

REVIEW ARTICLE

CONSTIPATION: A PHARMACIST'S VIEW AND ROLE

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Constipation is a common and widely seen condition in adults as well as children. The goal of managing constipation is reducing complications associated with it so as to improve the patient's quality of life. The pharmacist can play a vital role while reviewing the patient's medications and herbal supplements to rule out secondary causes of constipation. The pharmacist also plays an integral role in choosing appropriate therapies for primary constipation and monitoring the efficacy and toxicity of these agents. Pharmacists ensure that the patients are being very convincingly counseled and recommended to implement lifestyle modifications including increased fiber intake, hydration, and increased physical activity. This article briefly compiles some necessary information regarding causes and remedies of constipation.

Key words: Constipation, Herbal supplements, Hemorrhoids, Laxatives.

INTRODUCTION

Constipation means different things to different people. For many people, it simply means infrequent stools. For others, however, constipation means hard stools, difficulty in passing stools (straining), or a sense of incomplete emptying after a bowel movement. The number of bowel movements generally decreases with age. 95 percent of adults have bowel movements between 3 to 21 times per week, and this would be considered normal. The most common pattern is one bowel movement a day, but this pattern is seen in less than 50% of people (Sukumar and Shashirekha, 2014). Moreover, most people are irregular and do not have bowel movements every day or the same number of bowel movements each day. Medically speaking constipation usually is defined as fewer than three bowel movements per week. The cycle of constipation is shown in **Figure 1**.

Severe constipation is defined as less than one bowel movement per week. Going without a bowel movement for two or three days does not cause physical discomfort, only mental distress for some people (Goodman *et al* 2001). Contrary

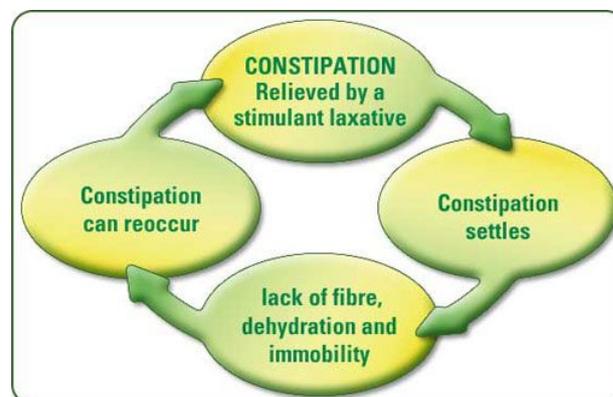


Fig. 1. The cycle of constipation

to popular belief, there is no evidence that "toxins" accumulate when bowel movements are infrequent. It is important to distinguish between acute (recent onset) constipation from chronic (long duration) constipation. Acute constipation requires urgent assessment because a serious medical illness may be the underlying cause (*e.g.* tumors of the colon). Constipation also requires an immediate assessment if it is accompanied by worrisome symptoms such as rectal bleeding, abdominal pain and cramps, nausea and vomiting and

involuntary weight loss. In contrast, the evaluation of chronic constipation may not require immediate attention, particularly if simple measures bring relief.

Symptoms of constipation

- ◆ No bowel movement for several days or daily bowel which are hard and dry
- ◆ Cramping abdominal pain
- ◆ Nausea and vomiting
- ◆ Weight loss
- ◆ Liquid or solid clay like stool in the child's underwear-a sign that stool is backed up in the rectum

Types of constipation

Slow transit constipation

It is delayed passage of bowel contents (slow transit) and is the most common form of constipation (Romero *et al* 1996). Causes include:

- ◆ Lack of fiber and dehydration are common causes of slow transit constipation
- ◆ Irritable bowel syndrome
- ◆ Travel or other change in daily routine
- ◆ Lack of exercise
- ◆ Immobility caused by illness or aging
- ◆ Medication use
- ◆ Overuse of laxatives
- ◆ Pregnancy

Outlet delay constipation

Causes of outlet delay constipation include:

- ◆ Physical disorder that cause loss of function such as colon cancer, intestine prolapses or rectal prolapses
- ◆ Injury caused by physical or sexual abuse
- ◆ Narrow system disease such as Parkinson's disease, multiple sclerosis or stroke
- ◆ Spinal cord injury (Prather and Ortiz-Camacho, 1998)

Constipation is sometimes caused by poor muscle tone in the pelvic floor (outlet delay). Excessive straining, the need for mechanical pressure on the vaginal wall or feelings of incomplete emptying may be a symptom of this type of constipation (Taylor, 1990).

