Abstracts and Reports

ORAL REHYDRATION THERAPY AT HOSPITALS: ITS IMPACT ON DIARRHEAL DISEASE ADMISSIONS AND FATALITIES

Introduction

Some time ago, the World Health Organization invited a number of hospitals known to be using oral rehydration therapy (ORT) as a routine measure in the management of dehydration associated with diarrheal diseases to submit data on:

- the total number of diarrheal disease cases seen at the hospital;
- the number of these cases that were admitted as inpatients;
- the number of diarrhea-associated deaths; and
- the types of therapy given.

These data were requested for two periods, before and after the introduction of ORT as a routine measure.

Findings

Fourteen hospitals responded, but only 12 were able to provide data for both pre- and post-ORT periods. Because data were submitted for different years and different periods of time (between 1971 and 1983), and also for the purpose of simplifying the presentation, Table 1 shows annual averages unless otherwise indicated.

Information supplied on the proportion of persons treated with oral and intravenous therapy was incomplete, variable in nature, and not amenable to compilation. The major change in therapy between the two periods, in every case, was the introduction of ORT as a routine measure in both outpatient departments and inpatient wards. Not surprisingly, there was an accompanying decrease in the proportion of patients receiving intravenous therapy.

Three indicators (see Table 1) were used to measure the impact of ORT. These were (1) the rate of diarrheal disease case admissions, (2) the overall case-fatality rate among diarrheal disease patients, and (3) the case-fatality rate among diarrheal disease inpatients.

Nine hospitals provided data allowing calculation of admission rates for both pre- and post-ORT periods. In eight of them there was a statistically significant decrease in the admission rate. Decreases ranged from 19.6% to 80.9% of the pre-ORT rate, with a median of 64.2%. It is not possible to say whether changes in admission policies and factors external to the hospital contributed to the decreases in admission rates; however, no such factors were specifically reported in the explanatory notes accompanying the data.

In one case (at the Matlab Station of the International Center for Diarrheal Disease Research in Bangladesh) a significant increase in the admission rate was reported. The increased (and high) post-ORT rate was explained by improved village-based management of mild dehydration and a continued policy of admission of some presenting cases for logistical reasons (primarily the fact that lengthy travel by boat prevented patients from returning to their homes on the same day).

In six of the nine hospitals where a possible change in the case-fatality rate among diarrheal disease patients could be assessed, a significant decline in the case-fatality rate was observed. No statistically significant increases were reported. Changes (including non-significant changes) ranged from a reduction of 93% compared with the pre-ORT rate to an increase of 11%, with the median change being a decrease of 71%. Assuming no change in the severity of dehydration among presenting patients, a de-

Table 1. Summary of data from 12 hospitals on the impact of oral rehydration therapy upon diarrheal disease admission and case-fatality rates (updated compilation, May 1984). The figures shown for each period are one-year totals or annual averages taken over a two- to five-year period between 1971 and 1983, unless otherwise indicated. The rates in the last three columns were calculated from all years for which data were available.

Country and hospital	Period (pre-ORT or post-ORT)	No. of diarrheal disease cases seen	No. of cases admitted as inpatients	No. of hospital deaths	Admission rate (%)	Overall hospital case-fatality rate (%)	Inpatient case-fatality rate (%)
Bangladesh: International Center for Diarrheal Disease Research, Dhaka Station	Pre-ORT	24,943	5,589	128	22.4	0.5	2.3
	Post-ORT	81,816	3,590	428	4.4[g]	0.5	11.9[g]
Bangladesh: International Center for Diarrheal Disease Research, Matlab Station	Pre-ORT	4,406	990	35	24.5	0.9	3.5
	Post-ORT	10,287	3,516	101	34.2[g]	1.0	2.9
Costa Rica: National Children's Hospital	Pre-ORT	37,035	2,491	44	6.7	0.11	1.8
	Post-ORT	37,543	1,033	21	2.8[g]	0.06[f]	2.0
Egypt: Al Shatby Children's Hospital	Pre-ORT	14,411	1,956	95[c]	13.6	0.6[c]	5.3[c]
	Post-ORT	24,690	975	34	3.9[g]	0.1[g]	3.5
Haiti: State University Hospital	Pre-ORT	–	3,312	466	–	–	14.1
	Post-ORT	–	5,131	95	–	–	1.9[g]
Jamaica: Bustamante Children's Hospital	Pre-ORT	3,690	759	47	20.5	1.2	6.2
	Post-ORT	17,462	659	58	3.9[g]	0.3[g]	8.5
Nepal: Kanti Children's Hospital[a]	Pre-ORT	800	99	12	12.4	1.5	12.1
	Post-ORT	903	33	1	3.7[g]	0.1[g]	3.0
Papua New Guinea: Port Moresby General Hospital	Pre-ORT	6,291	831	10	13.2	0.16	1.2
	Post-ORT	6,515	406	9	6.2[g]	0.14	2.2
Philippines: National Children's Hospital	Pre-ORT	2,172	2,115	16	97.4	0.7	0.8
	Post-ORT	2,571	1,585	7	61.6[g]	0.2[e]	0.4
Thailand: Bamrasnadura Infectious Diseases Hospital[b] (1) children	Pre-ORT	–	1,654	15	–	–	0.9
	Post-ORT	5,208	697	2	13.4	.04	0.3
Thailand: Bamrasnadura Infectious Diseases Hospital (2) adults	Pre-ORT	–	3,820	15	–	–	0.4
	Post-ORT	4,382	1,231	19	28.1	0.4	1.5[g]
Thailand: Children's Hospital, Bangkok	Pre-ORT	14,457	1,086	140	7.5	1.0	12.9
	Post-ORT	17,066	1,084	82	6.4[d]	0.5[d]	7.6[d]
Tonga: Vaiola Hospital	Pre-ORT	–	222	7	–	–	2.9
Post-ORT	–	173	(1.6)	–	–	0.9[e]	

