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Diagnosis & Management of Chronic Constipation & Dyssynergic Defecation – A Stepwise Approach

Amy Kassebaum-Ladewski, PA-C, MMS, RD
Northwestern Memorial Digestive Health Center
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Amy Kassebaum-Ladewski, PA-C, MMS, RD
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Speakers Bureau: Salix, Clinical Area – CIC/IBS
Mechanisms, Evaluation, and Management of Chronic Constipation

Adil E. Bharucha1 and Brian E. Lacy2

1Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota and 2Division of Gastroenterology and Hepatology, Mayo Clinic, Jacksonville, Florida

With a worldwide prevalence of 15%, chronic constipation is one of the most frequent gastrointestinal diagnoses made in ambulatory medicine clinics, and is a common source for referrals to gastroenterologists and colorectal surgeons in the United States. Symptoms vary among patients: straining, incomplete evacuation, and a sense of anorectal blockage are just as important as decreased stool frequency. Chronic constipation is either a primary disorder (such as normal transit, slow transit, or defecatory disorders) or a secondary one (due to medications or, in rare cases, anatomic alterations). Colonic sensorimotor disturbances and pelvic floor dysfunction (such as defecatory disorders) are the most widely recognized pathogenic mechanisms. Guided by efficacy and cost, management of constipation should begin with dietary fiber supplementation and stimulant and/or osmotic laxatives, as appropriate, followed, if necessary, by intestinal secretagogues.
Overview

- Chronic constipation is extremely common
  - 16% of US adults\(^1\)
  - 33% in adults >60 yrs\(^1\)
- Problem
  - Despite how common it is, there is still confusion and inconsistencies in clinical practice on how to approach the diagnosis and management
- Objectives
  - Review a logical algorithmic approach to diagnosis and management of chronic constipation
  - Discuss practical treatment options for the laxative naïve and laxative refractory patient

# Overview of the Stepwise Approach

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<th>Step</th>
<th>Approach to Diagnosis and Management of Chronic Constipation</th>
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<td>2</td>
<td>Management of constipation for the laxative naïve patient</td>
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<td>3</td>
<td>Optimization of laxative therapy</td>
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<td>Evaluate for a FDD</td>
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<td>5</td>
<td>Address refractory constipation</td>
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<tr>
<td>6</td>
<td>Refer to colorectal surgery</td>
</tr>
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</table>
Step 1: Defining and Diagnosing Constipation

Patient with chronic constipation

Laboratory tests and structural evaluation as appropriate

Supplement dietary fiber intake and/or use OTC laxatives; education, routine toileting

Did symptoms improve?

Normal

Anorectal manometry
Balloon expulsion test

Abnormal

Defecatory disorder

Inconclusive

Defecography

Pelvic floor biofeedback therapy

Defecography

Did symptoms improve?

Normal

Abnormal

Consider
- Defecography if not performed
- Suppositories or enemas
- Loop ileostomy
- Rectal suspension or rectovaginal repair for rectal prolapse or rectocele

Continue treatment plan

No

Assess colonic transit

Normal

Abnormal

Consider
- Alternative medications
- Colonic motility study

Slow transit constipation

Prokinetic agents, colectomy, loop ileostomy
Step 1: Evaluation of Constipation

- Identify secondary causes of constipation
  - Medications, medical conditions (ex: DM, hypothyroidism, scleroderma, SCI), anatomical (ex: malignancy, stricture, fissure, prolapse)
- Rule out alarm features
- Up-to-date CBC
- Colonoscopy ONLY IF patient has alarm S/S or is due for age-appropriate screening/surveillance

Perianal and Digital Rectal Exam
- Assess for structural disorders
- Assess for a FDD
  - Increased resting tone, paradoxical contraction of the external anal sphincter upon bearing down, inability to expel finger with valsalva
  - DREs identified patients with dyssynergia with 75% sensitivity and 87% specificity compared to manometry, and 80% and 56%, respectively, compared to the BET
  - Patients w/ persistent symptoms & normal findings from a DRE should still be referred for anorectal testing to exclude a FDD

