Managing constipation in adults

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Summary

Patients complaining of constipation require a history and examination and possibly simple investigations to find out if their problem is secondary to other conditions or drugs. If there is no underlying cause, non-drug treatments such as increasing dietary fibre should be recommended. Drug treatment can be considered if the constipation persists. Bulking agents can be tried and then osmotic laxatives. Stimulant laxatives are available, but their long-term use is not recommended. Specialist assessment should be considered if the constipation remains refractory to treatment.

Key words: colon, laxatives.

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Introduction

Chronic constipation leads to a considerable loss of quality of life and increases healthcare costs. It is also a common reason for primary care visits and referrals to gastroenterologists.

The prevalence of constipation varies with the definition used. The Rome III criteria (see Box 1) are a useful definition for chronic functional constipation.[1] Many people who complain of constipation do not meet these criteria. Simpler definitions include patients with fewer than three bowel movements per week, or those who report a consistent difficulty with defecation such as hard or infrequent stools, prolonged time spent on the toilet or a sense of incomplete emptying.

Recent Australasian epidemiological studies of constipation report prevalences of 6–30%.[2] Predisposing factors include female sex, increasing age, low socioeconomic status, depression and a history of sexual abuse.

Assessment

Being alert to alarm symptoms (see Box 2) is important as they may point towards an underlying organic cause such as colorectal neoplasia, intestinal obstruction or inflammatory bowel disease. Chronic constipation in the absence of these alarm symptoms can still be due to other secondary causes. These include endocrine diseases such as diabetes mellitus and hypothyroidism, and neurological injuries and diseases such as multiple sclerosis and Parkinson's disease. In addition, perineal problems such as fissures and haemorrhoids may lead to constipation. A variety of drugs can also cause or aggravate constipation (see Box 3).

Underlying causes may be identified by a thorough history and clinical examination (including rectal examination). There is no

Box 1

Rome III criteria for chronic constipation[1]

Presence of two or more of the following:

- straining during at least 25% of bowel movements
- lumpy or hard stools in at least 25% of bowel movements
- sensation of incomplete evacuations for at least 25% of bowel movements
- sensation of anorectal blockage for at least 25% of bowel movements
- manual manoeuvres to facilitate at least 25% of bowel movements
- fewer than three bowel movements each week.

Loose stools are rarely present without laxatives.

These criteria must have been present for the last three months, with symptom onset at least six months before diagnosis.

Box 2

Constipation – alarm symptoms for more serious conditions

Acute or recent constipation

Obstipation

Rectal loss of blood, melaena or mucus

Weight loss

Fever

Rectal pain

Change in stool calibre

Anorexia, nausea, vomiting

Family history of inflammatory bowel disease or colorectal cancer

Aged over 50 years

Box 3

Constipating drugs

Analgesics
Opioids
Non-steroidal anti-inflammatory drugs

Anticholinergics
Antihistamines
Antispasmodics
Antidepressants
Antipsychotics

Neurally active drugs
Antihypertensives
Ganglion blockers
Vinca alkaloids
Thalidomide
Calcium channel blockers
$5HT_3$ antagonists

Iron supplements

Antacids containing aluminium

evidence available to support the routine use of investigations, if there are no alarm symptoms.[3] If further investigation is needed, begin with simple tests such as complete blood count, thyroid function, calcium, electrolytes, glucose and urinalysis.

Physiological testing is required only infrequently, in those with symptoms not responding to treatment and who do not have a secondary cause for their constipation. Colonic transit testing is performed by either monitoring the progress of ingested radio-opaque markers on plain abdominal radiographs, or (less commonly) using scintigraphy. These tests may identify slow transit if present, but do not specifically alter management. Patients with predominantly anorectal symptoms may benefit from studies such as balloon expulsion testing to confirm a defecatory defect. Defecography is rarely needed and only if there is suspicion of a structural abnormality affecting defecation.

