

# Diarrhoea

## Persistent diarrhoea and its management

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Persistent diarrhoea is defined, as an acute episode of diarrhoea persisting for longer than 14 (WHO recommends 21) days without remission. Due to effective management of acute diarrhoea with oral rehydration salt solution, the importance of persistent diarrhoea is increasing. It has been shown in a community based study in Bangladesh 8% of all cases of acute diarrhoea become persistent (1).

In Bangladesh, Guatemala and Ethiopia, the incidence is about 3-20%. During hospital treatment of acute diarrhoea, a significant number of children go on to persistent diarrhoea.

Knowledge on pathophysiology of persistent diarrhoea is rapidly increasing.

The different aetiologies of persistent diarrhoea include,

- 1) Lactose intolerance
- 2) Cow's milk protein intolerance
- 3) Soya Protein intolerance
- 4) Persistence of stool pathogens, particularly shigellosis, Giardiasis, ETEC, Cryptosporidium
- 5) Small bowel bacterial overgrowth
- 6) Malnutrition

Predominant feature of persistent diarrhoea is growth failure, malnutrition, evidence of micronutrient deficiency particularly zinc deficiency, systemic infections etc.

Why does some cases of acute diarrhoea become persistent?

Age- Persistent Diarrhoea Syndrome (PDS) tends to occur in younger infants with peak incidence in various countries such as Bangladesh, India and Brazil varies between 7 months, 0-11 months and 3-6 months (3). Other frequent associations with PDS include; a non-breast fed infants, antibiotic therapy, history of bloody diarrhoea, Vit. A deficiency and Protein energy Malnutrition.

Malnutrition has strong relationship with increased duration and severity of diarrhoea immunity of the gastrointestinal tract.

Subtotal villous atrophy always accompanies malnutrition. Prolonged intestinal mucosal injury has been postulated to maintain a vicious cycle of malnutrition diarrhoea malabsorption (4).

### Diagnosis of the underlying causes

Detailed history of onset of diarrhoea to age, previous diarrhoeal episodes including measles, previous dietary regimen, duration of diarrhoea, character of stool, hygiene and sanitation of the family, socio-economic status of the parents and breast feeding should be taken into consideration. Physical examination consist of anthropometric measurements for presence of malnutrition; assessment of dehydration, signs of deficiency diseases particularly zinc and vit A and presence of underlying infection such as pneumonia, T.B. UTI etc.

In a country like Bangladesh with limited health service facilities, investigations should be limited. following investigations should be considered stool examination for parasites and bacteria, urine analysis, haematocrit & full blood count. Urca/electrolytes, blood cultures, liver function and serum albumin and chest x-ray may be helpful for selected cases.

### General management includes the following

- o Correction of dehydration and maintenance of adequate hydration with oral or intravenous rehydration solution.
- o Active management of underlying infection with appropriate broad spectrum antibiotics.
- o Observatin of the volume, frequency of stool and consistency.

- o Stool pH should be measured to diagnose carbohydrate malabsorptions.

**Management of Protracted Diarrhoea**

Persistent diarrhoea can be managed satisfactorily before establishing the specific underlying aetiologies:

**i) Correction of dehydration**

Mild to moderate dehydration can be rehydrated with oral rehydration salt. WHO ORS can be easily used. Intravenous rehydration may be needed for high purging patients & those presenting with severe dehydration.

**ii) Types of Infection**

Infection usually accompanies protracted diarrhoea. Most common are respiratory tract infection, urinary tract infection and septicaemia (5).

easy to digest and absorb with adequate nutrient and energy and hypoallergenic in nature. If the children are formula-fed, cow's milk should be withheld. Lactose intolerance can be effectively managed by diluting the milk formula or by fermentation. Soya based formula may be tried for infants younger than 3 months of age.

Encouraging results from ICDDR'B and Dhaka Shishu Hospital showed that a rice based liquid formula made with inexpensive (Tk.8/kg) locally available ingredients has been used successfully. 88% of cases over three months of age improved within 5 days (6) Another milk free diet prepared with rice-dal (lentils) mixtures has also been used successfully in India. (7) More severe cases who fail to respond with rice based diet, may be

Table-1

**Types of infections identified in 167 patients with persistent diarrhoea on admission.**

Disease	N	Total%	Hospital death
Pneumonia + otitis media	10	6.2	2
Urinary Tract Infection	14	8.0	
Septicaemia	4	2.2	2
Viremia	5		
Upper Respiratory Infection	30	17.0	
Pulmonary tube	1	.5	3
	<b>64</b>	<b>38</b>	<b>7 (42)</b>

Source S.K. Roy et al

Appropriate broad spectrum antibiotic should be used immediately even before results of investigation are available.

**Dietary management of persistent diarrhoea :**

The most important strategy is to continue and protect breast feeding. Even weaned children can be encouraged to establish relactation. Diet should be

given a Chicken based diet, which is expensive and difficult to prepare in most situation.

Adequate amount of micronutrients and vitamins should be given to correct deficits & to prevent depletion of body stores.

Rigorous management of malnutrition and infections in persistent diarrhoea can significantly improve child survival in most developing countries.

Table - 1

**Composition of diet used for persistent diarrhoea patients  
(Per litre)**

<u>Initial diet. milk based for Children 4 months</u>		<u>Lactose-free rice-based diet</u>	
Dried Skimmed milk (g)	60	Rice powder (g)	60
Sugar (g)	50	Sugar (g)	40
Rice powder (g)	50	Egg white (2)	50
Oil (g)	45	Soyabceen oil (g)	30
Mg cl <sub>2</sub> (g)	0.5	Mg cl <sub>2</sub> (g)	0.5
Kcl <sub>2</sub> (g)	1.0	KCl <sub>2</sub> (g)	1
Energy (kcal)	1000	Cacl <sub>2</sub>	0.5
Protein (g)	26	Energy (kcal)	700
PE ratio	10%	Protein (g)	19
		PE ratio	10%

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