Impact of constipation

Constipation significantly affects patients' quality of life. Patients with constipation usually suffer from significantly reduced general well-being and are more likely to describe symptoms of depression and anxiety, compared with the

general population. The degree of impairment in quality of life increases as symptoms become more severe. Constipation is associated with a heavy socioeconomic burden. Fees related to diagnostic testing and the cost of medications contribute substantially to this burden.

Common causes of constipation

- ◆ Not eating enough fiber in the diet
- ◆ Not drinking enough liquids (drink 8-ounce glasses a day)
- ◆ Lack of exercise (20 to 30 min walk every day is good)
- ◆ Some medications can cause constipation
- ◆ Irritable bowel syndrome (IBS) causes abdominal pain, bloating and constipation or diarrhea
- ◆ Abuse of laxatives
- ◆ Ignoring the urge to have a bowel movement
- ◆ Stroke
- ◆ Problems with the colon and rectum
- ◆ Intestinal obstruction, scar tissue (adhesions) tumors, Hirschsprung's disease or cancer can compress, squeeze or narrow the intestine and rectum and cause constipation
- ◆ Problems with intestinal function: chronic (disorders that last a long time, often years) idiopathic (a disease having unknown cause)
- ◆ Certain diseases
- ◆ During pregnancy, women may be constipated because hormonal changes or because the heavy uterus compresses the intestine
- ◆ Aging may also affect bowel regularity because of slower metabolism with results in less intestinal activity and muscle tone; poor dietary habits and increased medication use in older people
- ◆ People often become constipated in traveling because their normal diet and daily routine are disrupted (Passmore *et al* 1993)

Treatment of constipation

There are many treatments for constipation (**Table 1**) but the best approach relies on a clear understanding of the underlying cause (Sweetman, 2002).

Medications that cause constipation

- ◆ Pain relievers (drug containing morphine or codeine)
- ◆ Calcium pills and antacids that contain aluminium or calcium
- ◆ High blood pressure medication (Calcium channel blockers)
- ◆ Antiparkinson drugs

Table1. Different approaches for treatment of constipation

Treatment approach	Important characteristics/ mechanism	Side effects (if any)	Examples/medications
Dietary modification	Adding fibers to the diet by increasing vegetables and fruits (Rang <i>et al</i> 2003)	Increased gas (flatulence) with high fiber diet. Take high amount of water	
Exercise	People who leave sedentary lives are more frequently constipated. It shows no effect on the frequency of bowel movement	Not recommended with mineral oil or with prescription medication	Exercise can be recommended for its many other health benefits but not for its effect on constipation
Biofeedback	Training can teach patients with pelvic floor dysfunction how to make their muscles work more normally and improve their ability to defecate (Satoskar <i>et al</i> 2009)	-	A pressure-sensing catheter is placed through the anus and into the rectum. Each time a patient contracts the muscles, the muscles generate a pressure that is sensed by the catheter and recorded on a screen. By watching the pressure on the screen, patients attempt to learn how to relax and contract their muscles more normally. Most of the colon, except for the rectum is removed
Surgery	It is ultimate treatment for problematic constipation, which occurs due to diseases of colon or laxative abuse (Tortora and Grabowski, 1996)		
Electrical pacing	It is under experimental phases. It may be done using electrodes implanted into the muscular wall of the colon. The electrodes exit the colon and are attached to an electrical stimulator		
Lubricant laxatives	Contains mineral oil as either plain oil or an emulsion of the oil. Oil coats the stool particles and prevents water removal. Effective when short-term treatment is necessary		Long-term use can absorb oil soluble vitamins from the intestine, which upon prolonged period lead to deficiency of these vitamins. Mineral oil decreases absorption of warfarin and oral contraceptives <i>e.g.</i> Docusate; after surgery, child birth or heart attack.
Emollient laxatives (stool softeners)	It improves the ability of water within the colon to penetrate and mix with stool		Used for individuals with hemorrhoids or and the fissures

