

American Gastroenterological Association Medical Position Statement on Constipation

The AGA Institute Medical Position Panel consisted of the lead technical review author (Adil E. Bharucha, MBBS, MD, AGAF), a Clinical Practice and Quality Management Committee representative and content expert (Spencer D. Dorn, MD, MPH), and two gastroenterologists and content experts (Anthony Lembo, MD, and Amanda Pressman, MD).

Podcast interview: www.gastro.org/gastropodcast.
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This document presents the official recommendations of the American Gastroenterological Association (AGA) on constipation. It was drafted by the AGA Institute Medical Position Panel, reviewed by the Clinical Practice and Quality Management Committee, and approved by the AGA Institute Governing Board. This medical position statement is published in conjunction with a technical review¹ on the same subject, and interested readers are encouraged to refer to this publication for in-depth considerations of topics covered by these questions. The technical review was begun before the AGA's decision to adopt the GRADE system. However, a GRADE methodologist worked with the authors and panel to rank the quality of the evidence and strength of recommendations.

The medical position statement presents information by addressing clinically related questions and summarizing key points from the technical review. When specific recommendations about medical interventions or management strategies for patients with constipation are stated, the "strength of recommendation" and the "quality of evidence" are provided. The strength of recommendation is either judged as "weak" or "strong" and quality of evidence is ranked as high, moderate, low, or very low in accordance with GRADE criteria. Recommendations are highlighted by appearing within a text box. A strong recommendation implies that, based on available evidence, the benefits outweigh risks and there is less variability in patient's values and preferences. A weak recommendation implies that benefits, risks, and the burden of intervention are more closely balanced, or appreciable uncertainty exists in regards to patient's values and preferences. Applying this approach, high-quality evidence does not always result in strong recommendations and, conversely, strong recommendations may emerge from lower-quality evidence.

Symptoms of constipation are extremely common; the prevalence is approximately 16% in adults overall and 33% in adults older than 60 years. Many people seek medical care for constipation, but fortunately most do not have a life-threatening or disabling disorder and the primary need is for control of symp-

toms, although rare, life-threatening, or treatable conditions must be excluded. If therapeutic trials of laxatives fail, specialized testing should be considered. We suggest the following practice guidelines for the symptom of constipation; our rationale for these guidelines is supported by the accompanying technical review.

Constipation is a symptom that can rarely be associated with life-threatening diseases. Current recommendations will relate to (1) rational and, where possible, more judicious diagnostic approaches and (2) more rational and efficacious therapies that will improve symptoms, both of which should have beneficial fiscal and logistic impacts on the health care system. Although the overall classification of chronic constipation into 3 categories (ie, normal transit, isolated slow transit, and defecatory disorders) and several recommendations in this version are similar to the prior version, there are 3 substantive changes. First, these guidelines recommend assessment of colonic transit at a later stage, that is, only for patients who do not have a defecatory disorder or patients with a defecatory disorder that has not responded to pelvic floor retraining. Second, the evidence supporting these recommendations has been evaluated using the GRADE system, in which the strength of recommendation is rated as strong or weak and the quality of evidence is rated as high, moderate, low, or very low. Third, therapeutic recommendations have been updated to include newer agents and delete certain older agents.

Definitions

Although physicians often regard constipation to be synonymous with infrequent bowel movements, typically fewer than 3 per week, patients have a broader set of symptoms, including hard stools, a feeling of incomplete evacuation, abdominal discomfort, bloating, and distention, as well as other symptoms (eg, excessive straining, a sense of anorectal blockage during defecation, and the need for manual

Abbreviations used in this paper: AGA, American Gastroenterological Association; GRADE, Grading of Recommendations Assessment, Development and Evaluation; NTC, normal transit constipation; STC, slow transit constipation.

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maneuvers during defecation), which suggest a defecatory disorder. Not infrequently, patients who have daily bowel movements describe constipation. Reduced stool frequency is poorly correlated with delayed colonic transit. Although many people experience occasional constipation (eg, when they travel), this review is geared toward people who have persistent symptoms (ie, chronic constipation).

