

The Association of Colon and Rectal Surgeons of India

(A Section of ASI)



CONSTIPATION, ODS AND RECTAL PROLAPSE PRACTICE GUIDELINES 2021



STANDING 1st ROW (Left to Right) - Rajashekar Mohan, Pravin P. Gore, Fazlul Qadir Parray, Tamonas Chaudhuri, R Kannan, Ajit Naniksingh Kukreja, Arshad Ahmad, M Kanagavel DING 2nd ROW (Left to Right) - Kamal Gupta, C P Kothari, Ashok Kumar, Atul Deshpande, Ajay K Khanna, Bhanwar Lal Yadav, Prajesh Bhuta, Avanish Saklani, Shekhar Suradkar SITTING - (Left to Right) - Roy V Patankar, Mrs Kumkum Singh, Kushal Mital, Niranjan Agarwal, Parvez Sheikh, Pradeep P Sharma, Nisar A Chowdri

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Acknowledgments: The authors would like to acknowledge CBCC Global Research for their writing and editorial support in the development of ACRSI Management of Constipation, ODS and Rectal Prolapse guidelines.

Foreword

Disorders of the colon and rectum are not only very common but complex too and many a time difficult to treat. The urge to provide best treatment amongst the vast majority available is even more perplexing and frustrating at times. This gets further compounded by the lack of supporting evidences locally. Our members are more guided by evidences produced by other part of the world though it is a well known fact that colorectal disorder occurrences, behaviour and treatment responses may differ across the continents. A need was therefore felt to compile various available literature for some common colorectal disorders and produce them in the form of Practice Guidelines suitable for our members. It is an established fact that treatment modalities guided by the explicit, careful and judicious use of the best evidence available serves as a guide for most appropriate clinical decision making and patient care.

The Association of Colon and Rectal Surgeons of India lead by its team of expert faculties in their respective fields have done some excellent literature search and collated the available experiences to prepare this guidelines for you. We hope this will serve as a ready reckoner for our members in their times of need and help them to combat many litigations too.

I take this opportunity to thank all the contributors for their constant support in this endeavour.

Dr. Niranjan Agarwal President-ACRSI

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CONSTIPATION, ODS AND RECTAL PROLAPSE PRACTICE GUIDELINES 2021

Summary of recommendations

Physical examination and diagnostic tests

- A detailed history-taking for symptoms and a thorough physical examination by digital rectal examination should be performed in patients with constipation (Strong recommendation based on low-quality evidence, 1C)
- The routine use of blood tests is not recommended, but it may be done to identify secondary causes of constipation (Strong recommendation based on low-quality evidence, 1C)
- Radiographic examination or endoscopy is not typically required in patients with constipation but should be performed in patients with significant comorbidities or when alarming symptoms, such as new-onset constipation, anemia, blood in the stool, unexplained weight loss, or a family history of colon cancer, are present. (Strong recommendation based on low-quality evidence, 1C)

Functional studies

- Functional tests (anorectal physiology and colon transit investigations) are recommended in patients with chronic constipation who do not respond to first-line therapeutic measures. (Strong recommendation based on low-quality evidence, 1C)
- Anorectal manometry helps evaluate underlying etiologies: defecatory function (coordination of abdominal compression and anal relaxation) and intrinsic innervation by the rectoanal inhibitory reflex, sphincter function, and rectal sensitivity/compliance. (Strong recommendation based on moderate-quality evidence, 1B)
- A balloon expulsion test is recommended to predict defecatory disorders and may predict a better response to biofeedback therapy, but other rectoanal physiological tests should be performed to confirm diagnosis. (Strong recommendation based on low-quality evidence, 1C)
- In patients testing negative on anorectal physiology tests, investigations of colonic transit time (radiopaque markers or scintigraphy) to differentiate subtypes of defecatory disorders and slow-transit constipation are recommended. They are widely available, inexpensive, and easy to use. (Strong recommendation based on moderate-quality evidence, 1C)
- Radiological imaging tests (defecography, either barium or magnetic resonance) can be used for identifying anatomical abnormalities associated with obstructive defecation. (Strong recommendation based on low-quality evidence, 1C)

Management of constipation

Non-operative management

- Chronic constipation should first be treated by lifestyle modifications that include increase in dietary fibers, adequate fluid intake, and physical activity. These are easy to implement, incur low cost, and have low risk of serious adverse events. (Strong recommendation based on moderate-quality evidence, 1B)
- The use of laxatives is recommended in the management of chronic constipation. Osmotic laxatives such as lactulose and polyethylene glycol are preferred over stimulant laxatives such as bisacodyl. Newer agents such as lubiprostone and linaclotide are suggested when patients do not respond to osmotic and stimulant laxatives. (Strong recommendation based on moderate-quality evidence, 1B)
- Biofeedback therapy should be recommended as an initial treatment for symptomatic pelvic floor dyssynergia. (Strong recommendation based on moderate-quality evidence, 1B)

