
ORIGINAL ARTICLE

Prolonged Diarrhoea Following Acute
Gastro Enteritis

by

PITONO SOEPARTO; SUBIJANTO, M.S.; HAROEN NOERASID

(From the Department of Child Health, Airlangga University, Surabaya.)

Abstract

Prolonged diarrhoea is defined as diarrhoea continuing for more than seven days from the onset of effective regrading the feeds (slightly modified after Gribbin, 1976).

84 infants treated ambulatory for prolonged diarrhoea were investigated for stool pathogens, fat malabsorption (Rossipal Method) and sugar malabsorption (Clinitest Method).

The clinical course of the illness was also studied.

The diarrhoea lasted in most of the cases between 10 — 25 days.

Over three quarters of the infants were aged less than one year.

53,6% of the infants excreted

monella Sp. (17,9%), Staphylococcus aureus (10,7%) and E. Coli aggl neg. (1,2%).

*Lactose intolerance and gross fat malabsorption accounted resp. for 5% and 41,7%
lo*

Introduction

Acute gastroenteritis in infancy and childhood is usually a self-limiting disease which in most cases improves rapidly with appropriate management. In the majority of cases, recovery is rapid and uneventful, yet some children continue to be ill even when the acute illness is supposed to have settled, suffering from persistent gastrointestinal symptoms (Gribbin, 1976).

Prolonged diarrhoea is one of the manifestations of delayed recovery following gastroenteritis as described by Gribbin et al., 1976

The limited reports on prolonged diarrhoea following infantile gastroenteritis in Indonesia prompted the authors to in-

vestigate the nature, possible cause and the course of the disease.

Materials and methods

84 infants ambulatory treated for prolonged diarrhoea were investigated. Their ages ranged between 1 month and 3 years.

Investigation included stool culture for bacterial pathogens, floating test (Rossipal) for fat malabsorption and clintest tablet for sugar malabsorption.

The nature and the clinical course of the disease were also observed.

Prolonged diarrhoea was defined as diarrhoea continuing for more than seven days from the onset of effective re-grading the feeds (slightly modified from Gribbin 1976).

Results.

TABLE 1: Age (N = 84)

Age/month	0 — 1	1 — 6	6 — 12	12 — 18	18 — 24	≥ 24
No of fat	5	36	23	15	2	3

TABLE 2: Pathogens recovered from stool (N = 84)

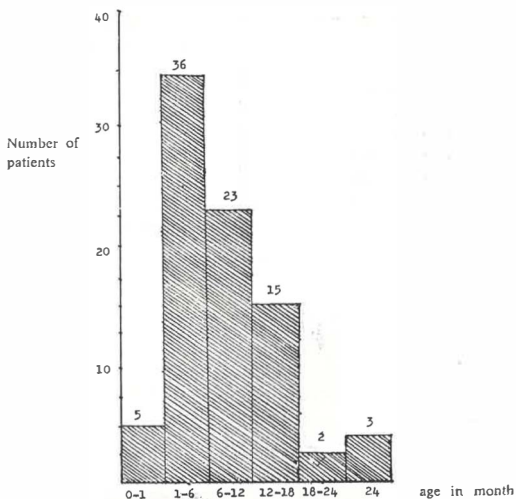
Path. E. Coli. *	26 (31%)
Salmonella sp. *	15 (17,9%)
Staph. aureus. *	9 (10,7%)
E. Coli (aggl —),	1 (1,2%)

* Path. E. Coli + Salm. sp. : 2

Path. E. Coli + St. aureus : 2

Salm. sp. + st. aureus : 11

FIG. 1: Age

TABLE 3: Nature of stool ($N = 84$)

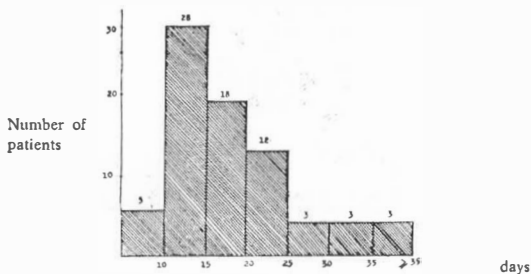
Mucousy.	42 (50%)
Blood + mucous.	11 (13%)
Greenish.	6 (7.1%)
Foamy.	2 (2.4%)

Lactose intolerance was found in 3 out of 60 patients investigated (5%).