In the absence of warning signs, patients should receive a diagnosis of CIC
### Step 1: Defining Chronic Constipation

**Rome IV Classification**

- **Functional Constipation (FC)**
  - AKA: Chronic Idiopathic Constipation (CIC)
- **Irritable bowel syndrome with constipation (IBS-C)**
- **Functional defecatory disorders (FDDs)**
  - Dyssynergic defecation
  - Inadequate defecatory propulsion
- **Opioid Induced Constipation (OIC)**

**AGA Classification of CIC**

- **Normal Transit Constipation (NTC)**
- **Slow Transit Constipation (STC)**
- **FDDs**
- **Combined Disorders**
  - Ex: STC +FDD
## Step 1: Rome IV Criteria

<table>
<thead>
<tr>
<th>Rome IV Criteria FC (CIC)</th>
<th>Rome IV Criteria IBS-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constipation for ≥ 3 mo with onset ≥ 6 mo</td>
<td>Recurrent abdominal pain, on average, ≥ 1 day per week in the last 3 months, associated with ≥ 2 of the following:</td>
</tr>
<tr>
<td>Must have ≥ 2 of the following:</td>
<td>• Related to defecation</td>
</tr>
<tr>
<td>(at least 25% of defecations)</td>
<td>• Change in frequency of stool</td>
</tr>
<tr>
<td>• Straining</td>
<td>• Change in form (appearance) of stool</td>
</tr>
<tr>
<td>• Lumpy or hard stools (Bristol 1-2)</td>
<td>AND: &gt;25% of BMs w/ Bristol 1-2 and &lt;25% of BMs w/ Bristol 6-7</td>
</tr>
<tr>
<td>• Sensation of incomplete evacuation</td>
<td>Criteria should be fulfilled for the last 3 months with symptom onset ≥ 6 months before the diagnosis</td>
</tr>
<tr>
<td>• Sensation of anorectal obstruction/blockage</td>
<td>“Real world” FC (CIC) and IBS-C likely appear along a spectrum</td>
</tr>
<tr>
<td>• Manual maneuvers to facilitate defecation (digital evacuation, splinting, pelvic floor support)</td>
<td></td>
</tr>
<tr>
<td>• &lt; 3 spontaneous bowel movements per week</td>
<td></td>
</tr>
<tr>
<td>Loose stools rarely present without use of laxatives</td>
<td></td>
</tr>
<tr>
<td>Does not meet criteria for IBS-C</td>
<td></td>
</tr>
</tbody>
</table>

Step 2: Management of constipation for the Laxative Naïve Patient

- Patient with chronic constipation
  - Laboratory tests and structural evaluation as appropriate
    - Supplement dietary fiber intake and/or use OTC laxatives; education, routine toileting
      - Did symptoms improve?
        - Yes: Continue treatment plan
        - No: Anorectal manometry
          - Balloon expulsion test
            - Normal: Treat with secretagogue or prokinetic agent
              - Continue therapy
                - Did symptoms improve?
                  - Yes: Assess colonic transit
                    - Slow: Slow transit constipation
                      - Prokinetic agents, colectomy, loop ileostomy
                    - Normal: Consider
                      - Alternative medications
                      - Colonic motility study
            - Inconclusive: Defecography
              - Normal: Assess colonic transit
                - Slow: Slow transit constipation
                  - Prokinetic agents, colectomy, loop ileostomy
                - Normal: Consider
                  - Defecography if not performed
                  - Suppositories or enemas
                  - Loop ileostomy
                  - Rectal suspension or rectovaginal repair for rectal prolapse or rectocele
              - Abnormal: Pelvic floor biofeedback therapy
                - Did symptoms improve?
                  - Yes: Continue treatment plan
                  - No: Defecatory disorder
        - Abnormal: Defecatory disorder
## Step 2: Start/Optimize Dietary & OTC Laxative/Fiber Therapies

### Daily Therapies

<table>
<thead>
<tr>
<th>Fiber</th>
<th>25-30 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psyllium</td>
<td>15g = 1 tbsp QD = 5 capsules = 2 wafers slowly increase up to 3x QD as tolerated</td>
</tr>
<tr>
<td>PEG</td>
<td>17 g = 1 capful QD or BID</td>
</tr>
<tr>
<td>MOM</td>
<td>1 oz BID</td>
</tr>
</tbody>
</table>