Management

Secondary causes of constipation should be treated. If possible, the concurrent use of constipating drugs should be avoided. Most patients will have idiopathic constipation, or constipation-predominant irritable bowel syndrome. The initial approach in this condition should be diet and non-drug treatment. If this fails, drugs can be used.

Non-drug treatment

Reassurance can be offered if there are no alarm symptoms. Simple education about a normal stool habit may help. The timing of bowel motions should be as regular as possible. Defecation should not be postponed unnecessarily when the urge arises. Patients can be reminded that colonic motility is maximal after meals and that this is a good time to try to plan regular defecation. If the disorder is defecatory, then biofeedback is effective in up to 75% of cases.

There is a reliable dose-response between fibre and water intake and stool bulk and frequency. A dietary history will determine whether there is sufficient fibre in the diet in the form of cereals, grains, and fruit and vegetables. Increasing dietary fibre to the recommended daily intake of approximately 30 g or the use of fibre supplements such as psyllium should help in those patients with fibre deficiency. Adequate daily fluid intake is also important to maximise the benefit of fibre. However, increasing fibre intake beyond the required amount results in bloating or flatulence in many patients without relieving constipation, and may even aggravate it. Similarly, merely increasing the daily fluid intake in the absence of adequate fibre will not improve constipation.

Increasing physical activity can promote colonic motility, so an active lifestyle can be encouraged. As constipation may be exacerbated by stress and depression, these factors should be addressed if they are present.

Pharmacological measures

Many patients who present with constipation will have already tried a variety of non-prescription remedies. Enquire about the use of these remedies before deciding the best approach to treatment.

The numerous agents commonly used to treat constipation can be classified according to their mechanism of action (Table 1). Their relative efficacy and tolerability has generally not been well studied. The choice of treatment is therefore based on the mechanism of action, required onset, duration of action and patient preference. Trial and error is often required to determine the optimal management plan.

Bulking agents

Hydrophillic organic polymers (including psyllium and bran) function by sequestering extra water in the stools. The resulting increase in the volume of luminal contents is thought to stimulate intestinal activity and thereby enhance the speed of transit. A change in stool consistency associated with the increased water content may also ease defecation. The bulking agents are often the first line of treatment. However, fermentation of fibre in the colon can result in bloating and flatulence, particularly if the patient's diet already has sufficient fibre.

Osmotic laxatives

The capacity of the intestine to absorb some molecules and ions, such as magnesium salts, is limited. Other molecules, such as lactulose and sorbitol, are completely unabsorbed. To maintain an iso-osmolar state, these substances draw water

Table 1

Treatments for constipation in adults

Constituent	Dose	Time to onset
Bulking agents		
Ispaghula	1 sachet or teaspoon in water	24 hours, maximum effect at 2–3 days
Psyllium (multiple formulations and additives)	Per packet* – two teaspoons 1–3/day	24 hours, maximum effect at 2–3 days
Sterculia	1–2 teaspoons 1–2/day	24 hours, maximum effect at 2–3 days
Osmotic agents		
Oral		
Lactulose	15–30 mL 1–2/day	1–2 days
Macrogol (PEG 3350) with electrolytes	1–2 sachets each in 125 mL water, can give up to 8 for faecal impaction	Variable
Magnesium sulfate	15 g in 250 mL water daily	1 hour
Sorbitol liquid	20 mL 1–3/day	2–3 days
Sodium phosphate	Per packet*	½–6 hours
Sodium picosulfate (multiple formulations and additives)	Per packet*	Variable
Rectal		
Sodium phosphate	133 mL single dose	2–5 minutes
Sodium citrate/sorbitol/sodium lauryl sulfoacetate	5 mL	30 minutes
Stool softeners		
Docusate	2 x 120 mg tablets daily	1–3 days
Stimulant laxatives		
Oral		
Bisacodyl	1–2 x 5 mg tablets daily	6–12 hours
Senna/sennosides (multiple formulations and additives)	Per packet*	6–12 hours
Rectal		
Bisacodyl (multiple formulations)	Per packet*	15–60 minutes
Lubricants		
Oral		
Paraffin emulsion	15–30 mL two hours before lying down	2–3 days
Rectal		
Glycerol suppository	1 daily	5–30 minutes

* doses as recommended on packaging

into the intestinal lumen resulting in a laxative effect. Osmotic laxatives can be tried if the bulking agents are not appropriate or are ineffective.