Clinical Subgroups

Symptoms of constipation may be secondary to diseases of the colon (stricture, cancer, anal fissure, proctitis), metabolic disturbances (hypercalcemia, hypothyroidism, diabetes mellitus), and neurologic disorders (parkinsonism, spinal cord lesions). Some of these will be amenable to specific therapies, but when they are not, the challenge remains one of symptomatic treatment of constipation. More frequently, constipation is due to disordered colonic and/or pelvic floor/anorectal function. Assessments of colonic transit and anorectal function allow patients to be categorized into 3 subgroups (ie, defecatory disorders, normal transit constipation [NTC], and slow transit constipation [STC]), which facilitates management in refractory patients.

Defecatory Disorders

These disorders are primarily characterized by impaired rectal evacuation from inadequate rectal propulsive forces and/or increased resistance to evacuation; the latter may result from high anal resting pressure ("anismus") and/or incomplete relaxation or paradoxical contraction of the pelvic floor and external anal sphincters ("dyssynergia") during defecation. Structural disturbances (eg, rectocele, intussusception) and reduced rectal sensation may coexist. Other terms for these conditions include outlet obstruction, obstructed defecation, dyschezia, anismus, and pelvic floor dyssynergia. Patients with defecatory disorders may have slow colonic transit that may improve once the defecatory disorder is treated.

NTC and STC

In addition to normal anorectal function, patients with NTC and STC have normal or slow colonic transit, respectively. Some patients with STC have colonic motor disturbances (ie, reduced colonic propulsive activity or increased uncoordinated motor activity in the distal colon) that may impede colonic transit. However, others do not. Indeed, a similar proportion of patients with NTC, STC, and even defecatory disorders have colonic motor disturbances as measured by intraluminal techniques (ie, manometry and a barostat). Hence, the relationship between colonic motor disturbances and transit needs further study. Abnormal (ie, reduced or increased) colonic sensation has also been described in chronic constipation, and increased sensation may explain symptoms (ie, abdominal pain and bloating) in some patients. Resected colonic specimens from patients with STC who undergo colectomy reveal

a marked reduction in colonic intrinsic nerves and interstitial cells of Cajal.

Combination Disorders

Some patients may have combination or overlap disorders (eg, STC with defecatory disorders), perhaps even associated with features of irritable bowel syndrome.

Clinical Evaluation

Historical features are key, and the questioning of the patient must be specific. What feature does the patient rate as most distressing? Is it infrequency per se, straining, hard stools, unsatisfied defecation, or symptoms unrelated to bowel habits or defecation per se (eg, bloating, pain, malaise)? The presence of these last characteristics suggests underlying irritable bowel syndrome.

Defecatory disorders should be suspected strongly on the basis of a careful history and digital rectal examination. Prolonged and excessive straining before elimination are suggestive; when evacuatory defects are pronounced, soft stools and even enema fluid may be difficult to pass. The need for perineal or vaginal pressure to allow stools to be passed or direct digital evacuation of stools is an even stronger clue. It is important to raise these questions early, because evacuatory disorders do not respond well to standard laxative programs and failure to recognize this component is a frequent reason for therapeutic failure.

The current regimen and bowel pattern should be recorded. How often is a "call to stool" noted? Is the call always answered? What laxatives are being used, how often, and at what dosage? Are suppositories or enemas used in addition? How often are the bowels moved, and what is the consistency of the stools? Physicians and patients need to be aware that after a complete purge it will take several days for residue to accumulate such that a normal fecal mass will be formed. Importantly, many commonly used medications have constipation as a notable side effect (eg, opiates, anticholinergics, calcium channel blockers). A full record of prescription and over-the-counter medications must be obtained.

