Original Article

# Knowledge, Attitude and Practices of the Mothers and Doctors Regarding Feeding, Oral Rehydration Solution (ORS) and Use of Drugs in Children During Acute Diarrhea

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**Introduction:** Since it's a common observation that most cases of acute diarrhea are not managed according to WHO guidelines. Irrational use of drugs is a major problem of present day medical practice, as well as use of ORS is underestimated. The mothers /grand mothers reduce or stop feeding(except for breast feeding) do not know the importance of fluid therapy or ORS and cannot prepare ORS properly. This study was designed to know the exact situation.

**Objective:** To assess the knowledge, attitude and practices of the mothers and doctors in acute diarrhea in children ≤ 5 years of age about feeding, preparation and use of oral rehydration solution (ORS) and drugs.

**Design:** Cross Sectional.

**Place and duration:** ORT corner of Pediatric OPD at Sir Ganga Ram Hospital, Lahore from May, 2007 to September, 2007.

**Patients and Methods:** Nine hundred and fifty children under 5 years of age having acute diarrhea were included in the study. Data was collected on a specified questionnaire by a doctor who entered the required information after interviewing the mothers/grandmothers accompanying the children. The information was collected regarding use of ORS and who prescribed, or they already had knowledge that it should be given, how to prepare ORS, whether or not continued feeding and used drugs during current acute diarrhea episode. The data was entered and interpreted as frequency distribution.

**Results:** ORS was used (given) by only 464 (49.67%) of the mothers, out of which 125(27%) used it by their own knowledge (through newspaper, television, told by neighbours or previous consultation by the doctor). 400 (42.82%) mothers knew about preparation of ORS. Feeding was continued by 697 (74.62%) of the mothers and 400 (42.82%) used drugs, prescribed by general practitioners, medical officers of government hospitals, few by paediatrician and self during acute diarrhea.

**Conclusion:** It is concluded that ORS was given by 49.67% of the mothers, 42.8% could prepare it properly, feeding was stopped/reduced/diluted by 25% of the mothers. Drugs were used in 42.82% of the cases. Diarrhea control programme needs to be reinforced to improve existing practices regarding management of acute diarrhea in children ≤ 5 years of age. Inappropriate use of drugs during diarrhea should be discouraged.

**Key Words:** ORS(oral rehydration solution), acute diarrhea, ORT( oral rehydration therapy).

## INTRODUCTION

Diarrhoeal disorders in childhood account for a large proportion (18%) of childhood deaths, with an estimated 1.8 million deaths per year globally. The World Health Organization (WHO) suspects that there are >700 million episodes of diarrhea annually in children < 5 years of age in developing countries. While global mortality may be declining, the overall incidence of diarrhea remains unchanged at about 3.2 episodes per child per year.[1]

Rota virus infection (the most common identifiable viral cause of gastroenteritis in all children) account for at least 3.5% of severe and potentially fatal watery diarrhea episodes, with an estimated 500,000 deaths per year worldwide.

The case fatality of diarrhea in children under 5 years has been shown to be 19.7/1000 (9%) as compared to an overall mortality of 55.3/1000.[2]

The decline in diarrhoeal mortality, despite lack of significant changes in incidence, is the result of improved case management of diarrhea as well as improved nutrition of infants and children. These interventions have included widespread home and hospital – based oral rehydration therapy as well as improved nutritional management of children with diarrhea. Despite intensive effort at control persistently high rates of diarrhea among young children are of particular concern.

The objective of this study was to see the change in knowledge and behavior of the mothers and practices of the doctors in treating acute diarrhea in children less than five years of age. Because almost three decades have passed since commercially available ORS was launched and continued feeding during diarrhea is being stressed. Yet it has been observed that feeding (bottle feeding, semi-solids, solids) is either reduced/diluted or totally stopped during acute

episode of diarrhea especially by the grandmothers. They still think that resting the gut is the best treatment in acute diarrhea.

It's a common observation that some mothers still cannot mix commercially available ORS properly nor can they make sugar salt solution at home or realize the importance of giving more fluids during acute diarrhea in their children.