Screening tests for fat malabsorption revealed steatorrhoea in 41.7% of the cases tested.

TABLE 4: *The clinical course of prolonged diarrhoea*

Duration of diarrhoea	Number of patients
7 — 10 days	5
10 — 15 days	28
15 — 20 days	18
20 — 25 days	12
25 — 30 days	3
30 — 35 days	3
> 35 days	3

FIG. 11: *Clinical course of prolonged diarrhoea*

Discussion

Most of the infants who suffered from prolonged diarrhoea appeared to be of the age between 1 month and 18 months with a peak incidence at 1-6 months. This differs with that found by Gribbin (1976) namely that children suffering from prolonged diarrhoea were mostly below 1 months of age the reasons for the difference is however difficult to explain.

Only one child out of 14 children (7%) in Gribbin's study excreted intestinal pathogen (path. *E. coli*), compared to 45 out 84 excretors (53,6%) in the present study.

Path. *E. coli* were found in 31% and *Salmonella* sp. in 17,9% among the excretors.

A study by Haroen Noerasid in 1979 on ambulatory treated simple acute gas-

troenteritis patients revealed that path. *E. coli* accounted for 16,9% and *Salmonella* sp. for 2,4% of the patients studied (Haroen Noerasid, 1979).

In non diarrhoeal patients Haroen Noerasid (1979) found an incidence of path. *E. coli* of 8% (4 out of 50 patients) see table 5 below :

TABLE 5 : *The incidence of intestinal pathogens*

	Non diarrhoeal patients (Noerasid 1979) N = 50	Simple acute gastroenteritis (Noerasid 1979) N = 108	Prolonged diarrhoea (Pitono Soeparto 1976) N = 84
Path. <i>E. Coli</i>	4 (8%)	16 (14,8%)	26 (31 %)
<i>Salmonella</i> sp.	—	2 (1,8%)	15 (17,9%)
<i>Staph. aureus</i>	—	—	9 (10,7%)
<i>E. Coli</i> (aggl.-)	—	—	1 (1,2%)
Cholera El Tor	1 (2%)	4 (3,7%)	—

The difference in the discovery rate of pathogens between the non diarrhoeal patients and patients with prolonged diarrhoea is statistically significant ($X^2 = 33,16$, $p < 0.001$).

Whether the course leading to prolonged diarrhoea in western (developed) countries as described in Gribbin's study is different than that in tropical countries (developing countries) like Indonesia or whether bacterial pathogens in

Indonesia play an important role in causing prolonged diarrhoea is still a speculation.

A thorough investigations towards this matter are certainly of importance.

Lactose intolerance accounted for 5% of the patients investigated, certainly for below the incidence of lactose intolerance found by Pitono Soeparto (1976) in the diarrhoeal stage of acute gastroenteritis - see table 6 below :

TABLE 6 : *Lactose intolerance*

	Acute gastroenteritis diarrhoea stage Pitono, Soeparto 1976) N = 63	Prolonged diarrhoea following gastroenteritis Pitono, Soeparto 1976) N = 60
Lactose intolerance No. of patient	29 (46,03%) $X^2 = 26,7$	3 (5%) $p < 0.001$

The difference between the incidence of lactose intolerance in the diarrhoeal stage of simple acute gastroenteritis with

that in prolonged diarrhoea is statistically significant.

One can perhaps take the conclusion from the study firstly that lactose intolerance plays only little part in the etiology of prolonged diarrhoea of most of the cases, secondly, lactose intolerance is only of temporary nature occurring mostly during the first days of the diarrhoeal stage of acute gastroenteritis.

Gross fat malabsorption occurred surprisingly in quite a number of cases studied (41.7%).

Studies concerning the incidence of fat malabsorption in acute gastroenteritis is however limited.

Summary

84 infants treated ambulatory for prolonged diarrhoea were investigated for

stool pathogens, fat malabsorption (Rosipal "floating" test) and sugar malabsorption (clinitest tablet).

The clinical course of the illnesses were also observed.

In the majority of cases (53,6%), pathogens were recovered from the stools of which mostly were path. E. Coli (31%) and Salmonella sp. (17,9%).

Lactose Intolerance and gross fat malabsorption accounted resp. for 5% and 41,7% of the cases studied.

Factors relating to the possible cause of the disease are also discussed.

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