The physical examination and screening tests, if deemed appropriate, should also eliminate diseases to which constipation is secondary (see technical review). The key components of the rectal examination include the following:

- In the left lateral position, with the buttocks separated, observe the descent of the perineum during simulated evacuation and the elevation during a squeeze aimed at retention. The perianal skin can be observed for evidence of fecal soiling and the anal reflex tested by a light pinprick or scratch.
- During simulated defecation, the anal verge should be observed for any patulous opening (suspect neurogenic constipation with or without incontinence) or prolapse of anorectal mucosa.
- The digital examination should evaluate resting tone of the sphincter segment and its augmentation by a squeezing effort. Above the internal sphincter is the

puborectalis muscle, which should also contract during squeeze. Acute localized tenderness to palpation along the puborectalis is a feature of the levator ani syndrome. Finally, the patient should be instructed to integrate the expulsive forces by requesting that she or he "expel my finger."

- An examination should then be conducted to evaluate for a rectocele or consideration be given to gynecologic consultation.

Although a careful digital rectal examination is useful for identifying pelvic floor dysfunction, a normal examination does not exclude this diagnosis. After the initial history and physical examination, a set of focused tests should be considered to exclude disorders that are either treatable (eg, hypothyroidism) or important to diagnose early (eg, colon cancer). However, data do not exist to strictly evaluate and define the tests that need to be performed. A complete blood cell count should be performed. Although metabolic tests (thyroid-stimulating hormone, serum glucose, creatinine, and calcium) are often performed, their diagnostic utility and cost-effectiveness have not been rigorously evaluated and are probably low. A structural evaluation of the colon may be appropriate in certain circumstances, especially if the patient has alarm symptoms or has abrupt onset of constipation or is older than 50 years and has not undergone previous screenings for colorectal cancer. Depending on the circumstances, colonoscopy, computed tomographic colonography, or flexible sigmoidoscopy and barium enema will effectively exclude lesions that could cause constipation.

If this evaluation uncovers a secondary cause for constipation, the appropriate treatment can be offered. The patient's medications can be adjusted when possible to avoid those with constipating effects. A trial of fiber and/or over-the-counter laxatives can be instituted.

Clinical Assessment of Constipation

If feasible, discontinue medications that can cause constipation before further testing (strong recommendation, low-quality evidence).

A careful digital rectal examination that includes assessment of pelvic floor motion during simulated evacuation is preferable to a cursory examination without these maneuvers and should be performed before referral for anorectal manometry. However, a normal digital rectal examination does not exclude defecatory disorders (strong recommendation, moderate-quality evidence).

