Constipation

GI Update 2014

Faculty/Presenter Disclosure Slide

- Faculty: Amy Morse
- Relationships with commercial interest 2013/14:
- **Relationships with commercial interests:**
  - **Grants/Research Support:** Therapeutic Fellowship funded by Olympus, Pentax and CIHR (2010/11)
  - **Speakers Bureau/Honoraria:** Takeda (2012)
  - **Consulting Fees:** Advisory Board, Shire (2013)
  - **Other: Janssen, ECCO 2014**

Objectives

- What is stool, how is it formed, how does it get eliminated
- Overview of what I do in my bowel history
- Review a few cases

What is stool?

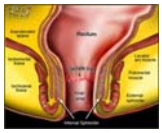
- 1500 cc of ileal effluent → 200-400 cc stool
- Colon
  - mixes contents
  - propels stool aborally/forward and
  - resorbs water, some electrolytes and SCFA
- Liquid to solid
- Stool itself
  - 75 percent water
  - 25 percent solid matter.
    - 30% bacteria
    - 30% indigestable matterial
    - 10-20% percent is cholesterol and other fats;
    - 10 to 20% percent is inorganic substances
    - 2 to 3 percent is protein.
    - Cell debris shed from the mucous membrane of the intestinal tract also passes in the waste material, as do bile pigments (bilirubin)
  - The brown color of feces is due to the action of bacteria on bilirubin
  - The odor of feces is caused by chemical produced by bacterial action (e.g., hydrogen sulfide)

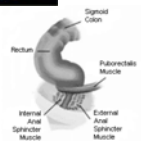
How does the colon move stool?

- Colon movement changes in the preparatory stage before defection
- Predefecatory
  - Increase in propagating pressure waves
  - Start proximal colon initially, then start a bit more distally (not felt)
  - 15 min before defecation marked increase in frequency and amplitude of these impulses → fill the rectum and give defecatory urge (sacral spinal afferent mechanoreceptors)

Anorectal Anatomy

- Puborectalis sling and levator ani muscles
- Internal sphincter
  - Involuntary
  - Normal state high tone
- External sphincter
  - Voluntary
  - High resting tone, but this can voluntarily be overcome





What happens when stool enters rectum?? Short term storage

- Inhibitory reflex activated
  - internal sphincter relaxes
  - External contracts

  This allows small amount of stool to enter the anal canal with maintenance of continence

What when the rectum fills?

- Larger amt stool in rectum → Longer internal sphincter relaxation which person notices
- Voluntary contraction of external till can find place to defecate
- At defecation the straining and sit/squat allow pelvis to descend, the puborectalis contracts BOTH these increase the rectoanal angle allowing stool to move out and be expelled when the external sphincter relaxed

What happens when you "hold it" or why can't some people??

- Usually rectum empty
- Can store stool till appropriate to defecate
- Over compliance of rectum (megarectum) gives less urge to defecate
- Under compliance (stiff) rectum (e.g., radiation injury, proctitis) more frequent urge

What is Constipation

- Infrequent stools (> every 3 days)
- Straining
- Unsatisfying BM (eg, small round marbles several times per day)

- Have to clarify what pt is experiencing
- Change from a previous pattern

Stool History

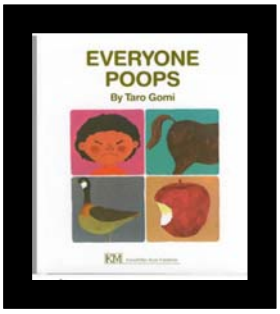
Avoiders or proclaimers

Type of stool

Measures being used to promote stool

Worrisome features

Blood, anemia, wt change, family history, incontinence, unexplained change, mass



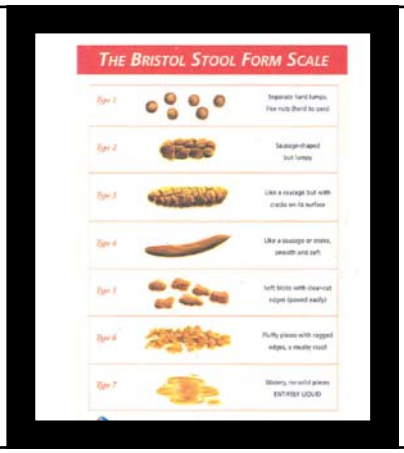
Type of Stools

Frequency
- 3/day to every 3 days
- Duration of pattern

Consistency
- Liquid
- Semi formed
- Formed – I piece
- Formed – pieces or cracks

Shape
Narrow caliber

Persistent vs intermittent



Physical Exam

- Abdominal exam for masses
- Rectal exam
  - Tone
  - Sensation
  - Masses

Causes of Constipation

- Stool consistency – diet
- Metabolic – DM, hypercalcemia, celiac
- Medications – narcotic
- Structural – mass, stricture
- Defecatory dysfunction – dysynergic defecation (sqeeze when trying to push), megarectum,
- Nerve problems: MS, spinal injury Hirshprung's

Management

- Treat reversible causes
  - E.g., stop narcotic, correct Ca, gluten free diet if celiac, surgery for cancer/stricture…

Types of Laxatives

- Bulk
- Surfactant
- Osmotic
- Stimulant
- Enterokinetic
- Other

Bulk

- Fibre – diet about 30g per day
  - Fibre score card
- Psyllium, methylcellulose, inulin

