Constipation Management
2015

When Fiber is Not Enough
Prevalence Across Lifespan

- General prevalence persistent constipation as high as 25% (33% in adults >65 years of age)*
- 5 – 10% among children**
- Relationship to urologic issues
- Impact on quality of life


“Normal” Bowel Function

- No precise definition
- General: regular elimination of stool without pain, straining, manual maneuvers, or feelings of incomplete emptying
- “Normal” frequency variable
Normal Bowel Function

- **Contributing Factors**
  - **Colonic motility** (stool consistency)
    - Enteric nervous system (responds to stretch and intraluminal irritants)
    - Autonomic nervous system (parasympathetic stimulation increases motility)
    - Levels of neurotransmitters
    - GI microbiota
  - Normal transit time <72 hours: adults

Normal Bowel Function

**Contributing Factors**

- Sensory awareness rectal filling
- Sphincter function and ability to coordinate abdominal muscle contraction (Valsalva) with pelvic floor/anal sphincter relaxation
- Posture for defecation (squatting position straightens anorectal angle to facilitate stool elimination)
Constipation

- Rome III Definition Functional Constipation
  - > Two of the following > 25% of time for at least 3 months with onset at least 6 months prior to dx
    - Straining to eliminate stool
    - Lumpy or hard stools
    - Sensation of incomplete emptying
    - Sensation of anorectal obstruction
    - Manual maneuvers to facilitate elimination (perineal “splinting”, fingers in vagina, digital removal)

Constipation

- “Real world definition”: difficult defecation characterized by any of the following:
  - Hard or dry stools
  - Reduced frequency of bowel movements*
  - Sensation incomplete emptying
  - Pain or straining with defecation

*As compared to patient’s “normal” frequency vs < 3 bowel movements/week (National Digestive Disease Information Clearinghouse, 2013)
Actual vs Perceived Constipation

- Constipation: actual problem with stool elimination
- Perceived constipation: perception that there is a problem when in fact bowel function is normal
  - Contributing beliefs
  - Implications for patient education
- “At risk” for constipation also recognized diagnosis
  - Populations at risk
  - Implications for nursing intervention

Risk Factors for Constipation

- Gender (females higher risk) (M)
- Age (elderly higher risk) (M)
- Neurologic conditions affecting innervation to colon/levels of neurotransmitters (M)
- Medications (opioids, anticholinergics, calcium channel blockers) (M)
- Inadequate fiber and fluid intake (M)
- Inactivity (M)
- Psychological issues/sexual abuse
Constipation

Types

- Simple (transient) constipation
- Functional constipation (chronic constipation with no defined structural abnormality)
  - Normal Transit (50%)
  - Slow Transit (STC)
- IBS-C
- Obstructed (Dyssynergic) Defecation (DD)
- Combined Problems (STC + DD)
- Encopresis in children

Normal Transit Constipation

- Colonic function normal: high voltage propulsive contractions in response to colonic distention, eating, caffeine
- Causative Factors:
  - Inadequate fiber & fluid (small dry stools)
  - Inactivity
  - Medications
  - Poor toileting habits

Normal Transit Constipation

- **Signs/Symptoms**
  - Hard pellet-like stools 2 – 3x/wk (optimal stool size seems to be about 2 cm diameter)
  - May c/o straining, bloating, abdominal discomfort

- **Diagnosis:** *History* + PE

- **Management**
  - Cleanout if needed
  - Elimination constipating meds
  - Education and behavioral therapy
  - Laxatives “PRN”
Slow Transit Constipation

- **Pathology**
  - Reduced peristaltic activity
  - Reduced response to eating, caffeine, distention

- **S/S**:
  - Stool frequency 1 – 4 x/month (very large stools)
  - Severe distention/bloating
  - Lack of fecal urgency common (stool in proximal colon)
  - Poor response to fiber
Slow Transit Functional Constipation

- **Dx:** History + PE + colonic transit study
- **Management**
  - Stool softeners (anecdotal evidence only)
  - Laxatives (osmotic agents + stimulants)
  - Targeted medications
- **Surgical intervention if inadequate response to medical management**
Irritable-Bowel Syndrome: Constipation Predominant

- Recurrent abdominal **pain/discomfort** associated with:
  - change in frequency and consistency of stools, i.e., hard or lumpy stools
  - reduced pain/discomfort following defecation
- Extraintestinal symptoms common
- Pathology unclear
- Diagnosis: History & PE (additional workup required only for “alarm symptoms”)

/ Image 36x36 to 576x756/
IBS-Constipation Predominant

- Treatment
  - Education and reassurance
  - Increase in dietary fiber (studies show positive response to psyllium)
  - Osmotic laxatives as needed
  - Selected promotility medications
Obstructed Defecation Disorders (Dyssynergic Defecation)

