

Abstract

Constipation is one of the most common symptoms experienced around the world. While routinely experienced in the general population, it also occurs in patients with unique medical backgrounds. This includes geriatric patients,

Keywords: Constipation; Parkinson disease; Integrative medicine; Holistic medicine; Hemp seed pill; Ficus carica; Opioid induced constipation

Introduction

Regardless of age, nearly everyone has experienced some form of slowed gastrointestinal transit commonly referred to as constipation. The prevalence of constipation increases with age, especially after the age of 65 [1]. However, despite its commonality, the definition of “constipation” has a significant amount of subjective and cultural interpretation. Our current understanding of constipation has been greatly assisted from the expertise of gastroenterologists as well as various other specialists from around the world. The ROME classification system of functional gastrointestinal disorders (FGIDs) is the most widely accepted; it was initially developed in the 1980’s and initially focused on pathophysiology. It has since been revised several times, with the most recent ROME-IV criteria having been published in 2016 [2], with a greater focus on presenting symptomatology [3,4]. This article seeks to review the symptoms and management of functional constipation (FC) as well as what to be aware of in certain special populations.

Basic functional constipation

The most common cause of FC is dehydration, low dietary fiber intake and a sedentary lifestyle. Other preexisting conditions can also contribute to a patient’s overall susceptibility in developing FC, such as hypothyroidism, pelvic floor weakness/dysfunction and polypharmacy.

The clinical presentation of FC most often includes sensations of bloating, straining and anorectal obstruction among other symptoms (Table 1) [5]. A routine workup for FC should include basic serum studies and a comprehensive physical exam [6]. Initial management involves the addition of fiber and bulk-forming laxatives [7,8] to a patient’s diet as well as an improved physical exercise routine; if beneficial, these changes should be continued long-term. If symptoms persist, the addition of a stimulant laxative (Table 2) such as Senna, or an osmotic agent such as polyethylene glycol (PEG) or milk of magnesia (MOM) should be tried in addition to lifestyle adjustments (Figure 1) [9]. Should any alarm symptoms be present such as unintentional weight loss, systemic involvement or symptomatology involving additional segments of the gastrointestinal (GI) tract, suspicion for more serious pathology should be raised and the attention of appropriate specialists should be sought out [6]. If no serious pathology is identified and FC remains the most likely diagnosis, providers may consider a trial of a colonic secretagogue such as lubiprostone [10,11], linaclotide [12], or plecanatide [13]. Additionally, after implementing long-term dietary

changes, lifestyle modifications and laxative use, intermittent FC may still arise. Therapies available for treating FC on an as-needed basis include rectal suppositories, stool softeners and enemas.

Special considerations

Geriatric populations

Given the increased frequency of FC in the elderly, attention must be paid to accompanying comorbid conditions, as well as more serious conditions that may mimic the presentation of FC. Elderly patients are more prone to electrolyte and fluid derangements, as well as delirium, resulting in a decreased ability to self-report symptoms. Providers should be wary of alarm symptoms (mentioned earlier) and consider etiologies other than FC, such as overflow incontinence, pelvic floor dysfunction and potential malignancy. If conservative management has not yielded relief of symptoms, suspicion for more complex pathology changing opioid therapy [2]. As OIC can have significant symptomatic overlap with FC, there is overlap in the recommended treatment

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Table 1: ROME-IV diagnostic criteria for functional constipation.

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Must include 2 of the following:	
-	Straining during more than 25% of defecations
-	Lumpy or hard stools (Bristol Stool Form Scale 1-2) for more than 25% of defecations
-	Sensation of incomplete evacuation for more than 25% of defecations
-	Sensation of anorectal obstruction/blockage for more than 25% of defecations
-	Manual maneuvers (digital evacuation) to facilitate more than 25% of defecations
-	Fewer than 3 small bowel movements per week
-	Loose stools are rarely present without the use of laxatives
-	Insufficient criteria for irritable bowel syndrome
Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis	

Table 2: Laxative agents: Summary of various laxative types and common side effects.

Mechanism of Action	Medication	Side Effects
Bulk-forming	Psyllium Methylcellulose	Abdominal bloating, flatulence, possible stool impaction
Osmotic agents	Lactulose Polyethylene glycol Magnesium sulfate/citrate	Abdominal bloating, flatulence, cramping
Stimulants	Senna Bisacodyl	Gastrointestinal or rectal irritation
Softeners	Docusate sodium Docusate calcium	Generally few/no symptoms
Secretagogues	Linaclotide Plecanatide Lubiprostone Prucalopride	Abdominal bloating, diarrhea