### Rescue Therapies q 2-3 d

| | Bisacodyl oral |
| | 10 mg = 2 tabs |
| | Bisacodyl suppository |
| | 1 PR |
| | Senna |
| | 2 tabs |
| | Fleet enema PR |
| | Up to 3 at a time |

### Toileting behavior:
- Don’t ignore the urge, after meals (gastrocolic reflex), limit pushing to 5-10 min
- Step stool to elevate knees above hips, lean forward, bulge out abdomen, straighten spine

### Prescription bowel prep
- Magnesium citrate 6-10 oz x 1 (after above therapies fail)
- Last resort!
Step 3: Optimize Laxative Therapy

- Patient with chronic constipation
  - Laboratory tests and structural evaluation as appropriate
  - Supplement dietary fiber intake and/or use OTC laxatives; education, routine toileting
    - Did symptoms improve?
      - Yes: Continue treatment plan
      - No: Treat with secretagogue or prokinetic agent
        - Normal
          - Continue therapy
          - Did symptoms improve?
            - Yes: Continue therapy
            - No: Assess colonic transit
              - Slow
                - Slow transit constipation
                  - Prokinetic agents, colectomy, loop ileostomy
              - Normal
                - Assess defecation and evacuation
                  - Defecography
                    - Normal
                      - Consider:
                        - Alternative medications
                        - Colonic motility study
                      - Continue treatment plan
                    - Abnormal
                      - Did symptoms improve?
                        - Yes: Continue treatment plan
                        - No: Consider:
                          - Defecography if not performed
                          - Suppositories or enemas
                          - Loop ileostomy
                          - Rectal suspension or rectovaginal repair for rectal prolapse or rectocelect
Step 3: Optimize Laxative Therapy vs Proceeding With ARM+BET

<table>
<thead>
<tr>
<th>Consider proceeding with ARM+BET IF:</th>
<th>Risk Factors and Signs/Symptoms of a FDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient has RF or S/S of a FDD</td>
<td>DRE with increased EAS tone, paradoxical contraction upon bearing down, inability to expel finger with valsalva</td>
</tr>
<tr>
<td>And/or</td>
<td>Difficulty with passing soft stools and even enema fluid</td>
</tr>
<tr>
<td>ARM+BET testing is easily accessible</td>
<td>Requires perianal or vaginal pressure (splinting) to evacuate</td>
</tr>
<tr>
<td></td>
<td>Hx of emotional, sexual or physical abuse, PTSD or trauma</td>
</tr>
</tbody>
</table>
Step 3: Indications to Transition From OTC to Rx

- Constipation persistent despite optimized dosing of daily OTC therapy (i.e., PEG BID) + rescue therapy
- Side effects of bloating, cramping and urgency limit use of OTCs
- Administration of OTCs is too difficult to adhere to
- Patient has IBS-C with primary abdominal symptoms of abdominal pain, bloating & distension
### Step 3: Rx Therapies

#### Secretagogues

<table>
<thead>
<tr>
<th>Name</th>
<th>Dosage</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plecanatide</td>
<td>3 mg QD (CIC &amp; IBS-C)</td>
<td></td>
</tr>
<tr>
<td>Linaclotide</td>
<td>72 &amp; 145 (CIC), 290 mcg (IBS-C) QD ≥ 30 min before 1st meal</td>
<td></td>
</tr>
<tr>
<td>Lubiprostone</td>
<td>8 mcg (IBS-C), 24 mcg (CIC) BID w/food</td>
<td></td>
</tr>
<tr>
<td><em>Tenapanor</em></td>
<td>50 BID w/food (IBS-C)</td>
<td>*FDA approved, but not on the market yet</td>
</tr>
</tbody>
</table>