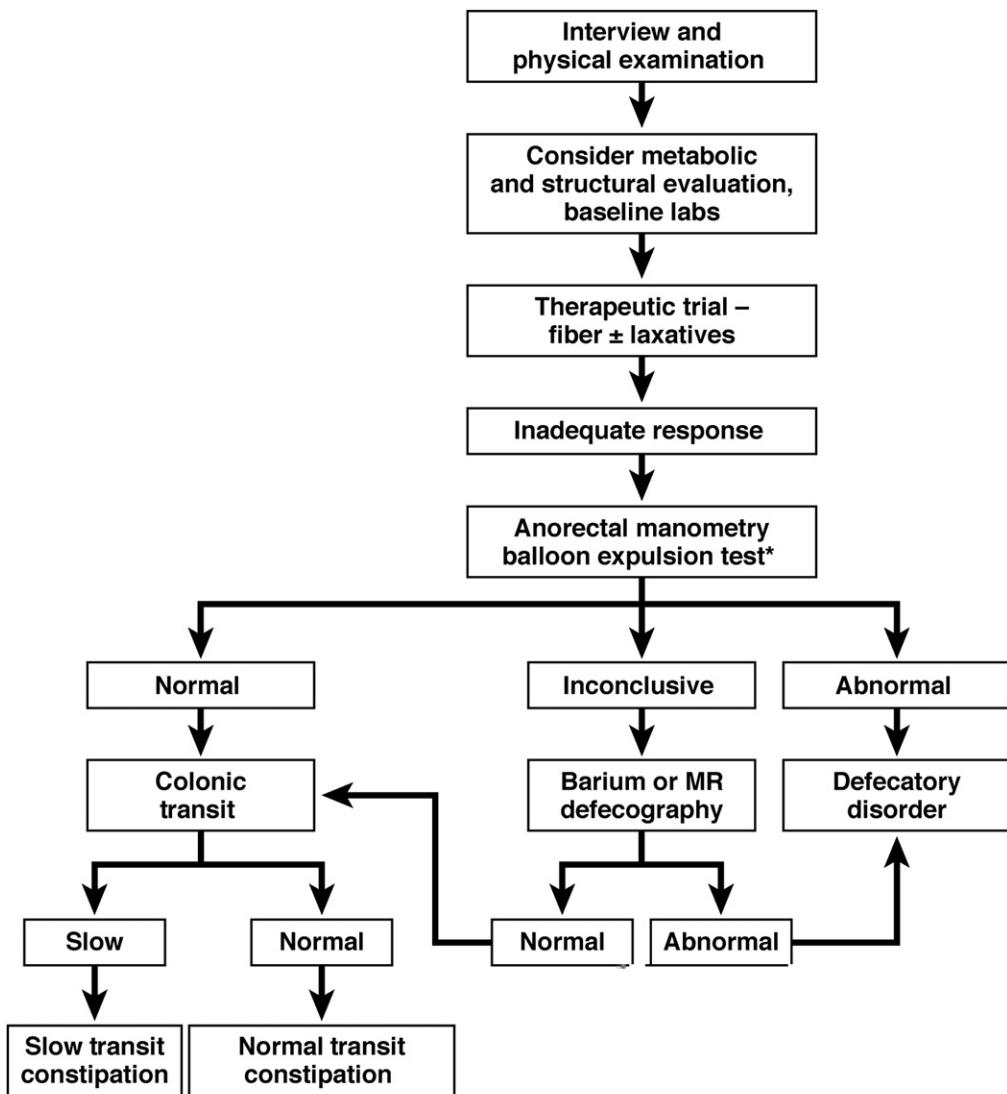
Diagnostic Tests

Patients who do not respond to these measures may benefit from special testing and treatments; these can be presented most simply as an algorithm (Figure 1).

This algorithm starts by recommending anorectal testing for patients who do not respond to a trial of laxatives and/or fiber. Anorectal testing is simple and safe and can potentially modify management; a rectal balloon expulsion test is also inexpensive. There is evidence that pelvic floor retraining is superior to laxatives for defecatory disorders. Hence, anorectal testing may be considered earlier when symptoms or signs strongly suggest pelvic floor dysfunction. Interpretation of any single test must be guarded, because it must be recognized that patient cooperation and understanding comprise an important voluntary component of most tests of anorectal function. The tests themselves must be in a setting as private as possible to reduce embarrassment and facilitate cooperation. Ideal conditions are often not possible. Although anorectal manometry and a rectal balloon expulsion test generally suffice to diagnose or exclude a defecatory disorder, defecography, which is generally performed with barium, or at some centers with magnetic resonance imaging, is useful if results are inconclusive.

Up to 50% of patients with defecatory disorders also have slow colonic transit. Therefore, slow colonic transit does not exclude a defecatory disorder. In addition, coexistent slow colonic transit does not alter the management of defecatory disorders. In contrast to the previous version of this guideline, assessment of colonic transit is recommended only after excluding a defecatory disorder or as shown later during management in Figures 2 and 3. After excluding a defecatory disorder, consideration should be given to assessing colonic transit by radiopaque markers, scintigraphy, or a wireless motility capsule in patients with persistent symptoms while being treated with laxatives. Identifying slow colonic transit may reassure patients about the pathophysiology of their symptoms, serve as an objective marker for documenting the response to therapy, and also provide the physician with the rationale for treating patients with newer, often more expensive treatments. At present, the medical approaches used for managing NTC and STC are similar. However, the major pharmacologic trials in chronic constipation did not assess if the response to therapy is influenced by colonic transit. Although newer agents may also be considered without assessing colonic transit, the long-term side effects, if any, of these agents are unknown and exposure to such potential risks might be more appropriate in patients with more severe forms of constipation associated with slow transit. Hence, we empirically recommend assessing colonic transit in patients with chronic constipation whose symptoms do not respond to laxatives or first-line pharmacologic therapy.