Surgical management of constipation

- Surgical treatment options (resection and non-resection) should be considered when all other conservative treatments fail. Surgery should be offered as a treatment choice only after confirming that the cause of chronic constipation is within the colon and/or rectum (slow-transit constipation and evacuation disorder) by performing physiological tests. (Strong recommendation based on moderate-quality evidence, 1B)
- Total or segmental colectomy can be effective in patients with normal upper gastrointestinal function and slow-transit constipation without a defecatory disorder but unresponsive to medical treatment. (Strong recommendation based on low-quality evidence, 1C)
- Surgery to treat structural defects causing evacuation disorder (i.e., intussusception, rectocele, rectal prolapse, descending perineum syndrome) as detected on diagnostic imaging procedures is an effective treatment when all conservative treatment options fail. (Strong recommendation based on low-quality evidence, 1C)
- Continuous direct sacral nerve stimulation (SNS/SNM) may be used to treat chronic constipation (slow-transit constipation and/or evacuation disorder), which is the least invasive surgical option, when all conservative treatments have failed. It may, however, have lower success rates and complication rates. (Weak
 - 1

Summary of recommendations

recommendation based on moderate-quality evidence, 2B)

• Antegrade colonic enema may be a non-resecting surgical option for flushing large intestine orthograde through an appendiceal stoma in selected patients with slow-transit constipation or in those with refractory defecatory disorders. (Weak recommendation based on low-quality evidence, 2C)

Management of Complete Rectal Prolapse

- Surgical repair of rectal prolapse is the only treatment for full thickness external rectal prolapse. When a patient is not responsive to nonoperative treatments, surgery should be considered for the treatment of severe symptoms of obstructed defecation. (Weak recommendation based on low-quality evidence, 2C)
- Abdominal or perineal operation is dictated both by patient characteristics and surgeon preferences. (Weak recommendation based on low-quality evidence, 2C)
- Among the available treatments, abdominal rectopexy for rectal prolapse seems to have an advantage over other procedures. (Strong recommendations based on low-quality evidence, 1C)

Introduction

Constipation is a common gastrointestinal condition that affects patients' quality of life (QoL). In adults, the global prevalence of constipation is around 16% and is higher (33.5%) in patients aged >60 years.(1) Constipation is characterized by dysfunction of colonic motility and the defecation process.(2) According to the Rome IV criteria, patients with functional constipation have at least 2 of the following symptoms 3 months prior to symptom onset and at least 6 months prior to diagnosis of constipation: during >25% of defecation related straining, patient passes lumpy or hard stools, has a sensation of incomplete evacuation or of anorectal obstruction/blockage or needs to use manual maneuvers to defecate, and has less than 3 evacuations per week.(3) Constipation has multifactorial etiologies that include diet, medicines, obesity, physical activity, endocrine or metabolic disease, neurological disease, psychological conditions, and anorectal or colonic structural abnormalities.(4) Based on the underlying mechanism, constipation can be classified as either (a) slow-transit constipation, (b) defecation disorders, or (c) normal-transit constipation. To treat patients with constipation, individualized approach should be used depending on the nature and severity of symptoms.

Obstructed defecation syndrome (ODS) is a type of constipation associated with impaired colonic transit and/or pelvic floor dysfunction. Symptoms of ODS include hard and fragmented stools, need for straining at defecation, sense of incomplete evacuation, repetitive toilet visits, tenesmus, urgency, pelvic heaviness, and self-digitation. Generally, ODS is more difficult to diagnose than constipation because of its multifactorial etiology; thus, a detailed examination is necessary for its diagnosis and treatment. (5, 6) Furthermore, ODS can be either functional or organic. Functional ODS can occur due to anxiety/depression, anismus or non-relaxing puborectalis muscle on straining, rectal hyposensation, pudendal neuropathy, or spastic colon. Organic ODS can occur due to peritoneo-, entero-, or sigmoidocele; colpocele; cystocele; recto-rectal intussusception; and solitary rectal ulcers.(5)

Methodology

This practice guideline for the management of constipation and rectal prolapse is framed by the experts of the Association of Colon & Rectal Surgeons of India (ACRSI). An organized literature search in PubMed, Cochrane database of collected reviews, and Google Scholar was performed. The searches were restricted to English articles.

