

DUE Quarterly

DRUG USE IN THE ELDERLY

July 2011

PROMOTING MORE EFFECTIVE MEDICATION USE BY SENIORS

Evaluation and management of chronic constipation in the elderly

Constipation in the elderly is a poorly studied condition despite it being commonly encountered in geriatric medicine. Constipation is increasingly prevalent with age, and has shown detrimental effects on quality of life and hospital discharge. It can also lead to further serious medical conditions.

The medical community has traditionally defined constipation as less than three bowel movements per week, based on 90% of the population having three or more. Patients typically define constipation based on symptoms of defecation such as straining, hard stool, feeling of incomplete evacuation and non-productive urge. The Rome III criteria (Table 1) has helped bridge the gap, but it is primarily a research-based diagnostic tool. In practice, 50% of patients give a different definition of constipation than their physicians do.

Table 1. Rome III Criteria

Symptoms of constipation (involving 25% or more of bowel movements)

- Fewer than three bowel movements per week
- Straining
- Hard, lumpy feces
- Sensation of incomplete evacuation
- Sensation of anorectal obstruction or blockage
- Need for digital maneuvers to facilitate evacuation

Chronic constipation prevalence in the elderly is reported as 30-40% of community dwellers and > 50% of nursing home residents.

The impact of chronic constipation in the elderly includes poorer ratings on physical functioning, mental health,

general health perception and bodily pain. When managed, it is one of the symptoms along with chronic pain, delirium and urinary incontinence that can reduce hospital stay duration. The most serious complication is fecal impaction, which can paradoxically lead to fecal incontinence via overflow diarrhea.

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Constipation complications:

- Fecal impaction and incontinence
- Delirium
- Urinary retention
- Frequent urinary tract infections
- Intestinal obstruction
- Colonic ulceration
- Hemorrhoids
- Anal fissures
- Rectal prolapse
- Excessive straining causing syncope or cardiac ischemia

Pathophysiology

Constipation is **not a normal process** of aging. Age-related changes result in increased rectal compliance and decreased sensation, which may require larger fecal masses to stimulate defecation. There is a trend of reduced anal sphincter tone that can predispose to incontinence. Neuron

loss in the aging myenteric plexus and colon does occur, but no evidence shows this leads to impaired motility in healthy seniors. The elderly with chronic illness and constipation have prolonged transit time, suggesting it is more complex than considering myenteric plexus in isolation.

Classification of constipation

Primary (Idiopathic)

- **Slow transit:** Reduced peristalsis and gastrocolic reflex. Complaints of infrequent defecation with pain and bloating
- **Dyssynergistic:** Failure of recto-anal coordination with either impaired rectal contraction or paradoxical anal contraction. Risk factors: surgeries/injuries to the area and vaginal deliveries



NEXT ISSUE

- Off-label drug use

DUE Quarterly offers expert opinions – not ACP-AMA guidelines or evaluations of drug use.

- **Normal transit/IBS:**
Most common presentation includes abdominal pain, bloating and hard stools. Frequency and colonic transit times are normal.

Secondary (Iatrogenic or due to organic disease)

Table 2. Secondary causes

Medications

- Antacids (aluminum or calcium)
- Anti-cholinergics
- Anti-depressants (tricyclics)
- Anti-psychotics (phenothiazines)
- Anti-convulsants
- Analgesics (opioids, NSAIDs, tramadol)
- Anti-Parkinsonian agents
- Bile acid binders
- Bismuth preparations
- Calcium channel blockers
- Calcium supplements
- Diuretics
- Iron supplements (oral)
- Sucralfate
- Sympathomimetics (clonidine)

Neurologic disorders

- Spinal cord lesions
- Dementia
- Parkinson's disease
- Cerebrovascular disease and stroke
- Multiple sclerosis
- Autonomic neuropathy

Endocrine and metabolic disorders

- Diabetes mellitus
- Hypothyroidism
- Hyperparathyroidism
- Chronic renal disease

Myopathic disorders

- Amyloidosis
- Scleroderma

Others

- Depression
- General disability
- Poor mobility
- Poor caloric intake
- Lack of conducive environment

stools may be more suggestive of slow transit.

