

Evaluating The Effective Use Of Oral Rehydration Therapy

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ABSTRACT

This study demonstrates that throughout one year 2370 of acute diarrhoeal dehydration were referred to oral re-hydration therapy (ORT). Out of which 89% were treated and discharged in a good condition, while 11% were referred to the wards for intravenous fluid therapy.

Most of these patients (75%) were under one year old, while the rest (25%) were 1-5 years of age. The sex incidence demonstrated that 54.3% were male patients, while 45.7% were female patients.

We conclude that ORT is simple, effective, and inexpensive method for treating diarrhoeal dehydration. Furthermore, it frees hospital ward-staff for other duties, which eventually will improve the management of other diseases.

ملخص

العلاج بواسطة الإرواء الفموي

أوضحت هذه الدراسة بأنه وخلال سنة واحدة تم احالة (2370) طفل مريض مصاب بالجفاف الناتج من الاسهال الى وحدة الأرواء الفموي.
(89%) منهم تم علاجهم واخراجهم من المستشفى بحالة جيدة بينما تم احالة (11%) منهم الى ردهات المستشفى لغرض العلاج بالسوائل عن طريق الوريد.
معظم المرضى (75%) كانت اعمارهم اقل من سنة واحدة بينما الآخرين (25%) كانت اعمارهم تتراوح ما بين (1-5) سنوات.
وكذلك أوضحت الدراسة بأن نسبة الإصابة للذكور كانت (45,7%) ونسبة الاصابة عند الإناث كانت (54,3%).

نستخلص من هذه الدراسة بأن العلاج بواسطة الأرواء الفموي هو بسيط وفعال وغير مكلف، وكذلك يخفف نقل عمل الكادر الطبي وخاصة كادر التمريض لكي يتفرغوا لمهام أخرى في ردهات المستشفى والتي بالتالي تحسن من علاج ومتابعة المرضى داخل المستشفى.

Introduction

Diarrhoea, constitutes one of the major pediatric diseases. It is considered to be the main cause of mortality and morbidity during childhood all over the world, especially in the developing countries. An estimated 5-11 million children under 5 years, died as a consequence of diarrhoeal disease mainly in Asia, Africa and Latin America. In India the mortality due to diarrhoea is around 1.5 million per year. An estimated 60-70% of diarrhoeal deaths are caused by dehydration (1, 2, 3, 4).

The physiological observation that sodium and water transport is enhanced by concurrent glucose transport in the small intestine, and that this cotransport mechanism is intact during most acute enteric infections (3, 5, 6, 7, 8), is considered to be potentially the most important medical advance in this century.

Various investigators have confirmed that the ORT could be used effectively in the management of diarrhoeal dehydration in children and neonates. Furthermore, they found that it reduced significantly the mortality rate and lessened diarrhoea-associated malnutrition (9, 10, 11, 12). Therefore, the World Health Organization (WHO) promoted the worldwide use of an oral re-hydration solution (WHO-ORS), and published guidelines concerning its use (13).

The ORT units have been established in some Iraqi hospitals since 1986 (14). This preliminary study was carried out to evaluate the clinical significance of the ORT-unit in Mosul pediatric hospital as a first line of treating diarrhoeal dehydration.

SUBJECTS AND METHODS:

A total of 2370 infants and preschool children suffering from acute diarrhoeal dehydration were referred to the ORT-unit of Al-Khansa hospital and Ibm Al-Ather pediatric hospitals. They were treated by WHO-ORS (13).

Most of these patients suffered from mild to moderate dehydration, as very severely dehydrated patients were referred directly to the wards for intravenous fluid therapy.

The correct method of preparing the ORS in standardized container and its mode of administration to patients were demonstrated to the mothers during preparation of the solution and management of the children. The importance of breast versus bottle-feeding was also emphasized.

No antibiotic was given to these patients during the ORS treatment. Statistical analysis was presented as a percentage of the total number. The percentages are very popular in the presentation of statistics because, being usually reduced to some common denominator, their numerators are readily compared (15).

RESULTS:

This study demonstrates that paediatric patients referred to the ORT-unit during one year were treated by ORT-solution (ORS). In 89% of the patients, the treatment was sufficient and they were discharged in good condition. It also demonstrates that in only 11% of the patients the ORS treatment was insufficient and they referred to the ward for intravenous fluid therapy. Figure (1)

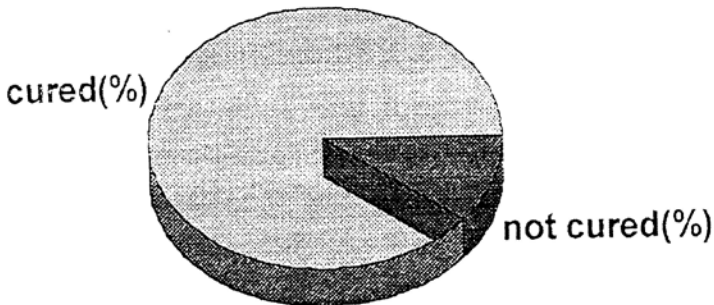


Figure (1): The percentage of Paediatric patients (with acute diarrhoeal dehydration) treated with oral rehydration therapy