#### 5HT4 agonists (prokinetics)

<table>
<thead>
<tr>
<th>Name</th>
<th>Dosage</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prucalopride</td>
<td>2 mg QD (CIC)</td>
<td></td>
</tr>
<tr>
<td>Tegaserod</td>
<td>6 mg BID (IBS-C)</td>
<td>*only approved in women w/ IBS-C &lt;65 yrs w/o hx of CV disease (Angina, MI, TIA, CVA). Safest in this population w/1 CV RF= (age &lt;55, HTN, HL, DM, tobacco, BMI &gt;30)</td>
</tr>
</tbody>
</table>

**Note:** Generally, second line therapy, if fails secretagogues. Although not FDA approved, consider for patients with concomitant gastroparesis/global dysmotility.
Step 3: Additional Referrals

• Registered Dietitian
  – Disordered eating/restrictive diet, malnutrition, drastic weight loss, obesity

• GI Behavioral Therapist
  – PTSD, anxiety, perseveration, disordered eating, hx of emotional/physical/sexual trauma

• Treat the patient holistically!
Step 4: Evaluate for a FDD
Overview Dyssynergic Defecation

• Dyssynergic Defecation (DD) present in 27-59% of patients with chronic constipation¹
• An overlap of DD and STC or IBS-C is commonly present¹
• Etiology of DD is unclear
  – 31% of patients had constipation since childhood
  – 29% after an event such as pregnancy, trauma or back injury
  – 40% with no cause¹
• Excessive straining to expel hard stools over time may also lead to dyssynergic defecation¹
• Sexual abuse was reported by 22% of subjects with DD, mostly women. Physical abuse reported by 32%²

Rome IV Diagnostic Criteria
1. Satisfy the diagnostic criteria for functional constipation and/or IBS-C
2. Demonstrate dyssynergic pattern during repeated attempts to defecate via ARM or defecography
3. Must satisfy >1:
   • Inability to expel an artificial stool (50 mL water-filled balloon) within 1-2 minutes.
   • Inability to evacuate or ≥ 50% retention of barium during defecography.

Step 4: ARM+BET

**Indications for ARM+BET**

- Patients with CIC or IBS-C refractory to standard laxative therapy (optimized OTC +/- 1 secondary intervention secretagogue or prokinetic)
- RF or S/S of FDD

**Balloon expulsions test (BET)**

- Most useful test to make a diagnosis of DD
- Performed in conjunction with ARM
- Try to pass a 50cc water filled balloon from rectum within 1 min

**Anorectal manometry (ARM)**

- Identifies inadequate pushing force, paradoxical anal sphincter contraction, impaired anal sphincter relaxation
### Step 4: ARM+BET Results & Biofeedback

#### Biofeedback
- Biofeedback: visual or auditory feedback of anorectal activity recorded by EMG sensors or manometry
- If patient has rectal hypo/hypersensitivity, therapy should include balloon or barostat sensation retraining
- Number of sessions is determined on an individual basis
- Biofeedback improves symptoms in more than 70% of patients with FDD\(^1\)
- Biofeedback is superior to laxatives and diazepam rectal therapy\(^1\)

<table>
<thead>
<tr>
<th>ARM+BET Results</th>
<th>Next Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Colonic transit testing to assess for STC</td>
</tr>
<tr>
<td>Inconclusive</td>
<td>Barium or MR defecography to assess for an anatomical etiology or to support a FDD</td>
</tr>
<tr>
<td>Abnormal</td>
<td>Refer for pelvic floor physical therapy with biofeedback +/- balloon/barostat retraining</td>
</tr>
</tbody>
</table>

Effects of Biofeedback

Rectum

Anal Canal

Courtesy of Rao, SSC.
Step 5: Address Refractory Constipation

1. Patient with chronic constipation
   - Laboratory tests and structural evaluation as appropriate
   - Supplement dietary fiber intake and/or use OTC laxatives; education, routine toileting

2. Did symptoms improve?
   - Yes → Continue treatment plan
   - No → Anorectal manometry/Balloon expulsion test

3. Anorectal manometry/Balloon expulsion test
   - Normal → Treat with secretagogue or prokinetic agent → Did symptoms improve?
     - Yes → Continue therapy
     - No → Assess colonic transit

4. Assess colonic transit
   - Slow
     - Slow transit constipation
       - Prokinetic agents, colectomy, loop ileostomy
   - Normal

