Gastrointestinal Manifestations of HIV
Basic considerations

• Clinical signs and symptoms infrequently suggest a specific diagnosis.
• GI symptoms in a patient on HAART may be drug induced or non-opportunistic in etiology.
• In AIDS, GI pathogens may be part of a systemic infection (e.g. MAC).
• Multiple infections are common.
• In children evidence of tissue invasion may be technically difficult to prove.
• Evaluation should proceed from less invasive to more invasive and should be dictated by the severity and acuity of symptoms.
• Treatment of all opportunistic disorders should include HAART.
Causes of Diarrhea are Multifold

- Infections
  - Childhood diarrhea with usual organisms
  - Opportunistic organisms
  - Unusual organisms
- Malabsorption and intolerance
  - Lactose intolerance
  - “post enteritis syndrome”
  - tropical sprue
  - HIV related
- Bacterial overgrowth
  - Play role in development of prolonged diarrhea
- Non-specific inflammation and small-bowel atrophy
- Medication
  - side effect (also of HAART, especially PI)
<table>
<thead>
<tr>
<th>Organism</th>
<th>Comments</th>
<th>Diagnosis</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotavirus</td>
<td>New vaccines - EXSPENSIVE</td>
<td>Stool viral culture</td>
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<td>Adenovirus</td>
<td></td>
<td>Stool viral culture</td>
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<tr>
<td>CMV</td>
<td>Colitis</td>
<td></td>
<td>Gancyclovir</td>
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<td>Salmonella</td>
<td>Dysentery</td>
<td>Stool culture</td>
<td>According to sensitivity</td>
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<tr>
<td>Shigella</td>
<td>Dysentery</td>
<td>Stool culture</td>
<td>Nalidixic acid Ampicillin Chephalosporin</td>
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<td>E Coli</td>
<td>Dysentery / Toxin / HUS</td>
<td>Stool culture</td>
<td>According to sensitivity</td>
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<td>Campylobacter jejuni</td>
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<td>Stool culture</td>
<td>Erythromycin</td>
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<td>Yersinia E</td>
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<td>Stool culture</td>
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<tr>
<td>C. difficile</td>
<td>Antibiotic use / hospitalization</td>
<td>Toxin</td>
<td>Metronidazole</td>
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<tr>
<td>Giardia lamblia</td>
<td>Common</td>
<td>Stool microscopy</td>
<td>Metronidazole, Albendazole</td>
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<td>C parvum</td>
<td>Also causes hepatobiliary disease</td>
<td>Stool microscopy</td>
<td>Azithromycin, Paromomycin</td>
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<tr>
<td>Isosporabelli</td>
<td></td>
<td></td>
<td>CTX, Pyramethamine, Ciprofloxacin</td>
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<td>Microsporidum</td>
<td>Also causes hepatobiliary disease</td>
<td>Stool microscopy</td>
<td>Albendazole</td>
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<td>Amebiasis</td>
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<td>Stool microscopy</td>
<td>Metronidazole</td>
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<tr>
<td>Tuberculosis</td>
<td>Malabsorption</td>
<td>Culture, Imaging Histology</td>
<td>For extra pulmonary TB</td>
</tr>
<tr>
<td>MAC</td>
<td>Malabsorption</td>
<td>Culture, Imaging Histology</td>
<td>For MAC</td>
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<tr>
<td>Geo-helmiths</td>
<td>Common in children</td>
<td>Stool microscopy</td>
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Approach

- History
- Duration
  - Acute (persists for up to 14 days)
  - Chronic (persists for 2 weeks or longer)
- Systemic symptoms
- Clinical findings
  - Signs of dehydration or shock
  - Nutritional evaluation
- Stool microscopy
Investigation

• Serum electrolytes
  • Hypokalaemia common in malnourished children
  • Sodium (↓/↑), phosphate (↓), magnesium (↓)
• Acid base
• Albumin
• Stool microscopy
• Benedict test / Clinitest
Management