Moreover it has been made very clear by WHO about indications of Drugs during acute diarrhea (antibiotics in Dysentry and Cholera). But unfortunately it's a common practice to prescribe drugs like antiemetics, antiamoebic, antibiotics, probiotics, antimotility and adsorbents in acute diarrhea by the doctors.[15]

Acute diarrhea is a major component of admissions to the children ward, especially in summers. The incidence and mortality is especially high in infancy and more so in the presence of malnutrition and absence of breast feeding. This practice of reducing, diluting or stopping feed during diarrhea should not be underestimated because it's a major concern for children with borderline first or second degree malnutrition who can further deteriorate and fall prey to the vicious cycle of:

diarrhea ⟶ malnutrition ⟷ diarrhea ⟶ death

Incidence of diarrhea in Pakistan 3-4 episodes per child per year (maximum in the first year) in children up to 4 years of age. Approximately 10.8 million children in developing countries die every year before their 5$^{th}$ birthday.[3]

**Study Design:** Cross sectional.

**Aims and Objectives:**

**I.** To assess:

1) Practices of the mothers regarding feeding (bottle feeding, semi-solids, solids) during acute diarrhea, whether they continue, reduce/dilute or stop it.
2) Mothers knowledge about preparation and use of ORS (commercially available, home made, other fluids).

**II.** To know whether drugs are still being prescribed in the form of anti emetics, antiamoebic, antibiotics, probiotics, adsorbents and anti mortality by GP (general practitioners), Medical officers, Specialist and self(told by the neighbour or experience by previous consultation with the doctor).

## Patients and Methods

A cross sectional study was conducted in the ORT corner of Pediatric OPD, Sir Ganga Ram Hospital Lahore, from May 2007 to September, 2007. ORT corner is a part of Pediatric OPD and is fully functional in summer season i.e. from mid of April to September. All case of diarrhea report here. They are examined for hydration status. Those children having no or some dehydration are managed in the same area with plan A and plan B. Patients on plan A are advised to continue feeding, give more fluids and return for follow up. Those with some dehydration are treated according to plan B with ORS (70 ml per kg) in four hours at ORT area. They are reassessed at the end of four hours, if successfully rehydrated, then they are sent home on plan A. If plan B fails in cases of some dehydration, they are then admitted to the emergency. Patients with severe dehydration are also admitted directly to the emergency for management. All the patient's attendants are shown the proper method of mixing and giving ORS.

### Inclusion Criteria:

**Children:**

1) between two months to five years of age.
2) with NO or Some dehydration.
3) accompanied by mothers or grandmothers( who could provide correct information about feeding, preparation/ use of ORS and drugs).
4) with normal weight for age and first degree malnutrition (according to modified Gomez Classification).
5) with diarrhea of less than 15 days duration.

### Exclusion Criteria:

**Children:**

1) with severe dehydration.
2) with second and third degree malnutrition (according to modified Gomez Classification).
3) with complications of diarrhea like hypokalemia, persistent vomiting, abdominal distention, ileus or fits etc.
4) with Dysenrty.

The catchment population comprised mainly of inside city and urban slums. Data was collected on a specified questionnaire by a doctor who entered the required information after interviewing the mothers/grandmothers accompanying the children. The information was collected regarding use of ORS and who prescribed, or they already had knowledge that it should be given(through mewspaper, television, told by neighbours or previous consultation by the doctor), how to prepare ORS, whether or not continued feeding and used drugs during current acute diarrhea episode. The attitude and practices of the doctors about prescribing drugs

## Results

**Table 1:** *Age and gender distribution.*

| Age in months | Number of patients | Percentage |
|---|---|---|
| **<12 months** | 355 | 37.47 |
| **12-24** | 280 | 29.48 |
| **>24-60** | 315 | 33.15 |
| **Total** | **950** | **100.00** |

| Sex | Number of patients | Percentage |
|---|---|---|
| **Male** | 590 | 62.11 |
| **Female** | 360 | 37.89 |
| **Total** | **950** | **100.00** |

was assessed indirectly by collecting information from the mothers/grand mothers who visited them in the current episode before reporting to our ORT corner. The data was entered and interpreted as frequency distribution.

**Table 2:** *Response of the Mothers.*

| | Number of patients | Percentage |
|---|---|---|
| **ORS used** | 464 | 49.67% |
| **Can mix ORS by correct method** | 400 | 42.8% |
| **Feed continued** | 697 | 74.62% |
| **Reduced or diluted** | 137 | 14.67% |
| **Stopped** | 116 | 10.71% |
| **Drugs given** | 400 | 42.82% |

**Table 3:** *ORS Advised By Drugs Advised By.*

| | No. | % age | No. | % Age |
|---|---|---|---|---|
| **General Practitioner** | 130 | 28% | 120 | 30% |
| **Pediatrician** | 46 | 10% | 80 | 20% |
| **Medical Officers** | 163 | 35% | 160 | 40% |
| **Self Usage** | 125 | 27% | 40 | 10% |
| **Total** | 464 | 100% | 400 | 100% |

Table 1 shows 68% of the children were below 2 years of age. Male to female ratio was 62:38.

