

Gastrointestinal diseases:

**Ask students to read the chapter on Diarrhoeal Disorders: A Handbook of Paediatric Problems, 4th Ed. Page 32-73.
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A. Diarrhoea

Epidemiology:

1. Definition of diarrhoea.
 - Total amount of fluid in the intestine
 - Types of secretion
 - Breast-feeding
 - Gastro-colic reflex
2. Clinical types of diarrhoea.
 - Acute watery diarrhoea
 - Dysentery
 - Persistent diarrhoea
3. Risk factors for diarrhoea (host factors and environmental factors)
 - Malnutrition
 - Vitamin A deficiency
 - Measles
4. Mortality in relation to three clinical types.
 - Acute watery diarrhoea: morbidity high mortality low
 - Persistent diarrhoea: morbidity low but mortality high
 - Hemolytic uraemic syndrome

Principles of treatment

1. Re-hydration
 - Nutrition
2. Scientific basis of ORS.
 - Osmolality
 - Carrier protein can combine one molecule of glucose and one molecule of sodium, sodium pumped in the lateral serosal border active energy dependent process.
 - Acute diarrhoea (secretory) lasts for more than 48 hours: enterocytes migration, enzymatic maturation.

Signs of dehydration

1. Types of diarrhoea
 - Classification for the management: acute, dysentery, persistent.
 - Pathophysiology: osmotic and secretory.
1. Risk of dehydration in children
 - Percentage of water in relation to body weight in children.
 - Children can not feed themselves.
 - Excessive cry may be due to hunger, mother feeding bottle milk.

2. Specific signs
 - Loss of body weight
 - Other clinical signs
 - Only four signs are important with same sensitivity and specificity.
 - General condition eyes, thirst, skin turgor.

Degree of dehydration

1. Signs in relation to degree of dehydration
 - Mild/ Moderate/Severe
 - No signs/Some signs/Severe signs.
3. Calculation of fluid according to the severity of dehydration
 - Lost fluid within 4-6 hours.
 - On going losses to be added within 4-6 hours.
 - Maintenance fluid within 24 hours.
4. Types of fluid
 - Ringer's lactate, Normal saline
 - 1/5th Normal saline especially for the maintenance and for neonate.
 - 5% Dextrose
 - ORS, Home fluid
 - Sweetened fluid.

Dehydration according to the serum Na⁺

1. Types of dehydration.
 - Hyper /Norma/ Hypo.
 - Definition according to the serum sodium.
 - Clinical features: cellular de-hydration or over-hydration.
2. Management of different types.
3. Complications.
 - HUS, arterial thrombosis, intracranial haemorrhage, irreversible tubular damage.

Specific etiological agents

1. Rotavirus.
2. E.coli.
3. Cholera.
4. Sheigella/salmonella/camphylobacter.
5. Giardia/entamoeba

Summary

1. Aetiological agents in relation to the type of diarrhoeal stool.
2. Recent advances: zinc, vitamin A, vaccines, diet.
3. Antiemetic and antidiarrhoeal drugs.
4. Secondary lactase deficiency, Irritable bowel syndrome.
5. Well child, gaining weight but loose motions 3-5 day, stool R/E normal
 - Frequent feeding (hourly) increases the gastrocolic reflex. Its management.

B. Abdominal pain:

Aetiology: Older children can complain but infants present with excessive cry.
Windy colic

Differentiation between organic and inorganic.

Inorganic: Separation fear, family problem.

Peer pressure, school problem.

Complaining of severe pain just on mild pressure over the abdominal wall.

Severity and site of localization.

Frequency and changing site.

Mild touch eliciting pain and lying in supine during pain.

Associated findings.

Walking with a slight bent: infective hepatitis(preventing the stretching of the capsule)

Acute pain with high fever :shigellosis, basal pneumonia

HS purpura: rash or joint pain after few days.

Urticarial rash

Food intolerance

Parasites: should be quite a few in numbers

Abdominal tuberculosis

Faecolith, intussusception.

Colicky or dull ache.(tubal or solid viscera)

Site: epigastric – upper GI, liver

Umbilical – intestinal, pancreatic

Suprapubic –colon, urinary bladder.

Investigations and management

History (acute or chronic) and findings are essential to plan.

B. Vomiting.

Aetiology

Rumination, possetting.

Gastro-oesophageal reflux.

Forced feeding

Obstruction – complete or partial.

Congenital pyloric stenosis., bands and atresias (duodenal)

Systemic illness.

Meningitis, SOL.

Infective hepatitis

Acute otitis media.

Urinary tract infections

Cough and cold (nose block).

Drugs/poisoning: Erythromycin.

Food intolerance

Migraine.

Symptoms and signs

Frequency and signs of dehydration

Associated other signs: Fever, diarrhoea, meningitis, failure to thrive or thriving well.

Investigation

Investigate according to the working diagnosis

Mantoux test, blood for eosinophilia (visceral larva migrans)

Reduplication of bowel: barium meal and follow through..

Treatment

Treat dehydration: chloride loss.

Anti-emetic usually does not have a role unless it is central.

Correction of acidosis prevents vomiting.

Psychogenic.

Reduction of intracranial pressure.

Counselling the parent in child thriving well.

Elevation of trunk, burping, left lateral position, thickening the feed.

C. Haematemesis/melaena

Aetiology:

Swallowed blood -- epistaxis

Apt test in early neonatal period.

Drugs (steroid, analgesics), food.

Oesophageal varices.

Bleeding disorders

DIC

Portal hypertension

History of neonatal umbilical infection.

Jaundice.

Splenomegaly.

Site of obstruction.

Investigations: ultrasound, LFT and endoscopy.

Treatment: vasopressin, blood transfusion, sclerotherapy.

Polyps

Fresh blood

Parental and patient's anxiety.

Gets better without specific treatment by 8 years.

Recurrences.

Associated diseases.

Polypectomy.