[a]Figures for three months (April to June) in 1982 and 1983.
[b]Figures for six months (January to June) in 1980 and 1981.
[c]Deaths and case-fatality rates are based on data for 1979 only. Otherwise, the averages shown are for the years 1977 and 1979.
[d]In 1982 the three rates shown were 4.45%, 0.2%, and 4.95%, respectively.
[e]$p<0.05$.
[f]$p<0.01$.
[g]$p<0.001$.

crease in the overall case-fatality rate should provide firm evidence of the impact of ORT in hospitals. It is likely, however, that deaths occurring outside the hospital are underreported, a factor which may clearly complicate interpretation of changes in overall hospital case-fatality rates.

Regarding inpatient case-fatality rates, in 13 instances (including separate collections of data for adults and for children at the Bamrasnadura Infectious Diseases Hospital in Thailand) it was possible to calculate this rate for both pre- and post-ORT periods. In only four of these instances were there statistically significant decreases, and in one instance there was a significant increase in the inpatient case-fatality rate. Changes (including non-significant changes) ranged from an 86% decrease to a more than five-fold increase; the median finding was a reduction of 50%.

Decreases in inpatient case-fatality rates may result from generally improved case management (including improved intravenous therapy) associated with a better awareness of the problem of dehydration. Use of ORT for maintenance therapy will also reduce the length of intravenous therapy and the component risk of fatal complications such as septicemia. Increases in inpatient case-fatality rates might be explained by effective outpatient management with ORT resulting in only the most severe cases being admitted.

Conclusion

It is apparent from this brief account that interpretation of changes in the three indicators used is difficult in the absence of more complete data on the circumstances of each hospital and its surroundings. Nevertheless, the data reported here do show that decreases clearly outnumbered increases in all three of the rates calculated. They also support the theory that careful monitoring of these indicators in individual hospitals, with due consideration given to concomitant policy and other changes, should allow evaluation of the impact of ORT in a hospital setting.

Source: World Health Organization, *Weekly Epidemiological Record* 59(47):361-363, 1984.

HUMAN LICE: SOME BASIC FACTS AND MISCONCEPTIONS

All three human lice—the head louse, the clothing (or body) louse, and the crab louse—may be found in any part of the inhabited world, and no race of man is immune to them. They remain an enduring problem and something of a threat, for it should not be forgotten that in the history of the world they have killed more human beings than any other insects, with the exception of malaria mosquitoes.

People tend to hold strong (and usually negative) views about lice. Indeed, no other areas of medical entomology is so affected by entrenched myth and ingrained prejudice, and in order to learn one new true fact about lice most people will first have to unlearn at least one old misconception. For example, a person's rational knowledge of lice may be linked with attitudes toward dirt. The simple truth that lice neither need nor like dirty conditions may thus not seem credible unless the emotional cross-link is broken or the attitude toward dirt modified. This, it appears, is why teaching about lice often needs to be more extensive and penetrating than one might at first expect if it is to be effective.

It was this realization that led us in Britain to change our teaching policies. For many years I and my colleagues ran or participated in large numbers of short meetings and seminars for medical and paramedical personnel without, as far as could be seen, much real effect on fundamentals. However, as soon as the numerous three-hour seminars were replaced by a limited