Only 464 (49.67%) of the mothers gave ORS (commercially available oral rehydration solution) to their children during acute diarrhea out of which 125 (27%) used it by their own knowledge. None of the mothers gave home made ORS. In 130 (28%) of the patients it was advised by general practitioners, in 46 (10%) by pediatricians, 163 (35%) by medical officers and 125 (27%) of the mothers were using it already having gotten information from neighbours, newspapers and television. 400 (42.82%) mothers knew correct method of preparing ORS (commercially available). 137 (14.67%) mothers reduced or diluted feed and 116 (10.71%) stopped it completely during acute diarrhea. It was practiced mainly in those children who were bottle fed, taking semi-solids or solids. Drugs were prescribed by GPs (general practitioners) and Medical officers with government hospitals) Pediatrician and self(told by neighbours or experience with by previous consultation with the doctor) are shown in table 3.

## Discussion

In the developing countries the incidence of diarrhoeal diseases remains unchanged and in acute diarrhea oral rehydration therapy is the treatment of first choice.[4]

Oral rehydration and early realimentation have dramatically reduced mortality and morbidity in acute infectious diarrhea in children.[5] One of the components of WHO diarrhea control programme is correct knowledge and use of oral rehydration solution (ORS). Yet current study shows, ORS (commercially available) was used by 464 (49.67%) of the mothers, out of which 28% were advised by general practitioners, 10% by pediatricians, 35% by MO (medical officer) in government hospitals and 27% had self knowledge of using ORS during diarrhea. According to national survey of Pakistan,[6] the use of ORS in children under 5 years of age is 33% and another study describes the use of ORS in 22% of the patients.[8] A study from the India reveals that not giving ORS, withdrawal of breast feeding and fluid during diarrhea are risk factors for the development of dehydration.

Regarding correct mixing and preparation of ORS (commercially available), present study shows 400 (42.82%) mothers knew its method which is different from a study[9] where 69.3% women had correct knowledge of mixing and preparing ORS. The difference in result could be due to large sample size in our study.

Feeding (including breast feeding, bottle feeding, semi-solids or solids) was continued by 697 (74.62%) mothers during diarrhea as before illness (not reduced or diluted) which is high and encouraging as contrast to a result of another study[10] where it was continued by 43% of the mothers.

Drugs should not be used in cases of acute diarrhea except for antibiotics in cholera and dysentery. Antidiarrhoeal or ant motility drugs, ant emetics and adsorbents like Kaolin are of no benefit in acute diarrhea.[11] Current study describes the use of drugs in 400 (42.82%) children, prescribed by GPs 30%, pediatrician 20%, Medical Officer in government hospitals 40% and self usage in 10%. These drugs were antiamoebic, antibiotics, probiotics, antiemetic, antimotility and adsorbents like Kaolin. Our results are similar to a study.[7] Another study[12] shows 55.9% of the cases were identified as inappropriate use of antibiotics in children with acute diarrhea. A study[13] by Diniz-Santos Dr et al. in 2006 says that routine use of antibiotics for infectious diarrhea in children must be avoided because it brings little benefit in most cases and is associated with increasing antimicrobial resistance except in selected cases. Prescribing drugs (antibiotics, ant emetics, adsorbents) is a common practice.[14]

## Conclusion

Findings of the study indicate that use of ORS or other fluids during acute diarrhea is underestimated.

Diarrhea control programmes have not achieved desired goals of propagating the knowledge of use and preparation of oral rehydration solution (ORS).

Despite the recommendation by WHO for limited use of drugs (antibiotics and others) in selected cases, they are being used by qualified personnels.

About 20-25% mothers still think that resting the gut through fasting in acute diarrhea is a correct way of treating it.

## Recommendations

1. We need to further strengthen the practical programmes for improvement in existing practices regarding feeding and fluid (ORS) during acute diarrhea.
2. Moreover mothers attention should be focused on the hazards of withholding feeding and fluids (reducing or diluting) during acute diarrhea.
3. Along with public awareness programmes for not using drugs, use of ORS, its method of preparation and continue feeding during diarrhea should be promoted and reinforced as an essential health message mobilizing and utilizing all sources of information including electronic and print media.

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