CHANGING PATTERNS OF DEATH AMONG CHOLERA PATIENTS IN DACCA

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There should be no mortality in uncomplicated cholera if the patients are treated reasonably promptly. However, inspite of long experience in treating diarrhoeal diseases a small number of cholera patients die in C.R.L. The overall mortality was 0.35% during the last 11 years (Table 1). During the year 1974 alone, 23 out of 5,222 admitted died. The present report based on a retrospective analysis of these 23 cases show some interesting changes from the previous years.

Table 2 shows that there were four adults and the rest, 19 patients, belonged to the paediatric age group. The mean body weight of the paediatric group which included three apparently healthy children was 6.8 kg with a mean age of 3.5 years. Below the 3rd percentile of Harvard standard.

Admission picture

Table 3 shows the admission picture. Two were admitted without vital signs and represent cases found dead-on-arrival. Twelve children and three adults were in shock and severely dehydrated. Eleven were admitted in unconscious state and they never regained consciousness. Clinical signs of pneumonia with bilateral crepitations were present in 11 children and one adult.

Nutritional status

As mentioned earlier, three children were recorded as normal from nutrition point of view, two of whom were found to be dead on arrival. Both of these children had travelled a long distance to come to C.R.L. Table 4 shows that thirteen children were recorded as severely malnourished; all of them suffering from marasmus or marasmic kwashirkor type of malnutrition. Plasma protein was estimated in 17 of the paediatric patients on admission, and 12 were found to have plasma specific gravity of less than 1.020 (mean = 1.0175) or a total protein of < 4.81 gm/100 ml.

Three out of four adults were malnourished also. One of them was suffering from lepromatous leprosy and was a begger. Another was a 90 year old man, apparently starving, and another man aged 35 years had been suffering from severe attack of dysentery before coming down with cholera. Plasma protein sp.gr. value of the three men were also less than 1.020 (mean = 1.018).

Electrolyte disturbance

A large number of the patients who subsequently died had profound disturbances in serum electrolyte levels as shown in Table 5. Hypoproteinaemia and hypokalaemia were the most common disturbances found. Mean value of hyponatraemia patients were 122.6 mEq/l and hypokalaemic patients 1.9 mEq/l.

Bacteriology

All the patients were positive for Vibrio cholerae El Tor, 16 Ogawas and four Inabas with three non-agglutinating Vibrios. There were five patients (21%) with positive isolation of shigella, all S. flexneri in addition to cholera. Table 6 shows these findings.

History of Dysentery

A significant finding was the history of preexisting dysentery i.e., passing of mucus and/or blood in 12 of these patients before they were attacked with cholera.

Discussion

A previous analysis of 28 mortalities in cholera by Nalin (1972) also point out the predominant role of malnutrition in patients who died after they were attacked with cholera. Khan and Mosley (1968) had pointed out that shigella was rather an uncommon cause of diarrhoea in Dacca. Khan and Curlin (1974) have shown the increasing importance of shigellosis as a new health hazard in Dacca since 1972. The spread of shigella is showing no sign of abatement at the present moment. As shigellosis is

frequently associated with severe malnutrition it seems likely that majority of these patients (12/23) indeed had clinical shigellosis for a number of days before they came down with a fresh attack of watery diarrhoea due to cholera. Five isolates of shigella (21%) points towards a very high rate of infection.

Conclusion

Recent upsurge in shigellosis is probably responsible for the production of severe malnutrition and electrolyte imbalance in some patients which might have precipitated an irreversible shock at an early stage of diarrhoea due to cholera. Mortality in cholera was therefore related to the spread of shigellosis in the community which is now a recognized health hazard in Bangladesh.

References

1. Khan, M., and Curlin, G. Shigellae: dysentery a new health hazard in Bangladesh. Bangladesh Medical Journal 3, 41-47, 1974.

2. Khan, M., and Mosley, W.H. The significant of shigellosis as a cause of diarrhoea in low economic urban community in Dacca. East Pakistan Medical Journal 12, 2, 1968.

3. Nalin, D.R. Mortality from cholera and other diarrhoeal disease at a cholera hospital. Tropical and Geographical Medicines, 24, 101-106, 1972.

TABLE 1

Admission and Mortalities of Cholera patients in C.R.L., Dacca, 1964-74

	Admission	Death	% Mortality
1964	536	3	0.56
1965	546	4	0.73
1966	1489	9	0.60
1967	545*	4	0.73
1968	757*	3	0.40
1969	2133	2	0.09
1970	2878	3	0.10
1971	2668	13	0.49
1972	612	0	0
1973	1224	2	0.16
1974	5222	23	0.44
Total	18610	66	0.35

*206 treated in Malumghat, Chittagong without any mortality.

TABLE 2

SEX AGE AND ADMISSION WT.

	CHILDREN (19)	ADULTS (4)
SEX	MALE-11, FEMALE-8	ALL MALE
AGE IN YRS.	0.2-8.0	32-90
MEAN	3.5	60
WEIGHT IN KG.	2.7-10.2	32-35
MEAN	6.8	34

TABLE 3

ADMISSION PICTURE

	CHILDREN (19)	ADULTS (4)
ABSENT VITAL SIGNS	2	0
NO RADIAL PULSE	12	3
UNCONSCIOUS	11	2
CONVULSION	3	0
PNEUMONIA	11	1

TABLE 4

NUTRITIONAL STATUS

	CHILDREN (19)	ADULTS (4)
NORMAL	3	1
MALNOURIHSED	13	3
PLASMA PROTEIN <1.020	12	3

TABLE 5

ELECTROLYTE PICTURE

	CHILDREN (19)	ADULTS (4)
HYPONATRAEMIA	9	1
HYPERNATRAEMIA	1	0
SEVERE ACIDOSIS	6	2
HYPOKALAEMIA	10	1
NOT DONE	2	1

TABLE 6

BACTERIOLOGICAL RESULTS

	CHILDREN	ADULTS
VIBRIO CHOLERAE		
OGAWA	13	3
INABA	4	0
N.A.Gs.	2	1
SHIGELLA	4	1
H/O DYSENTERY	10	2

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