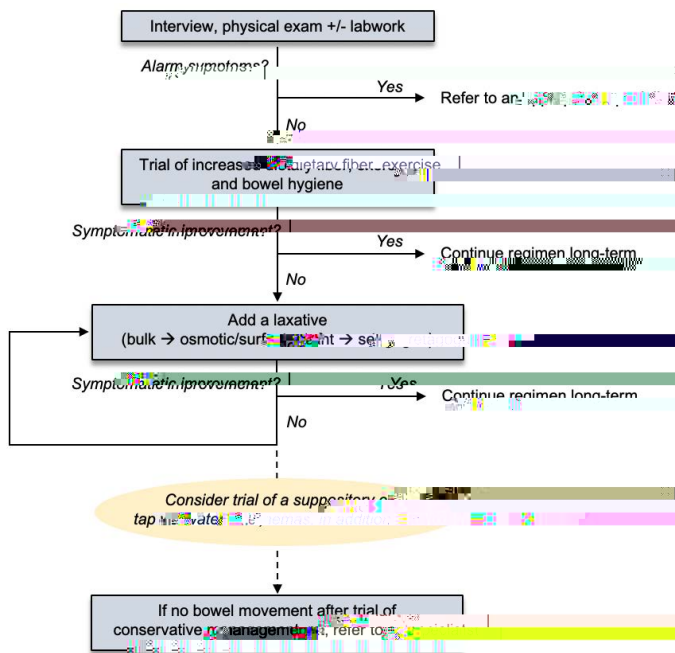


Figure 1: Initial evaluation of simple functional constipation. Algorithm for evaluation and treatment of suspected simple functional constipation.

modalities of OIC and FC. Initiation of a laxative is recommended for prophylaxis as well as treatment of OIC. If traditional laxatives prove ineffective an opioid-receptor antagonist can be trialed. General opioid antagonist (such as naloxone or naltrexone) can be given, but as they act both centrally and peripherally, their use should be reserved for treatment of reduced respiratory drive from overdose of centrally-acting opioids. Alternatively, a peripherally acting mu-opioid receptor antagonist (PAMORA) such as methylnaltrexone, naloxegol,

naldemedine or alvimopan can be given to treat OIC [5]. As PAMORAs do not cross the blood-brain barrier they should not precipitate opioid withdrawal or reduce analgesia; special attention should be made to only use PAMORAs in the absence of bowel obstruction. Lubiprostone has also shown to be effective and has been approved for treating OIC [15].

Constipation in Parkinson disease

As a common, chronic neurodegenerative disease, Parkinson disease (PD) primarily manifests with motor symptoms (resting tremor, cogwheel rigidity, bradykinesia and postural instability) though patients also experience non-motor symptoms, mainly as a consequence of autonomic dysfunction. PD features a pathologic loss of central dopaminergic signaling, it also involves central and peripheral loss of autonomic (parasympathetic and sympathetic) signaling in the GI tract, leading to slowed colonic transit and pelvic floor dyssynergia. As such, constipation is a common symptom in PD and may even present years before the emergence of classic motor symptoms. Typical PD medications which stimulate dopaminergic signaling have not been found to exacerbate constipation.

The management of constipation in PD patients is very similar to management in the general population, namely conservative measures such as dietary (including probiotics) and lifestyle changes including increased hydration and exercise should be recommended first. If constipation persists, osmotic laxatives such as PEG or MOM can be trialed. If further medical assistance is needed, lubiprostone has also shown to be effective in the management of constipation attributable to underlying PD [16].

Traditional, Integrative and Holistic Remedies

Bowel health and regular bowel movements have been the focus of many early civilizations for thousands of years. The optimal approach to the management of constipation has been prevention with a primary

focus on maintaining a healthy diet. Various traditional medicine remedies have been investigated using modern research principles and have proven effective in contributing to bowel health. Specifically, hemp seed pill (HSP) is a common east Asian remedy that has been demonstrated to aid in relief of functional constipation symptoms in many studies [17,18]. Other traditional remedies such as magnesium-rich mineral water [19] and fig fruit (*Ficus carica*) [20] have also shown to have benefits in relieving constipation.

Technological breakthroughs

For individuals with FC and chronic idiopathic constipation (CIC; defined as having an average of 1 to 2.5 spontaneous bowel movements per week) [2,5,13] a new treatment method involving vibrating capsules is currently in a phase 3 multicenter randomized controlled trial. The capsules are built with technology allowing them to vibrate within the gastrointestinal system after being swallowed; vibration occurs for several seconds alternating with several seconds of rest, with this pattern repeating for several hours at a time. The vibration is believed to cause increased peristalsis via local stimulation of the colon. The study compared the vibrating capsules against placebo, ingested daily for 8 weeks. Those who received the vibrating capsules experienced a significant increase in frequency of passing spontaneous bowel movements weekly; the only adverse effect was intermittent minor discomfort [21,22].

Conclusion

Functional constipation is one of the most commonly encountered presenting complaints in the clinic and in the inpatient setting. Most often, a trial of lifestyle and dietary modifications, in addition to the use of a laxative will greatly aid in ameliorating a patient's symptoms. Additional attention must be paid to geriatric patients who report symptoms of constipation, as they may be demonstrating signs of more complex disease pathology. Furthermore, patients on chronic opioids may experience OIC whose symptoms significantly resemble those of FC, though may need additional management consideration. While the majority of FC concerns can be managed by most providers, it pays for all to be wary of symptomatic red flags and to know when it is appropriate for patients to be referred to a specialist. Most importantly, providers would do well to appreciate the old adage of an ounce of prevention being worth more than a pound of cure.

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Not applicable.

Conflict of Interest:

The author declares that there are no conflicts of interest.

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