Surfactants

- Docusate
- Lower surface tension of stool allow H20 in
- Little evidence

Osmotic

- PEG3350
  - Start 17g per day titrate up to 34g per day
  - Dissolves well little taste
  - Can add stimulant q3rd day if needed
- Synthetic disaccharide –
  - e.g., lactulose,
  - not digested by intestinal enzymes, remains in lumen keeps water and electrolytes with it
  - bacteria digest – GAS!
- Saline based – hypersomolar often with Mg

Stimulants vs Enterokinetic

Stimulant

- Bisacodyl, senna
- Cause spasm of bowel eventually stool forced forward in non-peristaltic fashion

Enterokinetic agents

- Promote more peristalic contractions of bowel
- Prucalopride
  - 5HT4 agonist
  - 1-4g per day superior to placebo in for number of spontaneous BMs and quality of life
  - Cost!
  - Reserve for severe cases

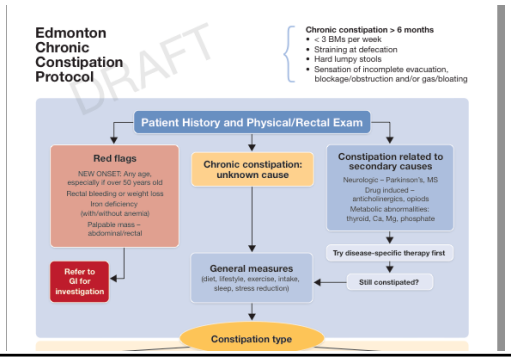
Other

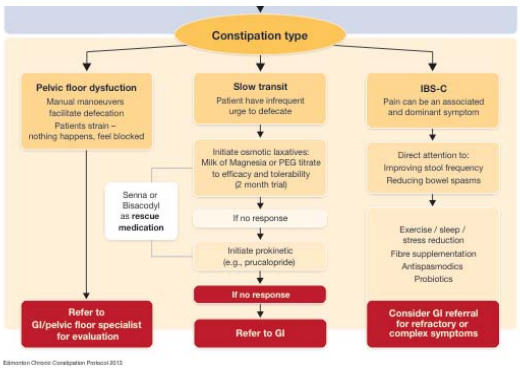
- **Lubiprostone** (USA) locally acting Cl channel activator has more Cl in lumen
- **Linaclotide** peptide agonist of the guanylate cyclase-C receptor that stimulates intestinal fluid secretion and transit
- **Misoprostol** prostaglandin analog which has been used successfully to treat some patients with severe sx
- **Colchicine** 1 mg per day, can cause myopathy, don't use if renal failure

Other Management

- Biofeedback
  - used to correct inappropriate contraction of the pelvic floor muscles and external anal sphincter during defecation in patients with defecatory dysfunction such as dyssynergic defecation
- Retraining
  - Megarectum – use osmotic laxative regularly, add 20min of peaceful toliet time per day, suppository q 3 days (mineral oil, bisacodyl, microfleet)
- Surgery
  - Rectoceol
  - Instussception
  - Colectomy in severe cases
    - Slow transit with disabling symptoms refractory to medical therapy
    - Hirsprung's

Constipation Protocol





Case One:

- 23 yo male worried c/o diarrhea and cramps for 3 months
- Otherwise well
- Just moved from home, living alone

Stool history

- 5 BM per day
- Formed round balls
- No blood
- Strains
- Before one per day, no staining

O/E: abdomen soft

- Eating 2 meals per day in dorm
- Breakfast – None
- Lunch – apple, crackers
- Supper – take-away
- Water intake ok 8 glasses liquid/day
- (Maybe 8 grams per day)

- Before at home – mom or dad cooked
  - Breakfast – daily cereal
  - Lunch sandwich (whole grain), fruit or veg and granola
  - Supper – meat, starch and cooked veg plus salad
  - Snacks –cookies or fruit
- (Closer to goal of 30g per day)

Case 1

- Constipated stools at increased frequency
- Increased fibre for 2 days, felt worse stopped and is back
- You Suggest – 1 – 2 days of laxative while increasing fibre, will take some time to reset
- 2 months later: pts BM back at baseline to normal, cramps better
- Pts often think it's the number of stools that make diarrhea – its actually the volume (>500cc) and consistency that worry us!

Case 2

60 year old male complains of constipation

- New, thin bowel movements daily or EOD
- No change in diet or meds
- **New blood**, no pain
- Adopted
- CBC normal, FOBT/FIT (NA sees blood), **DRE mass in posterior rectum**
- Urgent GI referral made for mass in rectum → Has stage 2 rectal cancer treated with APR.
- A rectal exam plus a clear documentation of the bleeding helps get an appropriately expedited GI referral

Case 3

- 40 year old woman
- C/o constipation, very frustrated, going on "forever"

BM: Formed, one smooth piece, no blood, spontaneous, EOD, duration since at least Jr High School

Advise –reassure normal BM

Key Points

- Some people are reluctant to talk about BM, they will need more prodding
  - Diagrams help me a lot
  - EVERYBODY POOPS!!!
- Blood or no blood
- Specifically ask about incontinence and digital maneuvers (pts often don't volunteer)
- Not all frequent BM's are diarrhea
- Not all people go to bathroom everyday