At the conclusion of this initial evaluation, the patient with constipation can be tentatively diagnosed as having (1) NTC or, in patients who also have pain and other features of the disorder, irritable bowel syndrome; (2) STC; (3) defecatory disorder, (4) a combination of STC and defecatory disorder; or (5) secondary constipation (ie, secondary to an organic disease such as mechanical obstruction, systemic disease, or side effect of a drug).



*Because anorectal manometry, rectal balloon expulsion test may not be available in all practice settings, it is acceptable, in such circumstances, to proceed to assessing colonic transit with the understanding that delayed colonic transit does not exclude a defecatory disorder.

Figure 1. Treatment algorithm for chronic constipation. MR, magnetic resonance.

What Tests Should Be Performed to Assess for Medical Causes of Constipation?

In the absence of other symptoms and signs, only a complete blood cell count is necessary (strong recommendation, low-quality evidence).

Unless other clinical features warrant otherwise, metabolic tests (glucose, calcium, sensitive thyroid-stimulating hormone) are not recommended for chronic constipation (strong recommendation, moderate-quality evidence).

A colonoscopy should not be performed in patients without alarm features (eg, blood in stools, anemia, weight loss) unless age-appropriate colon cancer screening has not been performed (strong recommendation, moderate-quality evidence).

Anorectal manometry and a rectal balloon expulsion should be performed in patients who fail to respond to laxatives (strong recommendation, moderate-quality evidence).

Defecography should not be performed before anorectal manometry and a rectal balloon expulsion test (strong recommendation, low-quality evidence).

Defecography should be considered when results of anorectal manometry and rectal balloon expulsion are inconclusive for defecatory disorders (strong recommendation, low-quality evidence).

Colonic transit should be evaluated if anorectal test results do not show a defecatory disorder or if symptoms persist despite treatment of a defecatory disorder (strong recommendation, low-quality evidence).