A full examination to rule out secondary causes is necessary and the anorectal examination is essential.

Anorectal examination

With the patient in the left lateral position, the examiner should assess:

- Impaction
- Masses
- Skin condition
- Rectal prolapse
- Rectocele
- Resting sphincter tone and sensation
- Presence of pain
- Ability to squeeze
- Coordination of the pelvic floor and rectal muscles
- Extent of perineal descent during simulated defecatory straining (expelling the examiner's finger)

Investigations

Basic laboratory and diagnostic imaging:

- Complete blood count to exclude anemia
- Thyroid-stimulating hormone blood test
- Serum glucose
- Calcium
- Electrolytes
- Plain abdominal X-ray

Colonoscopy is not generally recommended in the absence of "red flag" symptoms, which include:

- Recent change in bowel habit
- Rectal bleeding
- Iron deficiency anemia
- Unintentional weight loss

Further specialized tests, such as manometry or colonic transit radiography, are used for severe intractable symptoms without a secondary cause and failure of high-fibre diet and laxatives.

Management

Appropriate management of chronic constipation in the elderly should include both **non-pharmacologic** (dietary and behavioural modifications) and **pharmacologic** strategies. Therapy goals include:

- Restore normal bowel habits
- Relieve symptoms
- Prevent and treat complications

- Improve quality of life with minimal adverse effects

Non-pharmacologic treatment

Non-pharmacologic treatment of constipation remains first-line before medical therapy is tried. Lifestyle measures are commonly used; however, none of them have been validated with randomized controlled trials with the exception of biofeedback therapy.

- Complete a thorough medication review to discontinue or minimize constipating drugs
- Increase dietary fibre gradually to 20-30 g/day
 - Rule out fecal impaction first
- Increase fluid intake
 - Caution in cardiac or renal patients
- Recommend prunes or prune juice
- Encourage timed toileting to develop a conditioned gastrocolic reflex
- Provide adequate time and privacy (rather than bedside commode)
- Encourage physical exercise
- Avoid straining
- Advise patients not to ignore the urge to defecate
- Utilize biofeedback therapy for patients with pelvic floor dysfunction and subsequent dyssynergistic constipation given that cognition is intact

Pharmacologic treatment

Laxatives are the cornerstone of therapy for constipation management, making them one of the most commonly used medications. Unfortunately, there is a paucity of randomized controlled trials that support laxative use for chronic constipation, particularly in the elderly population. A systematic review, conducted in 2005, evaluated the efficacy and safety of today's laxatives and found little evidence to support their use with the exception of polyethylene glycol (PEG) and lactulose in chronic constipation.

Bulk-forming laxatives

Psyllium:

- Level II Evidence, Grade B Recommendation
- Soluble fibre that absorbs water from the intestinal lumen, softening stool consistency and increasing stool bulk; stimulates peristalsis

