

ORIGINAL ARTICLE

Cholera El Tor in Infants below 2 Years of
Age as seen in Private and Hospitalized
Patients

by

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Abstract

A report was made on cholera El Tor in children under 2 years of age with acute gastroenteritis admitted to the pediatric ward of the Dr. Soetomo Hospital, Surabaya. Twenty-three out of 115 cases (20%) showed positive stool cultures. A similar report was made in the same period on patients with gastroenteritis in private practice. Four out of 108 cases (3.6%) showed positive stool cultures. A brief description of the disease pattern of infantile gastroenteritis was presented. The increasing incidence of cholera below one year was also discussed.

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Introduction

Disease pattern in infantile diarrhea may vary with time and place. Its pattern will be more or less influenced by a particular disease which prevailed at that time. Although cholera cases in infants had been reported by several authors (Liem and Liem, 1961; Erwin et al., 1965; Jo Kian Tjay and Talogo, 1965; Maneroeng et al., 1965; Dewanoto et al., 1968), clinical cholera had been mentioned to be quite rare in infants under one year of age.

However, an investigation done in 1973/1974 at the Dr. Soetomo Hospital (Haroen Noerasid et al.) showed that, of the cholera cases under 2 years of age, nearly half were one year or less. This suprisingly high incidence of cholera led the same authors to investigate disease pattern of infantile diarrhea. Attempts have also been made to compare the results with data obtained from the local municipal health service. To find out its

pattern among higher class patients similar study has also been carried out in private patients.

Material and methods

This study was done in children under 2 years of age from the beginning of January to the end of April 1976. Stool cultures on cholera El Tor, pathogenic *Escherichia coli*, salmonella, and shigella were performed in 3 groups of patients:

Group I Hospitalized patients suffering from acute gastroenteritis with severe dehydration; 115 cases were collected in this group representing the lower class of people.

Group II Private patients suffering from gastroenteritis mostly without dehydration; 108 patients were included here, representing the higher class.

Group III 50 patients from the Out Patient Department of the Dr. Soetomo Hospital without any diarrhea, who served as control.

Results

TABLE 1: Hospitalized patients (N: 115)

Age (months)	V. Cholera El Tor	E. Coli	Salmonella	Shigella
0 — 5	1	10	—	1
6 — 11	12	11	1	2
12 — 24	10	4	—	2
	23 (20%)	25 (21.9%)	1 (0.9%)	5 (4.6%)

Double inf. : Cholera + E. Coli : 1
Cholera + Shigella : 1

TABLE 2: *Private patients (N : 108)*

Age (months)	V. Cholera El Tor	E. Coli	Salmonella	Shigella
0 — 5	2	7	1	—
6 — 11	—	7	1	—
12 — 24	2	2	—	—
	4 (3.7%)	16 (14.8%)	2 (1.8%)	— (0%)

TABLE 3: *Non-diarrheal patients (N : 50)*

Age (months)	V. Cholera El Tor	E. Coli	Salmonella	Shigella
0 — 5	—	2	—	—
6 — 11	—	2	—	—
12 — 24	1	—	—	—
	1 (2%)	4 (8%)	— (0%)	— (0%)

TABLE 4: *Percentage of positive stool culture in patients under one year of age*

	Hosp. Pat. (N : 76)	Private Pat. (N : 75)
E. Coli	28.9 %	16.9 %
V. Cholera El Tor	17.1 %	1.2 %
Shigella	3.9 %	0 %
Salmonella	1.3 %	2.4 %

TABLE 5: *Percentage of positive stool culture in patients above one year*

	Hosp. Pat. (N : 59)	Private Pat. (N : 38)
E. Coli	10.5 %	8 %
V. Cholera El Tor	25.6 %	12 %
Shigella	5.3 %	0 %
Salmonella	0 %	0 %

Discussion

The disease pattern of infantile gastroenteritis in Indonesia had been described by several authors.

	Lie 1966 Jakarta	Suprpto 1968 Bandung	Komalarini 1972 Jakarta	Noerasid 1973/74 Surabaya	Noerasid 1976 Surabaya
E. coli	19.7%	37.1%	6.1%	11.2%	21.7%
Shigella	4 %	11.2%	0.8%	0.7%	4.6%
Salmonella	rare	2.4%	—	—	0.9%
Cholera	—	0.9%	2.3%	11.2%	20 %

Although not entirely accurate, the above figures show that the disease pattern in infantile gastroenteritis in Indonesia differs from place to place and from year to year. A striking feature is the difference in the incidence of cholera El Tor. The high incidence of cholera El Tor in Surabaya may be related to the fact that Surabaya has long become endemic for cholera since the first outbreak, cholera cases were found throughout the year until now; 2 peaks were usually found which were usually in May, June, July (dry season), November, December, and January (rainy season), except in 1974, which occurred only in April, May, and June.

Of the cholera cases in the present study 13 out of 23 cases (56.5%) were under one year of age, while in 1973-74 it was only 17 out of 57 patients (29.8%). This may mean that the incidence of cholera under one year is in-

creasing. The age specific case rate is a reflection of the level of immunity in various segments of the population, eg. in 1961 in Manila, the age specific case rate at that time was eventually the same in children as in adults, but 8 years later the case rate in children increased to nearly 3 times. Another example in Bangladesh, when the case rate in children aged 1-5 year was 10 times that seen in adults (Gangarosa and Mosley, 1974). The age pattern varies in recently infected and endemic areas. In newly infected areas the disease characteristically affects adults more commonly than children. By contrast, in endemic cholera areas the attack rate is distinctly higher for children than for adults because people in these areas naturally acquire immunity as they grow older.

It is obvious from this study that in an endemic area like Surabaya an increasingly high incidence of clinical chole-

ra El Tor did occur in infants of less than one year. In treating infantile diarrhea in hospitals located in an endemic area, attention has to be placed on the possibilities of cholera even for infants under the age of one year. Antibiotics, eg. tetracycline, are therefore still necessary in the therapy of infantile diarrhea in spite of causing yellow discoloration of the permanent teeth. In the Pediatric Ward of the Dr. Soetomo Hospital, Surabaya, nearly half of the monthly admitted patients consist of infantile gastroenteritis cases (\pm 300 patients).

Mild cases of clinical cholera which were not admitted to the hospital might also occur. Gangarosa and Mosley (1974) stated that while adult cholera

was more likely to produce severe symptoms which require hospitalization, children were more likely to have only inapparent infection or mild diarrhea. This might be valid for children of the lower class rather than the higher class. In the latter the incidence was rather low. This might be caused by the better standard of living and better sanitation, particularly adequate controlled water supply.

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