	and this increased water in the stool softens the stool.		
Hyperosmolar laxatives	They are indigestible, unabsorbable compounds that remain within the colon and retain the water that already is in the colon, resulting in softening of the stool.		This effect is dose related, so reducing the dose can reduce gas. <i>e.g.</i> Lactulose, (Krista lose) Sorbitol, Polyethylene glycol (Mira Lax)
Saline laxatives	Available for prescription only. Only for long-term use. They contain non-absorbable ions such as magnesium, sulphate, phosphate and citrate. These ions remain in the colon and cause water to be drawn into the colon, resulting in softening of the stool.	They may be digested by colonic bacteria and turned into gas, resulting in unwanted abdominal bloating and flatulence. Magnesium being partially absorbed from the intestine is eliminated from the body by kidneys. Therefore, individuals with impaired kidney functions may develop toxic levels of magnesium. Major diarrhea may also develop with the use of saline laxatives.	Milk of Magnesia (Mildest saline laxatives). Epsom salt (more potent saline laxative that contain magnesium sulphate) Potent saline laxatives should not be used on a regular basis.
Stimulant laxatives	They cause the muscles of the small intestine and colon to propel their contents more rapidly. They also increase the amounts of water in the stool, either by reducing the absorption of the water in the colon or by causing active secretion of water in the small intestine.	They are very effective but can cause severe diarrhoea with resulting dehydration and ion of electrolytes. (specially potassium). More likely than other types of laxatives to cause intestinal champing.	Most commonly used stimulant laxative contain Cascara (castor oil) Senna (<i>e.g.</i> Lax, Senakot) Aloe Bisacodyl (Duicolax Correctol)
Enemas	By distending the rectum all enemas stimulate the colon to contract and eliminate stool. Instructions must be followed properly. Retention of enema should be there until cramps are felt. Defecation usually occurs between few minutes after the insertion of enema.	Chronic use of these agents may damage the colon and worsen constipation. Enemas are meant for occasional rather than regular use. Frequent use of enemas can cause disturbances of the fluids and electrolytes in the body, especially true for tap water enemas. Soapsuds enemas are not recommended because they can damage rectum	<i>Saline enemas</i> cause water to be drawn into the colon. <i>Phosphate enemas</i> (<i>e.g.</i> Fleet Phosphosoda) Stimulate muscles of the colon. <i>Mineral oil enemas</i> softens hard stools <i>Emollient enemas</i> (<i>e.g.</i> Lolace micro enema contains agents that soften the stool. Enemas are particularly useful when there is impaction (hardening of stool in the rectum)

Suppositories	Different types of suppositories have different mechanisms of action.	Should not be used for long-term treatment, as these are chances of permanent colonic damage.	Stimulant suppositories (<i>e.g.</i> Bisacodyl) Glycerin suppositories act by irritating rectum.
Combination products			Senna + Psyllium Senna + Docusace Senna + Glycerin Casanthranol + Docusate + Glycerin

- ◆ Antispasmodics ◆ Antidepressants
- ◆ Ion supplements ◆ Diuretics ◆ Anticonvulsants
- ◆ If you take medicine for another problem, be sure to ask your doctor whether it could cause constipation. If you are on medications that cause constipation, discuss with your doctor your options, such as a stool softener. Whenever a significant or prolonged change in bowel habits occurs, check with your doctor.