The non-absorbable sugars are fermented in the colon so they can cause bloating, distension and flatulence which may limit their use. They should not be used by people with diabetes. Long-term use of magnesium salts is not recommended, particularly in patients with renal impairment.

Another approach is the use of large osmotically active polymers such as polyethylene glycol (PEG or macrogol). They are made iso-osmolar with intestinal contents so the water ingested with them is retained in the gut. The polymers are not absorbed, making them more suitable for long-term use in low volume. They can be used if simpler measures are ineffective, and are also used to prepare patients for colonoscopy.

Stimulant laxatives

Stimulant laxatives are often combined with stool softeners and may be useful in patients with poor colonic motility.

Diphenylmethane derivatives inhibit water absorption after activation, by endogenous esterases in the case of bisacodyl, or by colonic flora in the case of sodium picosulfate. These laxatives can precipitate cramping and electrolyte wasting.

Anthraquinones are available as mixtures of compounds (such as senna) and lead to water secretion following mucosal contact as well as direct stimulation of enteric nerve endings. There is

a suggestion of a damaging effect on the colonic mucosa and increasing doses are often needed over time. The chronic use of stimulant laxatives should be avoided.

Stool softeners and lubricants

Stool softeners such as docusate are detergents that facilitate the interaction between colonic water and stool. Lubricants, such as paraffin, have no pharmacological interaction with colonic mucosa, but alter stool composition in addition to their lubricating effect. Prolonged use of paraffin may cause malabsorption of fat soluble vitamins and should be used only in special circumstances, for example in some patients with cystic fibrosis. Liquid paraffin should not be used by patients at risk of aspiration.

Neuromuscular drugs

The benefit of these drugs is in their known adverse effect of diarrhoea, but they are not available primarily for this purpose and there are no clinical trials supporting their use. Local chloride channel activators (lubiprostone) and $5HT_4$ receptor modulators like cisapride, prucalopride and tegasarod, are not available in Australia.

Methylnaltrexone

Methylnaltrexone is a peripherally acting mu opioid receptor antagonist. It is administered subcutaneously, and is used in patients with opioid-induced constipation. It is only approved for use in the setting of palliation, and is contraindicated in malignant bowel obstruction.

Pregnancy

Constipation is a common problem in pregnancy and iron supplements may also contribute to this. Fibre supplements, bisacodyl, lactulose and docusate all have reliable safety and efficacy in pregnancy. Although stimulant laxatives have been shown to be more effective, there is less certainty about their safety.

Conclusion

When non-pharmacological measures fail, consider prescribing a bulking agent. If this does not help then one of the osmotic laxatives can be tried, although there is little evidence to guide therapy, and there are failures with all approaches. The dose of laxative may need to be titrated to balance the benefit with any adverse effects. Long-term therapy with bulking agents, polyethylene glycol or lactulose is considered to be safe.

Stimulant laxatives can be used either alone or in combination with osmotic laxatives in patients with resistant chronic constipation. Long-term stimulant laxatives are avoided as they may induce melanosis coli, tolerance or cathartic colon and there is little evidence for their efficacy.

Treatment refractory constipation should prompt reconsideration of secondary causes. Referral to specialist services and physiological testing may be needed.

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Conflict of interest: none declared

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Self-test questions

The following statements are either true or false (answers on page 131)

5. Long-term use of laxatives containing magnesium should be avoided in patients with renal disease.
6. Liquid paraffin should be avoided in patients with risk of aspiration.