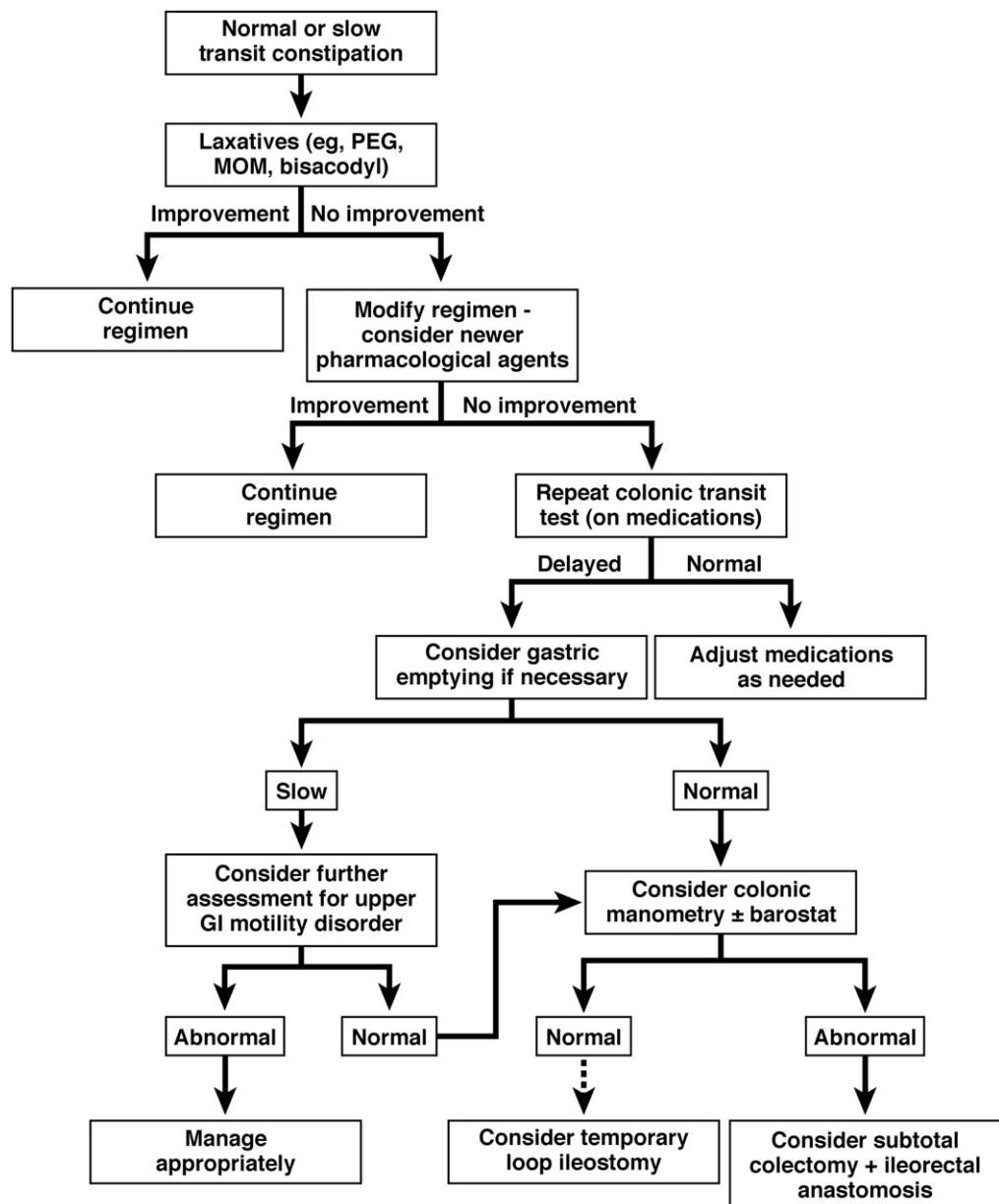


Figure 2. Treatment algorithm for NTC and STC. PEG, polyethylene glycol; MOM, milk of magnesia; GI, gastrointestinal.

Medical Management

Figures 2 and 3 show treatments for the clinical subgroups.

We suggest a gradual increase in fiber intake, as both foods included in the diet and as supplements and/or an inexpensive osmotic agent, such as milk of magnesia or polyethylene glycol. Depending on stool consistency, the next step may be to supplement the osmotic agent with a stimulant laxative (eg, bisacodyl or glycerol suppositories), which is preferably administered 30 minutes after a meal to synergize the pharmacologic agent with the gastrocolonic response. For all of these agents (polyethylene glycol 17 g daily, milk of magnesia 1 oz twice daily, psyllium 15 g daily, glycerin or bisacodyl suppositories), the approximate daily cost is \$1 or less. A newer agent should be considered when symptoms do

not respond to laxatives. Two such drugs are lubiprostone and linaclotide whose daily costs at the time this guideline was developed were \$7-\$9. Another agent, prucalopride, is not available in the United States but has been approved in other countries.

Biofeedback therapy improves symptoms in more than 70% of patients with defecatory disorders. The motivation of the patient and therapist, the frequency and intensity of the retraining program, and the involvement of behavioral psychologists and dietitians as necessary all likely contribute to the chances of success. The schedule of therapy can be tailored to patients' symptoms and varies among centers.

Patients who do not respond to standard approaches may require colonic manometry and barostat testing, which is only available at selected centers. Figure 3 shows the algorithm for defecatory disorder.

