PERSISTENT DIARRHOEA
DEFINITION

• Prolongation of acute diarrhoea / dysentery for more than 14 days

• Generally associated with weight loss.
PROTRACTERED DIARRHOEA

• Prolongation of acute diarrhoea or dysentery >14 days – Persistent Diarrhoea
• Persistent diarrhoea – associated weight loss & extreme malnutrition – Protracted Diarrhoea
CAUSE OF PERSISTENT DIARRHOEA

• Persistent infection with one or more enteric pathogens
• Secondary malabsorption of carbohydrates & fat.
• Intestinal parasitosis.
• Dietary protein allergy/intolerance.
• Damage to the absorptive mucosal surface of small intestine
• Delay in repair of the damaged epithelium (Normal <5 days)
• Carbohydrate, fat and protein mal-absorption ensues as consequence
• Direct absorption of macromolecules leads to protein allergy.
• **Mild form**
  – Several motions
  – No significant weight loss
  – No significant dehydration

• **Moderate form**
  – Several motions
  – Marginal weight loss
  – Without dehydration
  – Non tolerance to
PATHOLOGY CONT..

• Severe form
  – Dehydration with several motions
  – Weight loss
  – Non tolerance to milk & cereals
  – Secondary infection often coexists
DIAGNOSIS

- Assess dehydration.
- Assess malnutrition.
- Stool - R/E, Culture, Reducing sugar
MANAGEMENT

• **Mild form** - Try low milk formula feeds.

• **Moderate form** - Do not try milk, permit cereal based feeds.

• **Severe form**
  – Phase I: Resuscitation < 24 hours
  – Phase II: Partial parenteral nutrition (1-4 days), IV fluids, colloid, antimicrobials, electrolyte balance
  – Phase III: Nutritional rehabilitation with calorie dense, > 5 days, lactose free formulae
    If fails - Chicken/egg white, glucose, oil - feed
    If fails - Total parenteral nutrition
INDICATIONS FOR ANTIMICROBIALS

• Presence of gross blood in stool/Dysentery
• Associated systemic infection.
• Severe malnutrition.
• Cholera
VITAMIN AND MINERAL SUPPLEMENTATION

- Twice the RDA of vitamins and minerals.
- Special attention for Vit. A and Zn.
- In malnutrition:
  - Magnesium sulphate IM
  - Potassium oral.
PREVENTION

- Promotion of breast feeding.
- Active management of acute diarrhoea.
- Appropriate dietetic management.
- Judicious administration of drugs.
CHRONIC DIARRHOEA
Definition

• Diarrhoea of more than 2 weeks duration.

OR

• 3 attacks during last 3 months, without specific congenital, biochemical or metabolic disorders.
COMMON CAUSES OF CHRONIC DIARRHOEA

• Post gastroenteritis malabsorption syndrome.
• Protein-energy malnutrition.
• Cow’s milk /soy protein intolerance.
• Primary/Secondary disaccharidase deficiencies.
• Cystic fibrosis.
• Intestinal parasites – Giardia, EH, Cryptosporidia.
• Excessive consumption of carbonated fluids.
• Intestinal infection – Enteropathogens, M.tuberculosis.
• Tropical sprue.
• Inflammatory bowel disease –
• Crohn’s disease, Ulcerative colitis.
EVALUATION OF PATIENTS WITH CHRONIC DIARRHOEA

PHASE – I

• Clinical History.
• Nutrition assessment.
• Stool exam – pH, reducing substances, leukocyte count, fat, ova, parasites.
• Stool culture.
• Stool for Clostridium difficile toxin.
• Blood studies – CBC, ESR, Electrolytes, Urea, Creatinine
EVALUATION OF PATIENTS WITH CHRONIC DIARRHOEA – Contd..

PHASE - II

• Sweat chloride.
• 72 hours stool fat estimation.
• Stool electrolytes, Osmolarity.
• Stool for phenolphthalein, magnesium sulphate, phosphate.
• Breath H2 test.
EVALUATION OF PATIENTS WITH CHRONIC DIARRHOEA
– Contd.

PHASE - III

• Endoscopic studies.
• Small bowel Biopsy.
• Sigmoidoscopy or colonoscopy with biopsies.
• Barium studies.
EVALUATION OF PATIENTS WITH CHRONIC DIARRHOEA
– Contd.

PHASE - IV

• Hormonal studies
  – Vasoactive intestinal polypeptide.
  – Gastrin.
  – Secretin.
  – 5-hydroxyindoleacetic assay.
THERAPY

• Depends upon the cause.
• Secondary carbohydrate intolerance – by reduction of the sugar load.
• Lactase for digestion of lactose.
• Post gastroenteritis malabsorption – Needs predigested formula.
• Specific diseases to be treated.
DYSENTERY

• It is a Syndrome of Bloody diarrhoea with visible red blood, fever, abdominal cramps, rectal pain & tenesmus, mucoid stool.