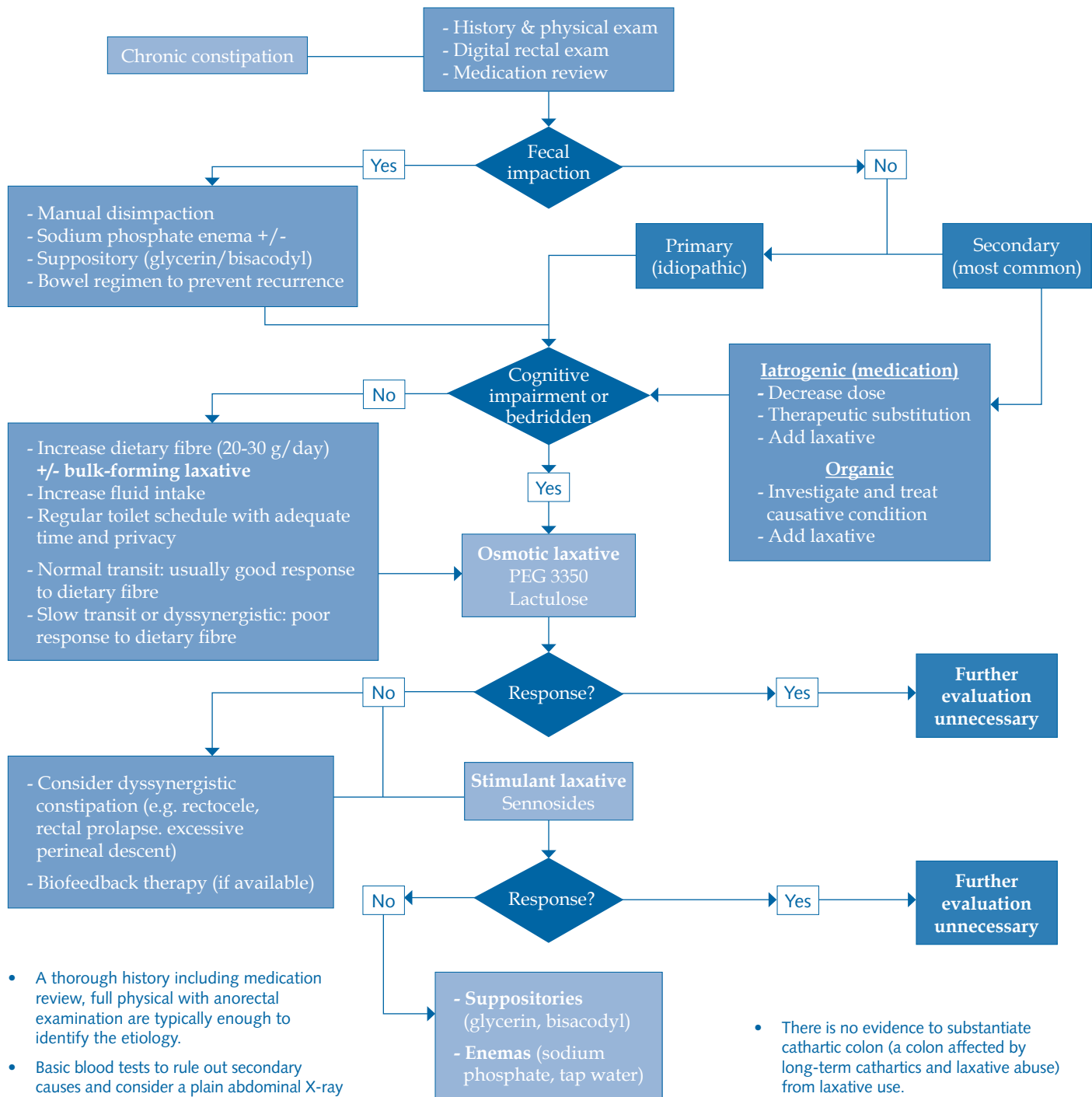
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History/physical exam

Excessive or prolonged straining, assisting stool evacuation by assuming certain positions or with rectal or vaginal digital manipulation, and the **sensation of incomplete rectal evacuation** are among several features that suggest pelvic floor dysfunction.

Decreased urge to defecate and **infrequent**

Practically speaking . . .



- A thorough history including medication review, full physical with anorectal examination are typically enough to identify the etiology.
- Basic blood tests to rule out secondary causes and consider a plain abdominal X-ray are adequate for the vast majority of cases.
- Identify and treat fecal impaction if present, prior to maintenance treatment.
- Increased activity, fluid and fibre intake with the addition of laxatives as necessary are usually adequate treatments.

- There is no evidence to substantiate cathartic colon (a colon affected by long-term cathartics and laxative abuse) from laxative use.
- Be sure to receive biofeedback for the cognitively intact patient with refractory constipation and suspected dyssynergistic defecation.
- Management is based on expert opinion with scant quality evidence.