- Pathology: difficulty eliminating stool from rectum (even if stool consistency normal)
- Causative factors:
  - Pelvic floor dyssynergia
  - Rectocele
  - Perineal descent
- Many also have STC (tx of STC may resolve DD)
Obstructed Defecation

 Signs/Symptoms
   Excessive straining
   Feelings incomplete emptying
   Need for manual maneuvers
 Diagnosis
   History and anorectal exam
   Balloon expulsion test; defecography
 Tx: dependent on cause (biofeedback, Botox, etc)
**Encopresis**

- Retentive encopresis most common type

**Pathology**

- Subconscious withholding of stool
- Chronic rectal distention
- Loss of sensory awareness impending defecation
- Chronic relaxation internal sphincter
- Leakage around fecal bolus and large stools that are painful to pass
Encopresis

- Severe impact on QoL & family relationships
- Diagnosis
  - History and physical exam
  - X-rays; other studies as needed
- Management
  - Education and counseling
  - Cleanout using structured program
  - Bowel program: fiber and fluid; routine toileting; laxatives
Assessment Pt with “Constipation”

🌟 Patient interview
- “Normal” pattern stool elimination for him/her
- Current stool frequency, volume, consistency*; problems related to defecation (e.g., straining)
- Current management (laxatives, enemas, manual maneuvers, etc.)
- Current activity level, fiber/fluid intake
- Rx and OTC meds
- Medical-surgical history

*Use objective tool such as Bristol Stool Scale
**Bristol Stool Scale**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Separate hard lumps</td>
<td>Very constipated</td>
</tr>
<tr>
<td>Type 2</td>
<td>Lumpy and sausage like</td>
<td>Slightly constipated</td>
</tr>
<tr>
<td>Type 3</td>
<td>A sausage shape with cracks in the surface</td>
<td>Normal</td>
</tr>
<tr>
<td>Type 4</td>
<td>Like a smooth, soft sausage or snake</td>
<td>Normal</td>
</tr>
<tr>
<td>Type 5</td>
<td>Soft blobs with clear-cut edges</td>
<td>Lacking fibre</td>
</tr>
<tr>
<td>Type 6</td>
<td>Mushy consistency with ragged edges</td>
<td>Inflammation</td>
</tr>
<tr>
<td>Type 7</td>
<td>Liquid consistency with no solid pieces</td>
<td>Inflammation</td>
</tr>
</tbody>
</table>
Assessment Pt with Constipation

- Physical Exam
  - Abdominal exam to R/O colonic distention
  - Anorectal exam
    - ability to relax sphincter and to coordinate sphincter relaxation with Valsalva
    - Any evidence perineal descent or rectocele (pelvic exam and/or referral)
    - Retained stool

- Bowel Chart
Indications for Additional Studies

- Indicators slow transit functional constipation: transit time studies
- Indicators dyssynergic defecation
  - Balloon expulsion test
  - Defecography
Management Pathway: “Cleanout” if Needed

- **Indications:** “Loaded colon”
- **Options:** Top Down vs Bottom Up
  - “Top down” usually preferred (e.g., usual laxative nightly till mushy stool or may double “usual” dose)
  - **Bottom up IF:**
    - Patient impacted (can switch to top down when impaction eliminated)
    - No control of sphincter
    - Enemas vs suppositories
Management Pathway: Elimination Impacted Stool

- Gentle digital breakup followed by cleansing enema and oral laxative
- If mass too hard to break up or pass
  - Warm mineral oil enemas x 2 – 3 days followed by digital breakup or
  - “Half and half” milk/molasses given in small amounts/retained for 30 minutes, followed by digital breakup
- Digital removal associated with pain & bleeding and should be considered “last resort”
Management Pathway: Measures to Facilitate Stool Elimination

- **Patient Education**
  - Causes of constipation
  - Impact of fiber and fluid on colonic function
  - Importance prompt response to “urge to go”
  - Correct posture for defecation

Management Pathway: Measures to Improve Motility

- Increase activity as tolerated
- Collaborate with prescribing provider to reduce or eliminate constipating medications
- Assure adequate intake fiber and fluid
Management Pathway: Measures to Improve Motility

- Assure adequate fiber and fluid intake*
  - Women: 25 gms/day
  - Men: 38 gms/day

- Effects
  - Softens stool
  - Increases bulk/stimulates motility
  - Promotes microbial balance (↑ bulk & peristalsis)

- May exacerbate slow transit constipation

Food and Nutrition Board (2005).
Management Pathway: Measures to Improve Motility

- **Types of fiber**
  - Soluble vs insoluble vs mixed
  - Fermentable vs non-fermentable fiber
- **Soluble fiber**
  - Effects: softens stool; promotes microbial balance
  - Dietary sources: oligosaccharides, pectin (e.g., fruits and vegetables)
  - Fiber supplements: Fiber Choice; Benefiber; psyllium* (Metamucil; Fiberall)

