

# ACUTE DIARRHOEAL DISEASES

## Definition

- Diarrhoea is defined as the passage of loose, liquid or watery stools.
- Stools passed more than 3 times a day.
- Recent change in consistency and character of stools important than number of stools.

## ETIOLOGY

- Viruses
- Bacterial causes
- Others

## VIRUSES

Many DIARRHOEAL diseases are caused by viruses

- Rotaviruses –leading cause of severe, dehydrating diarrhoea in children aged less than 5 years globally.

- Astroviruses
- Adenoviruses
- Calciviruses
- Coronaviruses
- Norwalk group of viruses
- Enteroviruses
- Cytomegalovirus

## ▀ BACTERIAL CAUSES

- V. Cholerae 01
- Salmonella
- Shigella
- Enterotoxigenic E.coli
- Campylobacter jejuni

Less known pathogens

- Yersinia enterocolitica
- V.parahaemolyticus

## OTHERS

- Amoebiasis
- Giardiasis
- Cryptosporidium
- Malnutrition
- Inborn errors in metabolism
- Septicaemia
- Necrotizing enterocolitis
- AIDS (persistent diarrhoea)

## NON INFECTIVE CAUSES

- Osmotic diarrhoea (lactose intolerance)
- Food intolerance
- Antibiotic induced
- Inflammatory bowel disease
- Celiac disease



## **PATHOGENESIS**

1. Osmotic diarrhoea
2. Secretory diarrhoea

Rota virus produce diarrhoea by both mechanisms

## OSMOTIC DIARRHEA

- Mechanism

When intestine contains lot of unabsorbed food adds to the osmotic load of intestine; it osmotically drags fluid into the intestine and hence produce diarrhoea.

- Occurs in

1. Intestinal villus damaged eg. Infection
2. Consumption of a lot of sugar or related ones

## MARKERS OF OSMOTIC DIARRHOEA

- Stool sodium less than 50 mEq/L
- Stool reaction acidic
- Stool reducing substance positive pH less than 5.5
- Discontinuation of feed results in improvement
- Perianal excoriation
- Volume of stool less than 200ml/day

Eg. lactose intolerance

## SECRETORY DIARRHOEA

- Cells in villi absorptive and in crypts secretory
- Toxin of cholera affect secretory cells and there is outpouring of fluids and hence diarrhoea
- Since there is active secretion, the diarrhoea stool is rich in sodium and thus produce severe dehydration rapidly

## MARKERS OF SECRETORY DIARRHOEA

- Dehydration occurs rapidly and is often severe
- Dyselectrolytaemia is more common
- Stool sodium greater than 70mEq/ml
- Stool pH above 5.5; stool reducing substance negative
- No effect with discontinuation of feeding
- Volume of stool high greater than 200ml/day

Eg. cholera

## CLINICAL TYPES

4 clinical types

1. Acute watery diarrhoea
2. Acute bloody diarrhoea
3. Persistent diarrhoea
4. Diarrhoea with severe malnutrition  
(Marasmus and Kwashiorkor)

## ACUTE WATERY DIARRHOEA

- Lasts for hours to days
- Main danger dehydration
- Weight loss occurs if feeding not continued
- Caused by V. Cholera, E. Coli, Rotavirus

## ACUTE BLOODY DIARRHOEA

- Also called dysentery
- Main danger damage of the intestinal mucosa sepsis and malnutrition, dehydration
- Marked by visible blood in stools
- Most common cause *shigella*



## **PERSISTENT DIARRHOEA**

- Last 14 days or longer
- Main danger is malnutrition and serious non-intestinal obstruction
- Dehydration may also occur
- Persons with other illness such as AIDS are more likely to develop persistent diarrhoea

## DIARRHOEA WITH SEVERE MALNUTRITION

- Main danger severe systemic infection, dehydration, heart failure, and vitamin and mineral deficiency



*Thank you*