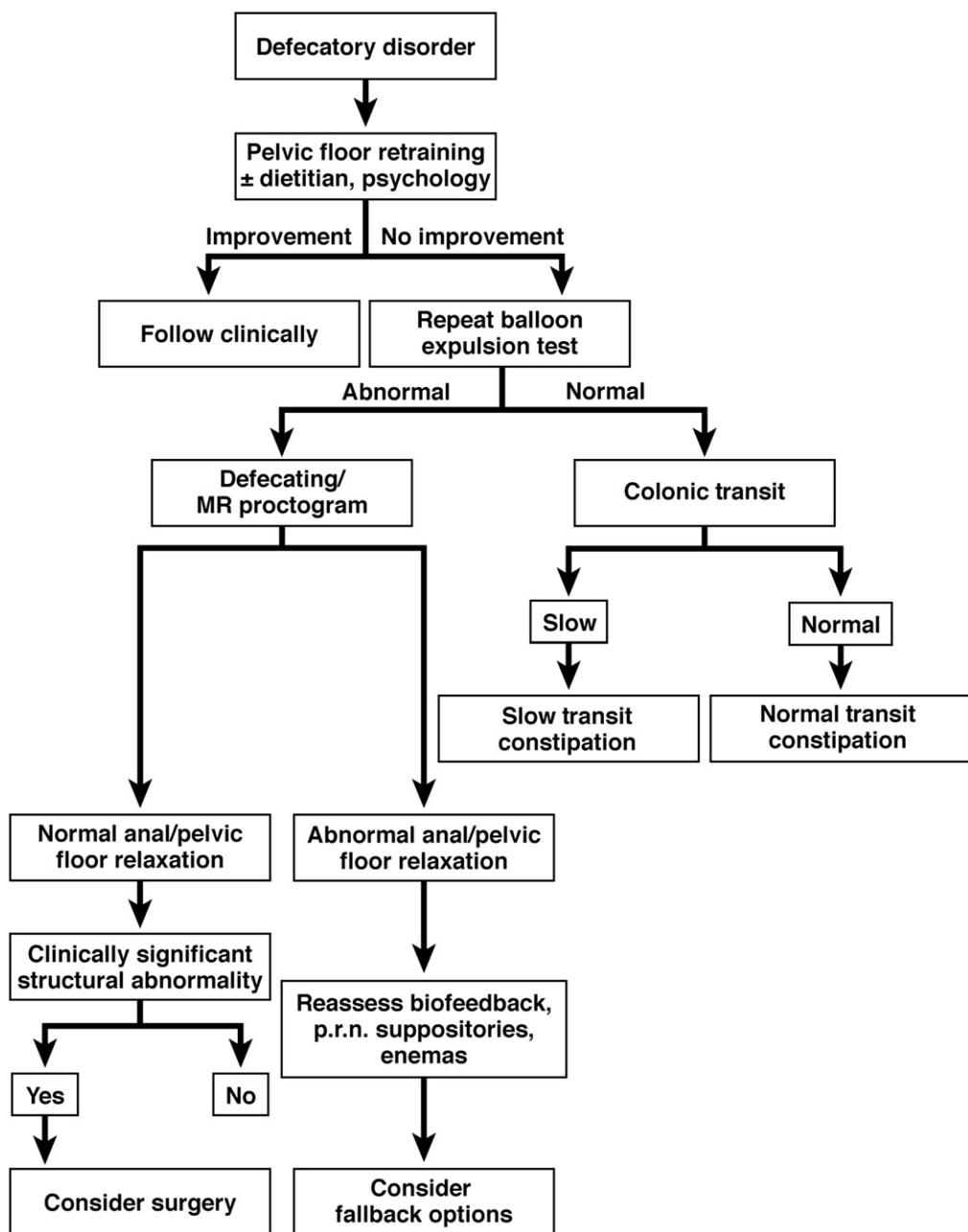


Figure 3. Treatment algorithm for defecating disorders. MR, magnetic resonance; p.r.n., as needed.

Pelvic Floor Retraining

Biofeedback and relaxation training have been quite successful and, importantly, free of morbidity. Biofeedback can be used to train patients to relax their pelvic floor muscles during straining and to correlate relaxation and pushing to achieve defecation. By the relearning process, the nonrelaxing pelvic floor is gradually suppressed and normal coordination restored. Biofeedback is also used in the treatment of fecal incontinence. There are, however, major differences between the approaches to fecal incontinence and constipation. Biofeedback has been shown to improve rectoanal coordination during defecation and symptoms of constipation despite reduced laxative use.

What Is the Initial Treatment Approach for Constipation?

After discontinuing medications that can cause constipation and performing blood and other tests as guided by clinical features, a therapeutic trial (ie, fiber supplementation and/or osmotic or stimulant laxatives) is recommended before anorectal testing (strong recommendation, moderate-quality evidence).