The age incidence in which 75% of the patients were under one year of age, which was higher than the 25% of the patients aged between 1-5 years. Figure (2)

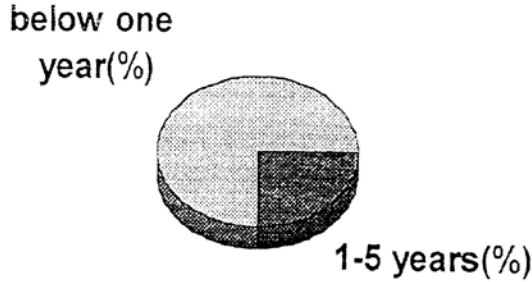


Figure (2): The age incidence of paediatric patients referred to the ORT-unit.

Also it demonstrates that 54.3% of the cases occurred in male patients, which was higher than the 45.7% occurred in the female patients. Figure (3)



Figure (3): The sex incidence of referred to the ORT-unit

Further more, it demonstrates the monthly distribution of the patients referred to the ORT-unit in which the highest incidence of acute diarrhoeal dehydration occurred in May (18 %), while the lowest incidence occurred in January (2.7%). Figure (4)

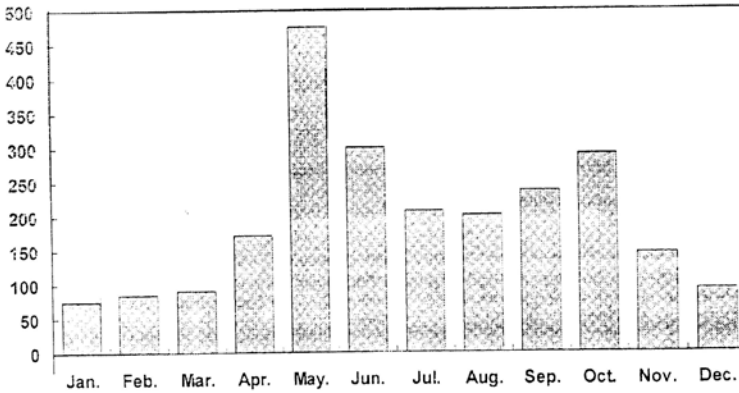


Figure (4): The monthly of paediatric patients (with acute dianhocal dehydration) to the ORT-uoit

DISCUSSION:

The concept of replacing fluid loss began to receive attention in the 1960s, when a major breakthrough was made with the successful use of an oral rehydration solution (ORS) containing glucose and essential salts to treat cholera cases with very severe diarrhoea (16, 17, 18). The scientific evidence to explain the success of ORT included the demonstration that the presence of the sugar in the ORS made it easier for the intestine to absorb water and sodium, a process that remained unimpaired during acute diarrhoea (3, 5, 6, 7).

The ORT-unit has been adopted in some Iraqi pediatric hospitals since 1986 (14). The outcome of this study has demonstrated that 89% of the pediatric patients with acute diarrhoea can be treated in the ORT-unit. The remainder 11% most of whom have severe dehydration or are unable to take fluid orally referred to the ward for intravenous fluid therapy to replace the

fluid deficit. Such a result agrees with the outcome of the ORT-units in other countries, which demonstrated that about 90-95% of the cases has improved using the ORS (2, 13, 19). These data enabled us to consider that the ORT should be the first line of treating acute diarrhoea in our community.

The results demonstrate that the highest incidence of acute diarrhoea occurred in May in comparison to the other months of the year, while the highest incidence of acute diarrhoea in other countries such as Philippines occurred in March (20). This could be due to a change of weather, food or the socio-cultural habits or combination of them.

Our results also demonstrate that 75% of these patients were below one year of age. A result which could indicate that the adoption of such a therapy will improve the mortality and morbidity of children under one year of age has been also investigated by previous workers (7, 10, 11, 12, 21).

Furthermore, these results demonstrate a sex difference, in which male patients were higher than females. A result, which was consistent with the result of a previous investigator, concerning diarrhoeal incidence, carried out in other cities of the Middle East (22). Such small sex differences can either reflect the higher incidence of male birth rate (23) or may be due to more care given for boys than girls in our community.

In conclusion, treating such a big number of patients using ORT would substantially reduce the cost of treating diarrhoeal cases due to a large reduction in the intravenous therapy and general hospital cost.

Furthermore, such a reduction in admission will free hospital and health center-staffs for other duties, which eventually will improve the management of other cases admitted to the hospital ward.

Oral re-hydration therapy units could be established in almost every health center for teaching parents and treating children with diarrhoea, as it is proved to be inexpensive, effective, life saving method and needs only a room with simple equipments.

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