Management of chronic constipation

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Constipation in the older adult may be due to primary colorectal dysfunction or secondary to several etiologic factors .The etiology of constipation in older patients is often multifactorial.

- Primary colorectal dysfunction
- Slow transit constipation
- Dyssynergic defecation
- Irritable bowel syndrome
- Secondary causes for constipation
- Chronic idiopathic constipation

MANAGEMENT :

- ✓The first step in the treatment of chronic functional constipation is **lifestyle** and **dietary** modification.
- ✓**Bulk laxatives** are recommended in patients who do not respond to lifestyle and dietary modification
- ✓A trial of **osmotic laxatives** should be considered in patients not responding to bulk laxatives.
- ✓In patients who fail a trial of osmotic laxatives, **colon secretagogues** (**linaclotide**) should be considered
- ✓**Stimulant laxatives** are efficacious, but chronic use should be avoided as the long-term safety in older adults is not known.

- ✓ **Stool softeners** and **suppositories** (glycerin or bisacodyl) have limited clinical efficacy
- ✓ **Opioid antagonists** may have a role in treatment of narcotic-induced constipation and paralytic ileus
- ✓ In patients with dyssynergic defecation, **biofeedback** therapy may be helpful.

Lifestyle modification:

- General measures such as increased **fluid** intake and exercise are suggested to treat constipation, but there is little evidence to support this . In a small study of healthy volunteers, consumption of extra fluid was not associated with an increase in stool output .
- It is advisable to encourage patients to establish a **regular pattern** of bowel movement. Most patients who have a normal bowel pattern usually empty stools at approximately the **same** time every day
- Thus, the optimal time for bowel movement is usually within the **first two hours** after waking and after **breakfast**.

Diet and fiber:

Fiber increases stool bulk, which causes colonic **distention** and promotes stool **propulsion**. A daily fiber intake of **20 to 25 g/day** is generally recommended. The effects of fiber on bowel movements may take several weeks. Bloating and flatulence is a common problem with increased fiber intake .

Laxatives:

Laxative usage in the older adults should be individualized keeping in mind the patient's history (**cardiac** and **renal** comorbidities), drug interactions, cost, and side effects.

Bulk forming laxatives

Bulk forming laxatives include **psyllium** husk (eg, Metamucil),**methylcellulose** (eg, Citrucel), **calcium poly carbophil** (eg, Fiber Con), and **wheat dextrin** (eg, Benefiber) . They are natural or synthetic polysaccharides or cellulose derivatives that primarily exert their laxative effect by absorbing water and increasing fecal mass. These laxatives are effective in increasing the frequency and softening the consistency of stool with a **minimum** of adverse effects. They may be used alone or in combination with an increase in dietary fiber.

Osmotic laxatives

A trial of osmotic laxatives should be considered in patients not responding to bulking agents .

- Low-dose polyethylene glycol (**PEG**) (17 g/day) has been demonstrated to be efficacious and well tolerated in older patients . However, high-dose PEG (34 g/day) is associated with abdominal bloating, cramping, and flatulence, and older adults may be more susceptible to these side effects .
- **Lactulose** increases stool frequency, decreases the severity of constipation symptoms, and reduces the need for other laxatives in older adult patients compared with placebo. However, in one study, lactulose was **less** effective than low-dose PEG and also had a **higher** incidence of flatus.

Sorbitol was shown to be as efficacious as lactulose in a four-week study of constipated older adult patients and was **less** expensive and **better** tolerated .

Saline laxatives such as **magnesium hydroxide** have not been examined in older adults, and should be used with **caution** because of the risk of hyper magnesemia.

Stimulant laxatives:

Stimulant laxatives affect **electrolyte transport** across the intestinal mucosa and enhance colonic **transport** and **motility**. In one study, **senna**, the stimulant laxative , in combination with **fiber** was associated with improved stool consistency, frequency, and ease of stool passage when compared with lactulose in older nursing home residents, and appeared qually well tolerated

Bisacodyl was evaluated in a randomized, double-blind, placebo-controlled, parallel-group study in which patients were randomized to bisacodyl (10 mg) or placebo for four weeks. The mean number of complete spontaneous bowel movements (CSBMs) per week, the number of spontaneous bowel movements (SBMs), constipation-associated symptoms, and quality of life were significantly **improved** in the bisacodyl group compared to placebo .Treatment with bisacodyl was also well tolerated. However, the **long-term safety** of stimulant laxatives has **not** been established.