NTC and STC can be safely managed with long-term use of laxatives (strong recommendation, moderate-quality evidence).

Anorectal tests should be performed in patients who do not respond to these measures (strong recommendation, high-quality evidence).

Pelvic floor retraining by biofeedback therapy rather than laxatives is recommended for defecatory disorders (strong recommendation, high-quality evidence).

Surgical Treatment of Constipation

The treatment of STC, when well documented and assuming failure of an aggressive, prolonged trial of laxatives, fiber, and prokinetic agents, is total colectomy with ileorectal anastomosis. Exclusion of coexistent upper gastrointestinal motility disorders and defecatory disorders will maximize the outcome. Patients need to be told that the procedure is designed to treat the symptom of constipation and that other symptoms (eg, abdominal pain) may not necessarily be relieved, even though regular defecation may be achieved. Even in a tertiary center with a strong presence of surgical referrals, only 5% of cases in this highly selected cohort justify surgical treatment. In patients with severe bloating and abdominal pain accompanying STC, a venting ileostomy may help ascertain if symptoms are attributable to the small intestine or colon. If symptoms do not improve with a venting ileostomy, an ileorectal anastomosis would not be indicated.

Pouch of Douglas protrusion is best addressed with sacrocolpopexy and is usually performed in conjunction with other gynecologic procedures in patients with pelvic floor abnormalities such as cystoceles, rectoceles, and enteroceles and vaginal vault prolapse. Ideally, impaired pelvic floor function during defecation should be considered and, if present, treated with pelvic floor retraining before surgery. Options for patients with refractory defecatory disorders after an adequate trial of pelvic floor retraining by biofeedback therapy are limited. Perhaps a venting ileostomy or, if colonic transit is normal, a colostomy are viable fallback options. Based on the available evidence, botulinum toxin injection or stapled transanal resection cannot be recommended outside of clinical trials.

What Approaches Should Be Considered for Constipation Unresponsive to Initial Approaches?

When bowel symptoms are refractory to simple laxatives, newer agents should be considered in patients with NTC or STC (weak recommendation, moderate-quality evidence).

Anorectal tests and colonic transit should be reevaluated when symptoms persist despite an adequate trial of biofeedback therapy (strong recommendation, low-quality evidence).

A subtotal colectomy rather than continuing therapy with chronic laxatives should be considered for patients with symptomatic STC without a defecatory disorder (weak recommendation, moderate-quality evidence).

Colonic intraluminal testing (manometry, barostat) should be considered to document colonic motor dysfunction before colectomy (weak recommendation, moderate-quality evidence).

Suppositories or enemas rather than oral laxatives alone should be considered in patients with refractory pelvic floor dysfunction (weak recommendation, low-quality evidence).

Reference

1. Bharucha AE, Pemberton JH, Locke GR. American Gastroenterological Association technical review on constipation. *Gastroenterology* 2013;144:218–238.

Acknowledgments

Disclaimer: Medical Position Statements are derived from the data available at the time of their creation and may need to be modified as new information is generated. Unless otherwise stated, these statements are intended for adult patients.

These documents are not to be construed as standards of care. All decisions regarding the care of a patient should be made by the physician in consideration of all aspects of the patient's specific medical circumstances. A comprehensive background paper, the Technical Review, provides the user of the Medical Position Statement with the evidence used to formulate a particular recommendation and the strength and character of that evidence.

Conflicts of interest

The authors disclose the following: Anthony Lembo is a consultant to and an advisory board member for Ironwood Pharmaceuticals and Forest Laboratories. Spencer D. Dorn is a consultant to Ironwood Pharmaceuticals and Forest Laboratories and has received research support from Forest Laboratories, Ironwood Pharmaceuticals, Synergy Pharmaceuticals, and Takeda Pharmaceuticals. Adil E. Bharucha is an employee of the Mayo Clinic, has a financial interest in a new technology related to anal manometry, and has been a consultant for Helsin Therapeutics and Asubio Pharmaceuticals. Amanda Pressman discloses no conflicts.