Child constipation treatment

- ◆ Treatment depends on the child's age and severity of the problems
- ◆ Make sure your child gets enough fiber foods in their diet every day
- ◆ Children need different amounts of fiber at different ages. A child's daily fiber requirements can be calculated by adding five to the age of the child. For example, a seven year old child needs $7 + 5 = 12$ g of fiber daily
- ◆ Make sure your child drinks enough liquids every day. It is very important to drink plenty of fluids to help pass the stool
- ◆ Make sure your child gets enough exercise everyday
- ◆ Ensure that your child does not ignore the urge to have a bowel movement, which they often do out of either embarrassment to use a public bathroom, fear or lack of confidence in the absence of a parent, or uncoiling ness to take a break from play
- ◆ Constipation is caused by medicine or disease. Always check with your child's doctor
- ◆ Sometimes, a child may need an enema to remove the stool or a laxative to soften it or prevent a further episode. However, laxatives can be dangerous to children and should be given only with a doctor's approval

Self care and eating habits during constipation

If one feels not passing stool as often as you normally do. Your stool becomes hard and dry, and it is difficult to pass. You might feel bloated

and have pain, or you might have to strain when you try to go. Some medicines, and even some vitamins, can make you constipated. You can also get constipated if you are not getting enough fiber, using the bathroom as soon as you feel the urge to go, or getting enough exercise. Try to get to know your normal bowel movement pattern, so that you can keep constipation from getting worse. Exercise regularly. Drink more water and eat more fiber. Try to walk, swim, or do something active at least 3 or 4 times a week. You can also train your bowels to be more regular. It may help to go to the bathroom every day at the same time. For many people, this is after breakfast or dinner. Moreover, do not skip meals and avoid processed or fast foods, such as white breads, pastries, doughnuts, sausage, fast-food burgers, potato chips, and French fries. Many foods are good natural "laxatives" that will help you move your bowels. High-fiber foods help waste move through your body. Add foods with fiber to your diet slowly because eating more fiber can cause gas. Drink 8 to 10 cups of liquids, especially water, every day. Ask your doctor for the right amount of fiber to take in each day. Males, females, and different age groups all have different daily fiber needs. Too much fiber can cause bloating and gas.

Most fruits will help ease constipation. Berries, peaches, apricots, plums, raisins, rhubarb, and prunes are just some that may help. Do not peel fruits that have edible skins, since a lot of the fiber is in their skins. Choose breads, crackers, pasta, pancakes, and waffles made with whole grains, or make your own. Use brown rice or wild rice instead of white rice. Eat high-fiber cereals. Vegetables can also add fiber to your diet. Some high-fiber vegetables are asparagus, broccoli, corn, squash, and potatoes (with the skin still on). Salads made with lettuce, spinach, and cabbage will also help. Legumes (navy beans, kidney beans, chick peas, soy beans, and lentils), peanuts, walnuts, and almonds will also add fiber to your diet. Other foods you can eat

are: Fish, chicken, turkey, or other lean meats. These do not have fiber, but they will not make constipation worse. Snacks such as raisin cookies, fig bars, and popcorn and you can also sprinkle 1 or 2 teaspoons of bran flakes, ground flax seeds, wheat bran, or psyllium on foods such as yogurt, cereal, and soup. Or, add them to your smoothie. You can buy stool softeners at any pharmacy. They will help you pass stool more easily.

Medical assistance during constipation

Your doctor may prescribe a laxative to relieve your constipation. It may be a pill or liquid. Do not take it if you have severe stomach pain, nausea, or vomiting. Do not take it for more than 1 week. It should start to work in 2 to 5 days.

- ◆ Only take a laxative as often as your doctor recommends. Usually, you take them with meals and at bed time
- ◆ You can mix powder laxatives with milk or fruit juice to make them taste better
- ◆ Always drink plenty of water (8 to 10 cups a day) when you are using laxatives
- ◆ Store your laxative medicine safely in a medicine cabinet, where children cannot get to it
- ◆ Do not take any other laxatives or medicines before talking with your doctor. This includes mineral oil.

Some people get a rash, nausea, or sore throat while taking laxatives. Women who are pregnant or breastfeeding and children under age 6 should not take laxatives. Bulk-forming laxatives can help pull water into your intestines and make your stools more bulky. Call your doctor if you: Have not had a bowel movement in 3 days, are bloated or have pain in your stomach, feel nauseous or throw up or have blood in your stool.

Prevention of constipation

- ◆ Eating a well-balanced diet with enough fiber beans, bran's, whole wheat grain, fresh fruits and vegetables
- ◆ Drink plenty of water and other fluids
- ◆ Liquids such as fruit and vegetables juices, clear soups, add fluid to the colon and bulk to stools making bowel movements softer and easier to pass

REFERENCES

Goodman LS, Gilman A, Hardman JG, Limbird L, Limbird LE. The Pharmacological Basis of Therapeutics. Tenth edition, Mc Graw-Hill Inc., US: 2001; 1043.