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- Dose: titrate up to ~20 g/day
 - Adequate fluid intake is essential to avoid fecal impaction
 - Fluid intake must be monitored closely in cardiac and renal patients
- Onset: 12-72 hours
- Side effects: intestinal and esophageal obstruction, bloating, flatulence, abdominal pain
 - Fecal impaction must be ruled out prior to use
- Drug interactions: interferes with absorption of other medications
- Safe for chronic use

Osmotic laxatives

Polyethylene glycol 3350

- Level I evidence, Grade A Recommendation
- Inert polymer that draws water into the intestinal lumen and increases water retention in stool
 - Results in increased stool frequency and softer stools
- Dose: Initial dose 17 g/day
- Onset: 24-96 hours
- Side effects: bloating, cramping, diarrhea, flatulence, nausea, vomiting
- Safe for chronic use
- Modestly more effective than lactulose
- Note: There is limited evidence to support docusate.

Lactulose

- Level II evidence, Grade B Recommendation
- Synthetic disaccharide that produces an osmotic effect in the colon when metabolized
 - Improves stool consistency and defecation frequency
- Dose: 15-60 mL/day, in divided doses
- Onset: 24-72 hours
- Side effects: bloating, flatulence, diarrhea, cramping, belching, nausea, vomiting
- Safe for chronic use

Stimulant laxatives

Sennosides

- Level III evidence, Grade C Recommendation
- Stimulates myenteric plexus causing rhythmic muscle contractions and increases intestinal motility

- Dose: 15 mg/day, maximum 100 mg/day in divided doses
- Onset: 6-24 hours
- Side effects: cramps, diarrhea, nausea, vomiting, melanosis coli
- Useful when bulk or osmotic laxatives are ineffective and for patients on long-term opioid therapy

Suppositories

Glycerin

- Draws fluid into the colon and stimulates evacuation
- Dose: 1 adult suppository, 1 or 2 times/day
- Onset: 15-60 minutes
- Side effects: rectal discomfort, burning
- Safe for chronic use when bulk, osmotic and stimulant laxative ineffective and for patients on long-term opioid therapy

Bisacodyl

- Stimulates peristalsis via direct mucosal irritation
- Dose: 10 mg suppository
- Onset: 15-60 minutes
- Side effects: abdominal pain, cramps, rectal burning
- Safe for chronic use when bulk, osmotic and stimulant laxative ineffective and for patients on long-term opioid therapy

Enemas

Enemas are used to prevent and treat fecal impaction. Commonly used enemas include: sodium phosphates, soap suds and tap water enemas. Soap suds enemas are no longer recommended due to rectal mucosal irritation. Tap water enemas remain the safest alternative. This involves instillation of approximately 250 mL of tap water using phosphate enema tubing into the rectum.

Sodium phosphate:

- Draws water into intestinal lumen producing distention and peristalsis

- Dose: 120 mL enema
- Onset: 2-15 minutes
- Side effects: cramping, bloating, diarrhea, pain, electrolyte imbalances, hyperphosphatemia
- Contraindications: renal failure
- Routine use typically discouraged but may be necessary in refractory constipation.

Table 3. Levels of Evidence

- Level I: Good evidence. Consistent results from well-designed, well-conducted studies
- Level II: Fair evidence. Results show benefit, but strength is limited by number, quality or consistency of the individual studies
- Level III: Poor evidence. Insufficient because of limited number or power of studies, flaws in their design or conduct

Classification of Recommendations

- Grade A: Good evidence in support of the use of a modality in the treatment of constipation
- Grade B: Moderate evidence in support of the use of a modality in treatment of constipation
- Grade C: Poor evidence to support a recommendation for or against the use of the modality
- Grade D: Moderate evidence against the use of the modality
- Grade E: Good evidence to support a recommendation against the use of a modality

References available upon request.

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We'd like your feedback . . .

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