The draft was shared with expert committee members through email and a consensus was reached during a consensus meeting conduced over video conferencing. A method adopted by American Society of Colon and Rectal Surgeons (ASCRS) was used to derive quality of evidence, wherein 1 was assigned to strong recommendation and 2 was assigned to weak recommendations. These recommendations were again categorized based on the level of evidence as A for RCTs without important limitations or overwhelming evidence from observational studies, B for RCTs with important limitations (inconsistent results, methodologic flaws, indirect or imprecise) or exceptionally strong evidence from observational studies, and C for observational studies or case series or consensus opinion of the expert group.(7)

Supporting evidence	Quality of evidence	Grade of recommendation	Quality of evidence	
RCTs without important limitations or overwhelming evidence from observational studies	Benefits clearly outweigh risk and burdens or vice versa	1	A	
	Benefits closely balanced with risks and burdens	2	A	
RCTs with important limitations (inconsistent results, methodologic flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Benefits clearly outweigh risk and burdens or vice versa	1	В	
	Benefits closely balanced with risks and burdens	2	В	
Observational studies or case series or consensus opinion of the panel	Benefits clearly outweigh risk and burdens or vice versa	1	C	
	Uncertainty in the estimates of benefits, risks and burden; benefits, risks, and burden may be closely balanced	2	C	

Table 1 The GRADE system for grading recommendations

Clinical evaluation

History

Despite low evidence, a majority of clinical practice guidelines recommend that in the clinical setting, constipation is diagnosed usually based only on the clinical presentation (signs and symptoms).(8) History-taking should focus on 3 aspects: if functional chronic constipation is diagnosed in accordance with the Rome IV criteria, the causes for constipation and other alarming signs should be identified. A detailed evaluation of signs and/or symptoms helps differentiate slow-transit constipation from a functional defecation disorder. Information should be gathered regarding the onset and duration of symptoms, difficulty in defecation, excessive straining, time spent on toilet, frequency and consistency of stool, feeling of complete or incomplete evacuation, and use of laxatives/suppositories/enema. Validated questionnaires like the Bristol Stool Scale or the Patient Assessment of Constipation Symptoms (PAC-SYM) questionnaire can be used for clinical evaluation. On clinical suspicion of ODS, severity scoring should be done using an ODS scoring system (Table 2).(9) Information related to diet, hydration status, and physical activity and other secondary causes should also be carefully evaluated to identify the factors contributing to constipation.(10, 11) Additional test should be performed in patients presenting with symptoms such as rectal bleeding, change in caliber of stools, blood in stool, weight loss, anemia, or a family history of colorectal cancer.(2)

 Table 2 Surgical constipation score: Constipation and Bowel Activity Score (CABAS)

Symptoms	Frequency				
	Never	Rarely	Sometimes	Usually	Always
Excessive straining	0	1	2	3	4
Incomplete evacuation	0	1	2	3	4
Use of laxatives	0	1	2	3	4
Digital pressure	0	1	2	3	4
Constipation	0	1	2	3	4

Never, 0; rarely, <1 per month; sometimes, <1 per week, \geq 1 per month, <1 per day, \geq 1 per week, always, \geq 1 per day.

A collective score of >5 is suspicious of ODS, >10 is indicative of ODS, and >15 is diagnostic of ODS.

Physical examination and diagnostic tests

Physical examination should include abdominal examination, anorectal examination, and evaluation for signs of anemia, weight loss, abdominal mass, liver enlargement, or palpable colon. Both inguinal regions should be examined to rule out any hernia in the supine position. Anorectal examination is carried out to rule out external hemorrhoids, skin tags, anal warts, fissures, or abnormal descent upon pushing.(2, 11)

During examination, the patient should be asked to simulate straining like during defecation, and any signs of leakage of stool secondary to fecal impaction, rectal prolapse, or a patulous anus should be recorded/ruled out. The anal wink reflex should be assessed using a cotton pad or a cotton-tipped applicator in all the 4 quadrants around the anus, wherein absence of anal contraction may indicate sacral nerve pathology.(12)

Digital examination is performed to assess sphincter tone (resting and squeeze) and to rule out any palpable rectal masses or obvious rectoceles. Anoscopy or rigid proctoscopy is not necessary but can prove helpful in assessing the presence of internal hemorrhoids or other anal pathological conditions. Patients more than 30 years of age complaining of constipation should be evaluated for electrolyte abnormalities, and colonoscopy should be performed.(2, 11) A colonoscopy should also be recommended if the patient presents with symptoms such as hematochezia, weight loss, anemia, and blood in the stool. In women, the vagina should also be examined for rectocele and cystocele.(13) In presence of alarming symptoms like new-onset constipation, anemia, blood in the stool, unexplained weight loss, or a family history of colon cancer, endoscopic evaluation should be carried out to rule out malignancy or other serious conditions. If a patient presents with symptoms of outlet constipation or does not respond to reasonable laxative therapy, pelvic floor dysfunction should be evaluated by confirming inappropriate contraction or failure of pelvic floor muscle relaxation while attempting to defecate; this can be evaluated using radiography, manometry, or lectromyography.(12, 14)

