Oral Rehydration Therapy in Pakistan

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Syed Masroor-ul-Hassan Rizvi (P.A.E.C. Pinstech, Islamabad.)
Asif Ali Qureshi, Khalid Noomani (National Institute of Health, Islarnabad.)

Abstract

Oral Rehydration Salt (ORS) therapy is a definite progress in controlling mortality due to diarrhoeal diseases in Pakistan. UNICEF in collaboration with National Institute of Health, has made good efforts in providing NIMKOL, the Pakistani Oral cost (JPMA: 34: 105, 1984).

Introduction

One of the most important advances in the field of diarrhoeal diseases research has been the establishment of the fact, that dehydration in all age groups due to diarrhoea can be treated orally with a simple glucose electrolyte solution.

The scientific basis came into light in 1960 when studies in vitro, and in-vivo, showed that glucose could mediate sodium transport across the small intestinal mucosa. Evidence that glucose absorption and glucose mediated sodium, chloride and water absorption remained largely intact during diarrhoea, was first highlighted in cholera patients in 1964 (Phillips, 1964).

Pakistan has an estimated population of 84.0 million with a birth rate of 42.6 per 1000. Environmental lack of knowledge about preventive measures are the main source of the high mortality rate in the country. After eradication of small pox and efforts to control malaria, diarr. hoeal diseases are one of the most important factor causing mortality largely in the child population. The mortality rate is 105 per 1000 live births and proportionate mortality from diarrhoeal diseases in the under five years of age is 40.5%. In most of the cases, death is caused by dehydration. However, an immediate impact on reducing mortality rate due to dehydration is made by treating with O.R.S.

Method of Treatment

The big cities of Pakistan were surveyed from 1980 to 1982 and it was found that Oral Rehydration Salt to hospital and clinics at a negligible Fluid treatment was being given by the doctors and health workers at the delivery points, hospitals and health centres. The health workers demonstrated to the patient (or the patient's mother in the case of children) the preparation of the oral fluid from the packet using a suitable container. Treatment then continued at the patient's home.

Composition of Oral Rehydration Solution (ORS).

Ingredients	Grams/Litre of Water.
Nacl	3.5
$NaHCO_3$	2.5
KCL	1.5
$C_6H_{12}0_6$	20.0
Composition	**Mmol/Litre of Water.**
Na^+	90
K^+	20
Cl^-	80
HCO_3	30
$C_6H_{12}0_6$	111

The detailed steps for preparation of the salt solution were demonstrated to the patients or their attendants: Water was boiled and allowed to cool. The cup or container and a small spoon was washed

with some of this boiled water and allowed to dry. The cup was then filled with the cooled boiled water almost to the brim and the contents of the ORS packet were poured into the cup. The mixture was stirred till all the powder was dissolved. It was clarified that water must never be added to the powder as it would not dissolve.
NIMKOL (ORS) fUlfils the physiological criteria for intestinal absorption of water and electrolytes, and corresponds with the WHO recommended formula for the need of optimum correction of the fluid and electrolyte deficit, which occurs in infants, older children and adults during dehydration due to diarrhoea (including cholera).

Conclusions

Hospital studies initially suggested that children whose dehydration, acidosis and potassium depletion were soon corrected with oral rehydration therapy, resumed feeding earlier and regained the weight lost rapidly . A subsequent field trial conducted in the Philippines showed that infants who received oral rehydration therapy together with proper dietary management (using the available food) during and after the diarrhoea had a better appetite and gained significantly more weight than controls oxer a 7 months period of observation (WHO Bull., 1977). Similar results were obtained in Egypt, Iran, Liberia and Turkey. The precise mechanism of the weight gain is not clear.
Initially UNICEF was the main source of WHO recommended ORS in Pakistan. During the year 1979, 29,539 packets were distributed throughout the country. In 1980 the amount increased to 140,978 packets. The increasing demand of ORS could be attributed to the increasing health facilities, teaching materials and methodology in the country which helped the people to accept the effectiveness of Oral Rehydration Therapy.
There is now a need of a programme to ensure the continued availability of ORS and training and education of health workers and families so that diarrhoeal diseases related mortality and malnutrition can be prevented in Pakistan.
UNICEF in collaboration with National Institute of Health, Islamabad has taken the responsibilities of production and distribution of WHO recommended Oral Rehydration Salts (NIMKOL), the name given to ORS, as it is basically a mixture of salts (NIMAK-URDU). Production was started in NIH in 1981 and 1.2 million packets were supplied. The rapidly increasing demands of ORS due to the acceptance of the therapy by doctors and the common man brought about an expanded production programme at NIH.
This will provide the required quantity of ORS by producing 10.0 million packets till, 1985.
Although oral rehydration will combat the dehydration caused by diarrhoea! diseases, the etiological factors will have to be treated. In some cases the causative agent is short lived, as cholera vibrio, where drug therapy is not required. But in general some therapy of the underlying diarrhoeal disease would seem advisable (8), (Working Paper on ORS, Bangkok, 1979).
Adoption of Oral Rehydration Therapy in Pakistani,, hospitals has lead to a marked reduction of intravenous infusions and costs. Easy availability of Oral Rehydration therapy in rural areas can dramatically reduce the fatality rate (due to acute diarrhoeas), and the number of visits to treatment centres. It is clear that ORS is an oriently suitable tool for application at the primary health care.

References

1. Phillips, R.D. (1964) Water and electrolyte losses in cholera, Feb. Proc., 23 705;
2. International Study Group, 41977) A positive effect on the nutrition of Philippine children of an oral glucose electrolyte solution given at home for the treatment of diarrhoea. Report of a field trial by an international study group. Bull. WHO., 55 87.

3. Working Paper No. 1 of consultation on Nation Production and distribution of ORS. Bangkok, 23-26 January, 1979.

The primary objective is to determine if the administration of a single dose of oral ondansetron (an anti-vomiting medication), compared to placebo, results in a reduction in intravenous (IV) rehydration therapy in children presenting for emergency department care with some dehydration, vomiting and diarrhea in Pakistan.Â Based on the results, it will be discovered if oral ondansetron plays a role in reducing the need for intravenous rehydration in children with gastroenteritis in Pakistan. As ondansetron is now available in generic formulations, and is relatively inexpensive, it is anticipated that if this study is positive, ondansetron will be considered for inclusion in the WHO - gastroenteritis care package. Children with diarrhea who received oral rehydration and continued feeding refer to the percentage of children under age five with diarrhea in the two weeks prior to the survey who received either oral rehydration therapy or increased fluids, with continued feeding.Â Pakistan United States United Kingdom Euro area China Afghanistan Albania Algeria Andorra Angola Antigua and Barbuda Argentina Armenia Aruba Australia Austria Azerbaijan Bahamas Bahrain Bangladesh Barbados Belarus Belgium Belize Benin Bermuda Bhutan Bolivia Bosnia Botswana Brazil Brunei Bulgaria Burkina Faso Burundi Cambodia Cameroon Canada Cape Verde Cayman Islands Central African Republic Chad Channel Islands Chile China Colombia Comoros Congo Costa Rica Cote d. Oral rehydration therapy (ORT) is a type of fluid replacement used to prevent and treat dehydration, especially that due to diarrhea. It involves drinking water with modest amounts of sugar and salts, specifically sodium and potassium. Oral rehydration therapy can also be given by a nasogastric tube. Therapy should routinely include the use of zinc supplements. Use of oral rehydration therapy has been estimated to decrease the risk of death from diarrhea by up to 93%.