• Support hydration
• Treat suspected cause
• Consider lactose free formula / fermented feeds early
• Manage possible bacterial overgrowth and chelate bile salts
• Anti-diarrhea
  • Last resort
  • Only of no clear infection identified or not responding to conservative treatment
  • Use drugs with an acceptable side effect profile
• Micronutrients
  • Zinc
  • Vit A if malnourished
Problem parasites

Microsporidiosis

Cryptosporidiosis

Isosporabelli
Diagnosis

- Stool microscopy
- Small bowel biopsy
A word on C parvum

- Symptoms develop 2-10 days after infection
- Low-grade (<39°C) fever, general malaise, weakness, fatigue, loss of appetite, nausea, and vomiting may accompany diarrhea
- Is a secretory diarrhoea
- Associated with malabsorption
- Steatorrhea has been reported
- May contain mucous but rarely blood or leukocytes
- Recovery may be observed independently of therapy.
Classification of *C. parvum* diarrhoea

- Acute/Transient < 28 days
- Chronic > 28 days
- Fulminant > 21 stools/day

- Severest manifestations often in those with lowest CD4 count
• Can also cause
  • Acalculous cholecystitis or
  • Sclerosing cholangitis
    • Beading of the common bile duct or papillary stenosis
    • Suspect of unexplained cholangitis or raised GGT / ALP
  • Pneumonia
• Treatment difficult, can use
  • Azithromycin 12mg/kg/day
  • Paromomycin 25-35mg/kg/day 12 hourly
  • Nitrous oxanide
Idiopathic AIDS enteropathy

- Direct infection of the enterocyte?
- Chronic diarrheal illness in patients with AIDS, where no cause can be identified despite an extensive evaluation
- Diagnosis of exclusion
Dysphagia

- Causes
- Infectious
  - Candida albicans
  - Cytomegalovirus
  - Herpes simplex
  - Mycobacterium avium complex (MAC)
  - Cryptosporidium
- Idiopathic ulcerations
- Neoplasm
  - Kaposi’s sarcoma
  - Lymphoma
- Non-AIDS esophageal disease
  - Gastroesophageal reflux
Suspect dysphasia when

- Food refusal
- Posturing when feeling
- Crying and pain with feeding
- Pooling of liquid and liquid coming through nose in small infants
- Ulcers, herpes or candida in mouth and throat
Approach

- History and clinical assessment should help you ascertain a likely cause
- Treat the likely cause on clinical grounds
- Remember you MUST treat Candida esophagitis with systemic fluconazole
- Barium swallow
- Endoscopy: in small children requires special equipment and skill (rarely available)
Cytomegalovirus (CMV)

- Colitis
- Gastritis
- Hepatitis
- Esophagitis
Liver disease

- Parenchymal
- Biliary
- Mixed
Hepatic Parenchymal Disease

• Infection
  • Viral hepatitis (A, B, C)
  • CMV, HSV, EBV
  • MTB
  • MAC
  • PJP

• Drug-induced
  • Hepatitis
  • Allergic
  • Lactic acidosis

• Neoplasm
  • Lymphoma
  • Kaposi’s sarcoma
Suspect Hepatitis when

- Painful hepatomegaly
- Raised ALT

- Features of hepatic failure ie
  - Bleeding tendency
  - Encephalopathy
  - Hypoglycemia
Biliary Disease: Cholangitis

- HIV related cholicystitis
- Infective
  - Cytomegalovirus
  - Cryptosporidium
  - MAC
  - Microsporidium
  - TB
  - BCG
- Neoplasm
  - Lymphoma
  - Kaposi’s sarcoma
- Obstruction from mass in abdomen
Suspect Biliary disease when

- Increase GGT, ALP
- Obstructive jaundice

- Investigation
  - According to suspicion
  - Imaging – US / CT / MRI
  - ERCP – difficult in small children, has morbidity

- Management
  - Depends on cause
Summary

- Gastrointestinal involvement common in HIV positive children
  - Course more likely prolonged and recurrent
  - Complicated by co-morbidity of malnutrition
  - High mortality if not managed correctly
- The extent of immuno-compromise may help you in making the diagnoses
South to South