Sodium picosulfate is a contact stimulant laxative used as a treatment for constipation or to prepare the large bowel
before colonoscopy or surgery.
Sodium picosulfate is a **prodrug**. It has no significant direct physiological effect on the intestine; however, it is metabolised by **gut bacteria** into the active compound 4,4'-dihydroxydiphenyl-(2-pyridyl)methane (DPM, BHPM). This compound increases **peristalsis** in the gut.(**decreased laxative action with antibiotic**)

Side effect: nausea, abdominal cramp, electrolyte imbalance, hypokalemia, dizziness, syncope

Drug interaction: diuretic, adrenocorticosteroid, cardiac glycoside, antibiotic


Oral Drops
Picodrop
30 ml

Stool softeners, suppositories, and enemas

Stool softeners (**docusate**), suppositories(**glycerin** or **bisacodyl**), and enemas, although widely used, have **limited** clinical efficacy . Glycerin or bisacodyl suppositories can be used in institutionalized **older** adults with **dyssynergic** defecation to help with rectal evacuation.

- **Enemas** (**tap water**, **soapsuds**) should be used only as needed for constipation in the older adult, ie, after several days of constipation in order to **prevent fecal impaction**. Adverse effects include **rectal mucosal damage** with soapsuds enemas.

5HT(4) receptor agonists

Serotonin (5HT) is a key regulator of gastrointestinal motility. **Prucalopride** is a selective high affinity 5HT receptor agonist. In a dose of **1** and **4 mg** once daily, prucalopride has been shown to be superior to placebo in 4- and 12-week trials, and **safe** and well **tolerated** in patients **age 65 years** or older . In clinical trials, prucalopride **2 mg** provided comparable efficacy to 4 mg and it is therefore the widely used dosage in clinical practice. The dose of prucalopride can be titrated up based on clinical response.

Colonic secretagogues:

Lubiprostone is an oral bicyclic fatty acid that activates the **type 2 chloride channels** on the intestinal epithelial cells, thus secreting chloride and water into the gut lumen [23]. In two phase III studies of four weeks duration, lubiprostone 24 mcg twice daily significantly enhanced bowel movement frequency and relieved other constipation-related symptoms compared with placebo . In a subgroup analysis, lubiprostone also demonstrated efficacy in older patients. It is best reserved for patients with **severe constipation** in whom other approaches have been unsuccessful.

Linaclotide:

- ✓**Linaclotide** and **plecanatide** are **guanylate cyclase C receptor** (GCC) agonists that stimulates intestinal fluid **secretion** and **transit** .
- ✓Linaclotide is a synthetic 14-amino acid cyclic peptide and first-in-class guanylate cyclase-C (G-CC) agonist. Linaclotide is structurally related to human **guanylin** and **uroguanylin**, paracrine peptide hormones that are endogenous activators of GC-C.
- ✓Linaclotide was first approved by the FDA on **August 30, 2012**.


LINACLOTIDE
alamy
alamy

Linaclotide is a laxative with **visceral analgesic** and **secretory activities**. In animal studies and clinical trials, linaclotide improved constipation and gastrointestinal symptoms in patients with irritable bowel syndrome with predominant constipation and chronic idiopathic constipation.

In animal models, linaclotide has been shown to both **accelerate gastrointestinal transit** and **reduce intestinal pain**. In an animal model of visceral pain, linaclotide **reduced** abdominal muscle **contraction** and **decreased** the activity of **pain-sensing nerves**.

Taking linaclotide with a **high-fat meal** results in looser stools and a higher stool frequency than taking it in the fasted state.

Linaclotide binds to its target, guanylate cyclase-C (GC-C), with high affinity and selectivity. Linaclotide and its active metabolite act **locally** on the **luminal surface** of the intestinal epithelium. As linaclotide is stable under a highly acidic pH environment, it acts in a **pH-independent** manner.

🚫**side effects :** including **diarrhea**, which is the most common side effect and can sometimes be severe. Diarrhea often begins within the first **2 weeks** of treatment. abdomen pain, and **swelling**, or a feeling of **fullness** or pressure in your abdomen (**distention**).

Biofeedback

Biofeedback therapy is a painless, noninvasive means of cognitively retraining the pelvic floor and the abdominal wall musculature to facilitate evacuation. Patients are guided to improve control of these muscles by electromyographic surface electrodes on an anal plug and an abdominal wall surface electrode. For patients with pelvic floor dysfunction, especially **dyssynergic defecation**, **rectal hyposensitivity**, or **rectal mucosal intussusception**, **biofeedback** therapy should be considered.

- Randomized controlled trials have evaluated the efficacy of biofeedback therapy in the treatment of dyssynergic defecation and concluded that biofeedback is **consistently superior to laxatives, standard therapy, sham therapy, placebo, and diazepam Home biofeedback therapy was as effective as office biofeedback therapy.**


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