• Does not include :-
  – Blood streaks on formed stool.
  – Microscopic red blood cell in stool.
  – Melena.
CAUSES OF DYSENTERY

• Shigella
• Entero- invasive & Entero- hemorrhagic E.coli (EIEC&EHEC)
• Salmonella
• Campylobacter jejuni
• Entamoeba histolytica
PATHOGENESIS

• Spread by feco-oral contamination.
• Bacterial invasion of colonic epithelium.
• Results in inflammatory colitis.
• Recto sigmoid area maximally affected.
• Host defense
  – Copious mucoid secretion
  – Epithelial regeneration.
• Shigella causes disease with 10 to 100 organisms
CLINICAL SPECTRUM

• Watery diarrhoea to fatal dysentery.
• Incubation period – 12 hours to 1 week.
• High fever.
• Abdominal cramps.
• Vomiting
• Abdominal tenderness & rectal tenderness.
• Blood & mucus in the stool.
• Tenesmus and straining.
• Rectal Prolapse.
• Self limiting course in most bacterial infection in 10 days.
• Bacteremia is uncommon.
COMPLICATIONS

• Seizures – Mostly with Shigella- shig(Type –I)
• Dyselectrolytemia & dehydration
• Rectal prolapse
• Malnutrition – Protein losing enteropathy.
• Hemolytic Uremic Syndrome.
• Non suppurative arthritis.
DIAGNOSIS

• Stool Examination – for leukocytes, RBCs, trophozoites of EH
• Stool Culture
• Peripheral blood smear – Leukocytosis with more band cells.
• Blood culture in toxic, malnourished & very young infants.
• Electrolytes in severe dehydration.
# Antimicrobials in Dysempyenia

<table>
<thead>
<tr>
<th>Antimicrobial</th>
<th>Treatment schedule</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in children</td>
<td>in adults</td>
</tr>
<tr>
<td><strong>First line</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>15 mg/kg</td>
<td>500 mg</td>
</tr>
<tr>
<td></td>
<td>2 times per day for 3 days, by mouth</td>
<td></td>
</tr>
<tr>
<td><strong>Second line</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pivmecillinam</td>
<td>20 mg/kg</td>
<td>100 mg</td>
</tr>
<tr>
<td></td>
<td>4 times per day for 5 days, by mouth</td>
<td></td>
</tr>
<tr>
<td>Ceftriaxone</td>
<td>50-100 mg/kg</td>
<td>- Efficacy not validated</td>
</tr>
<tr>
<td></td>
<td>Once a day IM for 2 to 5 days</td>
<td>- Must be injected</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>6-20 mg/kg</td>
<td>1-1.5 g</td>
</tr>
<tr>
<td></td>
<td>Once a day for 1 to 5 days, by mouth</td>
<td></td>
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</tbody>
</table>
# Antimicrobials That Should Not Be Used for Shigellosis

<table>
<thead>
<tr>
<th>Antimicrobials</th>
<th>Rationale for not using</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin, chloramphenicol, co-trimoxazole, tetracycline</td>
<td>- Used in the past; most <em>Shigella</em> are now resistant</td>
</tr>
<tr>
<td>Nitrofurans, aminoglycosides, first- and second-generation cephalosporins, amoxicillin</td>
<td>- Penetrate the intestinal mucosa poorly</td>
</tr>
<tr>
<td>Nalidixic acid</td>
<td>- Used in the past; most <em>Shigella</em> are now resistant</td>
</tr>
<tr>
<td></td>
<td>- Use may increase resistance to ciprofloxacin</td>
</tr>
</tbody>
</table>
HIGH RISK FACTORS IN DYSENTRY WITH HIGHER MORTALITY RATE

- Infants < 1 year
- Non breast fed babies.
- Dehydration
- Malnutrition
- H/o Convulsion or measles
- Infants
THERAPY FOR AMOEBIC DYSENTRY

• Diloxanide furoate – 20mg/kg/day in 3 divided doses X 10 days
• Metronidazole – 35 – 50mg/kg/day in three divided doses X 10 days

Alternative
• Paromomycin - 25-30 mg/kg/day in 3 divided doses X 5 to 10 days.
• Dehydroemetine hydrochloride – 1.0 to 1.5 mg/kg/day IM X 5 days
• For severe cases two oral medicines can be combined.
CONTROL

• Prevention of feco-oral transmission.
• Breast feeding
• Hand washing before handling food.
Thank You