for treatment of diarrhoea by at least 50% and also reduce diarrhoeal mortality and weight loss when given with appropriate feeding. Although diarrhoeal disease control programme has been widely perceived to be cost effective, there are only a few documented evidences to support this<sup>6</sup>.

This study was carried out to find out the impact of ORT corner (Oral Rehydration Therapy Unit) in the management of diarrhoeal diseases in children and its effect on diarrhoeal admission in the hospital.

### **Materials and Methods**

A total of 4267 patients under 12 years of age who attended to ORT corner of the diarrhoeal training unit of the RMCH (Rajshahi Medical College Hospital) with diarrhoeal diseases from January - December 2003 were studied retrospectively.

#### **ORT corner**

As a continuation of the CDD (Control of Diarrhoeal Diseases) program, Diarrhoeal Training Unit (DTU) was set up in Rajshahi Medical College Hospital in July, 1990. ORT corner is the essential part of this unit. It is attached to the children out patient department (OPD) and works on and out patient basis i.e. during the office hours (8 AM-2.30 PM) of working days from Saturday-Thursday. It provides case management for the children presenting with diarrhoea, this unit is under direct supervision of the department of Paediatrics.

#### **Clinical information:**

Attendants of the patients were interviewed about the symptoms e.g. frequency and duration of diarrhoea, presence of vomiting, fever blood in the stool, thirst and frequency of urine passed during the past 6 hours. Every patient was then examined to note the weight, vital signs, signs and degree of dehydration, evidence of severe PEM, or any systemic illness. Dehydration was graded as no, some and severe according to the clinical Signs<sup>7</sup>. On the basis of the degree of dehydration the patients were divided into three groups as follows.

- 1) Group-A: patients who had no dehydration.
- 2) Group-B: patients having some (mild to moderate) dehydration.
- 3) Group-C : patients having severe dehydration with or without blood in the stool, fever, persistent diarrhoea (More then 2 weeks) or severe PEM (body weight less then 60% of NCHS standard)

#### **Plan of management**

**Group-A:** The patients were sent home with ORS packet and advised to give ORS after each stool or vomit, to give more fluid than usual, to continue normal feeding and to come back to the hospital if the child did not improve (i.e. developed signs of dehydration, or fever or blood in the stool).

**Group-B:** The patients were treated at the ORT corner with standard WHO ORS fro 2 to 6 hours. They were re-assessed at 2 hours, 4 hours and 6 hours after starting of ORS. Those in whom this plan failed (due to continuous purging or vomiting) to rehydrate or maintain hydration was admitted in the hospital for further management.

**Group-C:** The patients were immediately admitted in the children ward. They were treated with intravenous fluid and the associated complications, if any, were treated accordingly with appropriate measures.

The number of diarrhoeal admissions of the study period was compared with the previous diarrhoeal admissions of 2002. The diarrhoeal children irrespective of their degree of dehydration were admitted in the hospital as decided by attending doctor.

#### **Result**

Out of 4267 diarrhoeal children 53.55% (2285) were male and 46.21% (1972) were female. As shown in Table –I the majority of the patients 78.72% were under 5 years of age. The majority or the patients 90.57% had no dehydration (Group A) and they were managed at home. 355(8.3%) Patients had some dehydration (Group-B) Most of them 336(7.8%) were successfully rehydrated at the ORT corner and them sent home. Only 0.44% (19) of this group failed ORT and needed hospital

admission later for intravenous fluid therapy. Group C included 47 patients and they were admitted in the ward from the ORT corner as

persistent diarrhoea which constituted 1.1% of the total diarrhoeal OPD attendance.

**Table-I:** Distribution of the patient's age and sex:

Age in year	Male	Female	Total	%
0-5	1858	1501	3359	78.72
5-above	437	471	908	21.28%
Total	2285 (53.56%)	1972 (46.21%)	4267	100%

**Table-II:** Distribution of the patient according to group and management

Groups	Total Patients	No. of Patient treated at home	No. of Patient treated at the ORT corner	No of hospital admission
A	3865 (90.57%)	3912		
B	355 (8.3%)		336	19
C	47 (1.10%)			47
Total	4267 (100%)	3912(91.7%)	336(7.8%)	66 (1.54%)

**Table-III:** Complication among the admitted patient

Complication	No of Patients	%
Bloody diarrhoea	348	8.5%
Persistent diarrhoea	47	1.1%

**Table-IV:** Hospital admissions of diarrhoea cases in 2002 and 2003

Year	Study period		P - value
	No of OPD attendance	No of admission	
2002	4333	74	<0.01
2003	4267	66	

The incidence of associated complications among the admitted patients is shown in table III. The number of diarrhoeal admissions was significantly ( $P<0.01$ ) less during the study period than that of the previous year (Table-IV). But of a total of 66 patients were admitted from the ORT corner. (Table II)

## Discussion

Diarrhoea remains a serious threat to life .On the other hand malnutrition is closely associated with diarrhoea in endemic areas and these two in combination take an extraordinary toll each year. The close interaction of scientists involved in basic biological research and those dealing with patient care in this field have led to rapid progress in treatment<sup>9</sup>. Sophisticated technology and

expensive drug are of little or no use. The value of oral rehydration with ORS as a means of practical and effective therapy in treating diarrhoea is well established.<sup>10</sup>

The result of our study indicated that establishing and ORT corner in a major hospital was really useful. Only 1.5% (66) of the diarrhoeal children who were attended the OPD needed hospital admission 7.8% (356) were treated at the ORT corner and 90.75 % (3865) were advised for home management for diarrhoeal diseases. Other associated conditions among the admitted patient were bloody diarrhoea (8.5%) and persistent diarrhoea (1.10%). All this were known consequences of poor socio economic condition of a developing country where malnutrition, diarrhoea and infections still form a vicious circle.

In a major hospital in Lesotho (in 1986), a survey carried out after establishment of ORT unit showed a 38% reduction of the treatment cost of the hospital per child over a two years period <sup>6</sup> .This study correlated well with our study and was a substantial net gain to the hospital and hence under scored the cost effectiveness of establishing ORT unit.

In our study the total diarrhoeal admissions decreased from 74 in 2002 and 66 in 2003 and a significant reduction in admission was observed during the study period ( $p<0.01$ )

## Conclusion

It is concluded that ORT corner is simple, safe and very effective in the management of diarrhoeal diseases on an out patient basis. It has significantly reduced the number of diarrhoeal admissions in the hospital.

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