TRAVELERS’ DIARRHEA

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Importance of the problem

- Very frequent travel-related illness
- 30-70% of the travelers is affected
- Rate depends on the destination and the season
- TD is a clinical syndrome - caused by different intestinal pathogens,
- Stomach and intestinal infection
- Acute, self-limiting illness; resolves within 3-5 days
- 3-10% of patients with TD: longer than 2 weeks, up to 3%, over 30 days
PATHOGENS

- Bacteria - about 80%, most common
  - E. coli, Campylobacter jejuni, Shigella spp, Salmonella spp

- Viruses - about 10%
  - Norovirus, rotavirus astrovirus etc.

- Protozoon: Giardia

- Cyclospora, cryptosporidium
Occurrence and risk of TD

- Low, intermediate and high risk countries

- Low-risk areas: 2–4% risk of acquiring diarrhea
- Moderate-risk areas: 8–20% risk of acquiring diarrhea
- High-risk areas: 30–50% risk of acquiring diarrhea
Risks in percent

Chance of Getting TD

Recent Travel:
- 1 - 49 visits
- 50 - 100 visits
- 101 - 300 visits
- 301 - 1521 visits
- No Travel

- 4% in certain regions
- 15% in other regions
- 20-45% in some regions
- 50% in specific regions

[Map showing percentage risks worldwide]
Symptoms of Traveler's Diarrhea

- Nausea and vomiting
- Sudden onset of diarrhea
- Bloating
- Cramps
- Urgent need to defecation
- Malaise (weakness or discomfort)
- Explosive and painful gas
- Loss of appetite
PREVENTION OF TD - general

- several approaches can be suggested
- These measures can reduce but not eliminate the risk of TD
- No special vaccination for TD, but:
  - Vaccination for hepatitis A, typhoid and paratyphoid
  - Food and drink/beverages selection
PREVENTION OF TD - non-antimicrobial drugs for profilaxis

- Bismuth subsalicylate (BSS) - can reduce the incidence of TD by 50%, but can cause different adverse effects (nausea, constipation, tinnitus, cannot be used in aspirin allergy and renal insuff; problems with ConMeds: anticoagulants, methotrexat, probenicid, not safe to use >3 weeks, not safe under 12yr)

- Probiotics (Lactobacillus Saccharomyces) - not clear study results

- Bovine colostrum - no enough data
PREVENTION OF TD - antibiotics in profilaxis

- Profilactic antibiotic are effective in prevention of TD (-90%)
- Formerly: doxycyclin, thimethoprim-sulfomethoxazole
- Today:
  - fluorokolinols (but: increasing resistance)
  - Non-absorbable antibiotic - rifaximin - under investigation
- At this time prophylactic antibiotic is not recommended in most cases.
TREATMENT OF TD - antibiotics

- FLUOROKINOLONS: ciprofloxacin, levofloxacin
  - Ciprofloxacin 500mg up to q 12 hours for 3 days (adults) OR
  - Azithromycin 10mg/kg up to 500mg q 24 hrs for up to 3 days (peds and adults) OR
  - Azithromycin 1000mg all at once (adults, study result)
- Another option: Rifaximin 200mg tid for 3 days (approved for non-invasive strains of E. coli, difficult to distinguish invasive/non-invasive)
TREATMENT OF TD - antimotility agents

- Provide symptomatic relief, by reducing bowel movement frequency
- During waiting the therapeutic effects of antibiotics help to ride on bus/airplane etc.
- BUT not generally recommended! (in bloody diarrhea and fever)
- Loperamid, dyphenoxylicate
TREATMENT OF TD - rehydration

- Fluid and electrolyte replacement
- Helps to feel better
- Oral rehydration solution (ORS) - salty, unpalatable but very useful
- Avoid too sweet drinks - can cause osmotic diarrhea
TREATMENT OF TD
- treatment against protozoa

- *Giardia intestinalis* - most common
- Metronidazole, tinidazol, nitrazoxanide
- Dasa
- *Criptosporidiosis* - nitrazoxamide
- *Cyclosporiasis* - trimethoprim-sulfamethoxazole
- *Amebiasis* - metronidazol or tinidazole
TREATMENT OF TD - in children

- Older children and teenagers - similars to treatment of adults
  - Macrolids (azitromycin) is the first-line treatment.
  - Fluroquinolons are off-label
  - Rifaximin is approved for children aged >12yrs

- Infants and younger children
  - High risk of dehydration - to treat
  - To continue breastfeeding, and bottle-fed formulas
  - Infants in diapers - developing eczematous rash
Persistent (≥14 days) GI symptoms

It is not uncommon

Usual pathogenesis

- Persistent infection or co-infection (second organism is not targeted the initial therapy)
- Previously undiagnosed GI disease (unmasked by the enteric infection)
- Postinfectious phenomenon

Evaluation: several stool examination, investigation of suspected underlying GI disease, endoscopy