5. Consider
   - Slow transit constipation
     - Alternative medications
     - Colonic motility study
   - Normal
     - Defecography
     - Defecography if not performed
     - Suppositories or enemas
     - Loop ileostomy
     - Rectal suspension or rectovaginal repair for rectal prolapse or rectocelect
Step 4: Defecography

- **Types:**
  - Barium: preferred, seated position
  - MR: excellent resolution of sphincters/muscles/soft tissue surrounding rectum, no radiation exposure

- **Indication:**
  - Equivocal ARM+BET
  - Persistent symptoms despite biofeedback
    - Assess quality of PFPT w/ biofeedback
    - Consider repeating an ARM+BET

- **Abnormalities detected:**
  - Spastic puborectalis sling, excessive perineal descent, internal intussusception, solitary rectal ulcers, rectoceles and rectal prolapse

- **Treatment:**
  - PFPT w/ biofeedback
  - If patient has a diagnosis of FDD confirmed on ARM+BET, proceed with PFPT first as anatomical abnormalities could co-exist but improve prior to needing a defecography
Step 4: Colonic Transit Testing

Types:
- Radiopaque markers
- Wireless motility capsule

Indication:
- ARM+BET is normal
- Defecography is normal
- If pelvic floor physical therapy w/ biofeedback is successful in improving FDD, but subjective symptoms persist

Treatment:
- Multi-laxative approach (ex secretagogue + prokinetic + rescue)
- Further supports use of a prokinetic
- Medical approach for managing NTC & STC are similar

Never proceed with colonic transit testing prior to ARM+BET!
- Up to 50% of patients with FDD can have overlapping STC
- Colonic transit normalized after biofeedback therapy in 65% of patients with FDD, but in only 8% of patients with STC, indicating that delayed colonic transit could be 2/2 a FDD
- STC does not exclude FDD
- STC can improve spontaneously with treatment of the FDD

Step 6: Refer to CRS (Last Resort)

- **Patient with chronic constipation**
  - Laboratory tests and structural evaluation as appropriate
  - Supplement dietary fiber intake and/or use OTC laxatives; education, routine toileting

- **Did symptoms improve?**
  - Yes
    - Continue treatment plan
  - No
    - Anorectal manometry
      - Balloon expulsion test
        - Normal
          - Treat with secretagogue or prokinetic agent
            -继续治疗
              - Did symptoms improve?
                - Yes
                  - Assess colonic transit
                    - Slow
                      - Slow transit constipation
                        - Prokinetic agents, colectomy, loop ileostomy
                    - Normal
                      - Consider
                        - Defecography if not performed
                        - Suppositories or enemas
                        - Loop ileostomy
                        - Rectal suspension or rectovaginal repair for rectal prolapse or rectocelectomy
                  - Defecatory disorder
                    - Pelvic floor biofeedback therapy
            - Incconclusive
              - Defecography
            - Abnormal
              - Defecatory disorder

- **Assess colonic transit**
  - Normal
  - Abnormal
    - Did symptoms improve?
      - Yes
        - Continue treatment plan
      - No
        - Consider
          - Defecography if not performed
          - Suppositories or enemas
          - Loop ileostomy
          - Rectal suspension or rectovaginal repair for rectal prolapse or rectocelectomy
### Referral to Colorectal Surgery

#### Indications for Referral

| Failed biofeedback | Temporary diverting loop ileostomy (DLI)  
|                  | • Refractory FDD  
|                  | • Consider before colectomy for patients with IBS/functional dyspepsia to see if symptoms improve or persist after DLI |

| Failed multi-laxative therapy (orals + enemas/suppositories) | Subtotal Colectomy  
|                               | • STC  
|                               | • Last resort! |

| Severe anatomical abnormalities  
| • Large poorly emptying rectocele  
| • Grade IV-V rectal prolapse | Rectal suspension |

|  | Rectovaginal repair |

- Evaluate for overlapping FDDs and upper GI motility disorders!
- Recommend a behavioral therapy and nutrition eval
- Surgery for severe refractory constipation is a LAST RESORT
Thank You!