*Psyllium supplements produce less gas than Fiber Choice or Benefiber d/t ↓ fermentation in gut
Management Pathway: Measures to Improve Motility

● Insoluble Fiber
  ● Primary effects: Increased bulk/motility
  ● Dietary sources: wheat bran, flax seed, whole grain cereals, vegetables, nuts, seeds, peels
  ● Fiber supplements: Methylcellulose* (Citrucel)

*Non-fermentable so much lower gas production
Management Pathway: Measures to Improve Motility

- Hi-fiber foods:
  - Fiber One (27 g/cup)
  - All-Bran (27 g/cup)
  - Beans & lentils (4.5 – 7.5 g/half cup)
  - Prunes (7 g/half cup)
  - Dried fruit (10): 6-12g
  - Coconut milk: 5 g/cup
  - Nuts: 5-7 g/half cup
Management Pathway: Measures to Improve Motility

- Fiber options for those who can’t take in enough high fiber foods
  - Bran mixture
    - 1 cup bran, 1 cup applesauce, ¼ cup prune juice
    - 2 – 4 tbsp/day
  - OTC Fiber supplements
    - Benefiber/Fiberchoice
    - Psyllium
    - Citrucel
Management Pathway: Measures to Improve Motility

- General Guidelines for Fiber Therapy (Supplements)
  - Assure adequate fluid intake
  - Explain titration
  - Explain potential gas initially (less of a problem with less fermentable fibers)

- Poor response: refer for workup

- Patient on fluid restriction: fiber supplements usually contraindicated (dietary sources better)
Management Pathway: Measures to Improve Motility

What About Stool Softeners?

- Widely used
- Supposed mechanism of action
  - Reduced surface tension of stool promoting water absorption
  - No impact on motility
- Reality: no evidence of effectiveness/fiber a better choice!

Management Pathway: Measures to Improve Motility

- What About Probiotics?
  - Systematic review 11 RCTs: reduced ITT (bifidobacterium most commonly used probiotic)
  - More study needed to determine “best bugs” and critical dosage levels
  - Preliminary study suggests possible role for novel agents (Prevotella?)

Management Special Populations: OIC

- Opioid-induced constipation
  - Opioid antagonists
    - MethylNaltrexone (effective but expensive; given subcu)
    - New agents now available or being investigated (e.g., naloxone; naloxogel)
    - Combination drugs now available (e.g., oxycodone + naloxone prolonged-release)
  - Bowel program (routine use of laxatives)

Management Special Populations: Slow Transit Constipation (STC)

- Stool softeners (?): anecdotal evidence only (never solo tx)
- Osmotic agents on routine basis (e.g., PEG)
- Stimulant agents PRN
- Targeted meds
  - Lubiprostone
  - Linaclotide
  - Prucalopride
Management STC: Laxative Hierarchy

- **Fiber if Tolerated** (start low and go slow)
- **Osmotic Agents**
  - Safe for repetitive use
  - Polyethylene glycol, magnesium, sorbitol, lactulose, etc
- **Stimulants**
  - PRN use
  - Dulcolax and Senna
Management STC: Osmotic Laxatives

- “Work” by pulling water into lumen of gut; distends bowel and stimulates peristalsis
- Many are saline or saccharide based so must consider comorbidities
- Generally safe for repetitive use
- Polyethylene glycol particularly effective in multiple studies

Management STC: Stimulant Laxatives

- Stimulate peristalsis through direct action on nerve pathways in bowel wall
- Two major types
  - Senna compounds
  - Bisacodyl
- Generally recommended for PRN use only but may need routine use in patient with STC

Management STC: Targeted Therapies

- **Targeted Promotility Medications**
  - C-2 chloride channel activator: lubiprostone (Amitiza): enhanced intestinal secretion
  - Guanylate cyclase agonist (linaclotide): enhanced intestinal secretion
  - SSRIs/SNSRIs? (increased serotonin levels)
  - Prucalopride (serotonin 5HT4 agonist) with greater GI specificity – no apparent cardiac risks)

- **Vibrating capsule?**

Management STC: Surgical Options

- Sacral Nerve Stimulation (effective in about 1/3 of patients)
- Colon resection
- ACE Procedure
Mgmt Obstructed Defecation

- Defecography to determine specific problem
- Dyssynergia: education; biofeedback; Botox for pelvic floor muscles
- Rectocele: pessary vs. surgery
Encopresis

- Management
  - Education for child and parents
  - Disimpaction (polyethylene glycol vs mineral oil)
  - Establishment bowel program
    - Routine toileting after meals
    - Fiber (age in years + 5 = gm/day) + fluid
    - Laxatives to maintain soft stool and regular evacuation
Summary

- H & P to determine type
- Behavioral therapy 1st line
  - Patient education
  - Elimination constipating meds
  - Fiber and fluid
- STC: medications vs surgery
- DD: biofeedback vs Botox
- Encopresis: behavioral + meds