- ◆ Liquids that contain caffeine like coffee and cola drinks alcohol tend to dry obey digestive system by their dehydrating effect
- ◆ Exercise regularly
- ◆ Regular exercise helps the digestive system to stay active and healthy; a 20-30 min walk every day may help
- ◆ Do not ignore the urge to defecate
- ◆ People who ignore the urge to have a bowel movement may eventually stop feeling the urge that can lead to constipations
- ◆ Set aside theme for undisturbed toilet visits such as after breakfast or dinner
- ◆ Do what is normal and do not rely unnecessarily on laxatives
- ◆ Mild constipation does not need laxatives. Use laxatives only if a doctor says

Constipation and hemorrhoids

Hemorrhoids (also called piles) may result from constipation (straining to move stool). The most common cause of hemorrhoids is straining during bowel movements. Hemorrhoids are painful, swollen veins in the lower portion of the rectum or anus. Rectal bleeding may occur, appearing as bright red streaks on the surface of the stool. Hemorrhoids are either inside the anus (internal) or under the skin around the anus (external), sometimes lining to push out from the anal opening. This condition, known as rectal prolapse, may lead to secretion of Mucus from the anus. Eliminating the cause (straining) is the only treatment necessary. Severe of chronic prolapse requires surgery to strengthen & tighten the anal sphincter muscle or to repair the prolapsed lining.

How a pharmacist can counsel constipation patients

A pharmacist should try to motivate the patients suffering from constipation, to correct condition both by medication and bringing changes in their lifestyle. Pharmacists also counsel the normal people to follow good dietary habits to prevent chances of developing constipation.

Conclusion

Constipation is a common problem among all age groups and can be managed with medicines, herbal supplements as well as implementation of lifestyle modifications.

Passmore AP, Wilson-Davies K, Stoker C, Scott ME. Chronic constipation in long stay elderly patients: A comparison of lactulose and a senna-fibre combination. *BMJ* 1993;307

- (6907):769-71.
- Prather CM, Ortiz-Camacho CP. Evaluation and treatment of constipation and fecal impaction in adults. *Mayo. Clin. Proc.* 1998;73(9):881-6. [DOI: 10.4065/73.9.881]
- Rang HP, Dale MM, Ritter JM, Moore PK. Pharmacology, 5th edition, Churchill Livingstone, London: 2003; 375.
- Romero Y, Evans JM, Fleming KC, Phillips SF. Constipation and fecal incontinence in the elderly population. *Mayo. Clin. Proc.* 1996;71(1):81-92. [DOI: 10.4065/71.1.81]
- Satoskar RS, Bhandarkar SD, Rege NN. Pharmacology and Pharmacotherapeutics. 21st edition, Popular Prakashan, Mumbai: 2009; 600-10.
- Sukumar BS, Shashirekha HK. Constipation cure and treatment through diet, yoga, home remedies. *Int. J. Ayur. Pharm. Res.* 2014;2(5):6-11.
- Sweetman SC. Martindale: The complete Drug Reference. 33rd edition, Pharmaceutical Press, London: 2002; 1790-1.
- Taylor R. Management of constipation. 1. High fiber diets work. *BMJ* 1990;300(6731):1063-4.
- Tortora GJ, Grabowski SR. Principle of Anatomy and Physiology. 8th edition, HarperCollins, New York: 1996; 797-800.
- http://www.constipationadvice.co.uk/achieving_inner_health/dr_porter_constipation_article_6.php
- <http://nucleushomeopathy.com/Constipation.aspx>
- <http://www.medicinenet.com/constipation/article.htm>
- <http://www.hemorrhoid.net/constipatchild.php>
- <http://www.uptodate.com/contents/constipation-in-adults-beyond-the-basics>
- http://www.quantumhealth.in/disease_details.php?did=9
- http://www.healthykidss.net/Depression/Information_on_Constipation_in_Children_3640.html
