Approach To The Patient with Chronic Diarrhea

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Chronic Diarrhea

• Definition

• “Old” sub-types
  – Osmotic, secretory, motility, inflammatory

• “New” Subtypes
  – Inflammatory, Fatty, and Watery

• General Approach
Diarrhea
Advances over the last 100 years
Chronic Diarrhea

• Definition
  – Subjective - >3 BMs per day
  – Objective - >200-300 gms of stool per day
  – Complaint of Liquidity
  – Chronic > 4 weeks
Chronic Diarrhea

Think about IBS and lactose intolerance!!
“Old” Sub-types of Diarrhea

- Osmotic
- Secretory
- Motility Induced
- Inflammatory

Diarrhea..Cha-cha-cha
Osmotic Diarrhea

- **Mechanism** –
  - Unusually large amounts of poorly absorbed osmotically active solutes
  - Usually Ingested
    - Carbohydrates
    - Laxatives
Osmotic Diarrhea

- Lactose - Dairy products
- Sorbitol - Sugar free gum, fruits
- Fructose - Soft drinks, fruit
- Magnesium - Antacids
- Laxatives - Citrate, NaSulfate
Osmotic Diarrhea

- History –
  - Ingestions
    - Laxatives
    - Unabsorbed Carbohydrates
    - Magnesium containing products
Osmotic Diarrhea

- History –
  - Can be *watery* or loose.
  - No blood, Minimal cramping, No fevers
  - Diarrhea stops when patient fasts!
  - Stool analysis
    - Osmotic gap > 125

\[ 290 - 2([\text{Na}^+] + [\text{K}^+]) = ?? \]
Osmotic Diarrhea

• Work-up
  – Order stool lytes (Na+ and K+) and stool osmolality and pH
  – HISTORY!!!!
    • Specifically ask about ingestions

Melanosis Coli
Secretory Diarrhea

- Much Bigger group and more complex
- Defects in ion absorptive process
  - Cl-/HCO3- exchange
  - NA+/H+ exchange
  - Abnormal mediators – cAMP, cGMP etc
Secretory Diarrhea

• History –
  – More difficult – but is usually WATERY
  – Non-bloody, persistent during fast
    • ….but not always – malabsorptive subtype (FA’s etc)
  – Non-cramping
Chronic Secretory Diarrhea

- Villous adenoma
- Carcinoid tumor
- Medullary thyroid CA
- Zollinger-Ellison syndrome
- VIPoma
- Lymphocytic colitis

- Bile acid malabsorption
- Stimulant laxatives
- Sprue
- Intestinal lymphoma
- Hyperthyroidism
- Collagenous colitis
Dysmotility Induced Diarrhea

• *Rapid* transit leads to decreased absorption

• *Slowed* transit leads to bacterial overgrowth
Dysmotility Induced Diarrhea

- Irritable bowel syndrome
- Carcinoid syndrome
- Resection of the ileocecal valve
- Hyperthyroidism
- Post gastrectomy syndromes
Fatty Diarrhea

- Malabsorption – secondary to pancreatic disease, Bacterial overgrowth, Sprue and occasionally parasites
- Greasy, floating stools
- Measure 24 hour fecal fat
  - > 5g per day = fat malabsorption
  - Trial of Panc enzymes, measure TTG
Inflammatory Diarrhea

• Inflammation and ulceration compromises the mucosal barrier
• Mucous, protein, blood are released into the lumen
• Absorption is diminished
Ulcerative Colitis

• Inflammatory bowel disease

• Celiac Sprue?

• Chronic infections
  – Amoeba
  – C. Difficile, aeromonas,
  – Other parasites
  – HIV, CMV, TB,

Inflammatory Diarrhea

Ulcerative Colitis
Inflammatory Diarrhea

• History
  – Bloody diarrhea
  – Tenesmus, and cramping
  – Fevers, malaise, weight loss etc
  – May have FMHx of IBD
  – Travel?
“New” Sub-types

• **Inflammatory** — IBD, parasitic infections, fungal, TB, viral, Sprue(?), rare bacteria

• **Watery** — Secretory, osmotic and some motility types

• **Fatty** - Pancreatic insufficiency, sprue, bacterial overgrowth, large small bowel resections
Chronic Diarrhea

Think about IBS and lactose intolerance!!
• Yes that’s right *constipation*!
  – “Overflow” diarrhea
  – Extremely common!
  – Check KUB!!
  – Often in elderly with fecal incontinence
  – Think fiber
General Approach

• History
  – Is diarrhea inflammatory, watery or fatty?
  – Try to determine obvious associations
    • Foods (lactose!), candies, medications, travel,
    • Recent chole?
  – There may be an immediately obvious cause
  – Constipation?
History

- Describe diarrhea
- Onset?
- Pattern
  - Continuous or intermittent
- Associations
  - Travel, food (specifics)
  - Stress, meds,
- Weight loss? Abd pain?
- Night time symptoms?
- Fmhx –
  - IBD, IBS, other?
- Other medical conditions?
  - Thyroid, DM, Collagen vascular, associated meds???
Physical Examination

• Vital Signs, general appearance
• Abdomen – tenderness, masses, organomegally
• Rectal exam – Sphincter tone and squeeze
• Skin – rashes, flushing,
• Thyroid mass??
• Edema?
Initial Work Up

- Again, address any obvious causes
- Somewhat different then a GI approach
- Initial labs
  - CBC, Chemistry,
  - Stool analysis
    - Wt., Na+, K+, osm, pH, Fat assessment (sudan), O&P, C Diff. stool cx? WBC?
Work up

- Can categorize into sub groups at this point
  - Inflammatory vs Watery vs Fatty
- Other modalities to evaluate
  - Stool elastase, TTG, Anti-EMA
  - Colonoscopy/FS and EGD with SB biopsy
  - CT Scan, SBFT etc
When to Refer?

- **Inflammatory**
  - Refer to GI
  - Unless infectious

- **Watery**
  - Await labs

- **Fatty**
  - Refer to GI

**Secretory?**
- Infectious?—Treat
- IBS?? Consider Tx??
- Otherwise refer to GI

**Osmotic?**
- Stop offending agent?
Inflammatory Diarrhea

Consider early referral to GI

- Exclude structural disease
  - Small-bowel radiographs
  - Sigmoidoscopy or colonoscopy with biopsy
- Exclude infection
  - Bacterial pathogens
    - "Standard" Aeromonas
    - Plesiomonas
    - Tuberculosis
  - Other pathogens
    - Parasites
    - Viruses
    - O&P
    - HIV

Fatty Diarrhea

- Exclude structural disease
  - Small-bowel radiographs
  - CT scan of abdomen
  - Small-bowel biopsy and aspirate for quantitative culture

- Exclude pancreatic exocrine insufficiency
  - Secretin test
  - Bentiomide test
  - Stool chymotrypsin activity

EGD Vs ABX
Watery Diarrhea

Osmotic

Consider Lactose Intolerance

< 5.3

Low pH
Carbohydrate malabsorption

High Mg output
Inadvertent ingestion
Laxative abuse

Dietary review
Breath H₂ test (lactose)
Lactase assay

Watery Diarrhea

Secretory
Chronic Diarrhea

Don’t forget to consider fecal incontinence!

And Constipation

Strongly consider *IBS* and going with minimal work-up.
History
Localizing the source

Small bowel source

- Large volume
- Steatorrhea
- No blood
- No tenesmus
- Peri-umbilical pain

Colonic source

- Small volume
- No steatorrhea
- Bloody
- Tenesmus
- Lower quadrant pain
Questions?