Diagnostic tests (e.g., blood tests, radiography, and endoscopy) are not routinely recommended in the initial evaluation of a patient with chronic constipation if there are no alarming signs or symptoms that necessitate identification of the secondary causes.(2, 13) A systemic review concluded that blood tests may not be a routine diagnostic test for constipation.(15)

ACRSI recommendations

- A detailed history-taking for symptoms and a thorough physical examination by digital rectal examination should be performed in patients with constipation (Strong recommendation based on low-quality evidence, 1C)
- The routine use of blood tests is not recommended, but it may be done to identify secondary causes of constipation (Strong recommendation based on low-guality evidence, 1C)
- Radiographic examination or endoscopy is not typically required in patients with constipation but should be performed in patients with significant comorbidities or when alarming symptoms, such as new-onset constipation, anemia, blood in the stool, unexplained weight loss, or a family history of colon cancer, are present. (Strong recommendation based on low-quality evidence, 1C)

Functional studies

Most patients with constipation respond adequately to first-line therapeutic measures; hence, specialized functional studies, namely, anorectal manometry, defecography, balloon topography, balloon expulsion test, and electromyography, are offered only to patients who do not respond to these measures. These functional tests are useful to diagnose the cause of the problem, anatomical and/or functional anorectal abnormalities. The various etiological factors evaluated in chronic constipation include intrinsic innervation by rectoanal inhibitory reflex (minimal incidence of primary neuropathies and Hirschsprung's disease in adults but increasing incidence of Chagas disease), defecatory function (abdominal compression or anal relaxation), rectal sensation/compliance (in neurological diseases and severe cases), and colonic transit. Although functional testing may not be available in all settings, procedures such as balloon expulsion test (BET) and whole gut transit evaluation using radiopaque markers may be performed even with limited resources.(8)

Anorectal manometry

Anorectal manometry consists of a series of measurements, including examination of anal sphincter function, rectal sensation, recto-anal reflexes, and rectal compliance. This anorectal function test is widely used as the first-line test for investigating incontinence. It is also used to identify any pelvic floor sphincter muscle weakness and to measure resting and squeeze pressure as well as to assess the length of the high pressure zone.(16) Manometry helps in detecting motor and sensory abnormalities of the anorectum in patients with constipation attempting defecation. In the absence of the recto-anal inhibitory reflex and increased anal canal pressures at rest, rectal biopsy should be carried to rule out Hirschsprung's disease.(17)

Manometry was beneficial in predicting slow-transit constipation, wherein 60% of the patients had abnormal patterns of motor activity.(18) Anal manometry findings have also been useful in predicting significant rectocele in patients with constipation.(19)

Manometry is also useful for diagnosing defecatory disorder. However, there is no gold standard for the diagnosis, and the asymptomatic general population may also show abnormal results. Therefore, a confirmatory approach with other anorectal physiological tests is recommended for diagnosing defecatory disorders.

Balloon expulsion test

The balloon expulsion test (BET) is useful to diagnose ODS, especially secondary to the non relaxing puborectalis muscle. In this test, patients are asked to expel a balloon inflated with 50 to 100 mL of saline and inserted in their rectum. Normal patients can expel it without any difficulty. Thus, BET is a functional evaluation, and the inability to pass the balloon suggests an outlet obstruction and merits additional evaluation.(17, 20)

A systematic review and meta-analysis examining BET as a screening test for dyssynergic defecation reported 70% sensitivity (95% CI: 53-82) and 81% specificity (95% CI: 75 86), and subject positioning (seated vs. left lateral decubitus) did not significantly affect test performance.(21)

The BET is also known to predict responses to biofeedback therapy,(22, 23) but these results are not uniform across studies.(24) Other recto-anal function tests should be performed to confirm a diagnosis.(25)

Colonic transit time measurement

Colonic transit time is the amount of time required for intestinal contents to pass. Colonic transit time helps estimate the colonic function and can provide an objective measurement that can be correlated with functional derangement of the colon.(17, 20) The radio-opaque marker technique is the most simple, popular, and suitable technique for studying rectal evacuation and assessing normal or slow colonic transit. In two-thirds of the patients, obstructed defecation may coexist with slow colonic transit and obstructive delay.(17, 26)

The measurement of total and segmental colonic transit time traced by radio-opaque markers is one of the methods used to distinguish between constipation due to colonic dysfunction (right colon and left colon) and constipation due to distal obstruction.(27)

Scintigraphy involves oral administration of isotopes, which, during their progression to the gastrointestinal tract, are monitored using a γ -camera at specific time intervals; this method is thus used to evaluate obstructed defecation under physiological conditions.(20, 28) Colonic transit scintigraphy is also a useful diagnostic tool for identifying patterns of motility disturbances during postoperative follow-up.(29)

Defecography

Defecography is usually performed if the results of the manometry and BET are inconclusive.(30) Two techniques help identify anatomical alterations: (a) radio fluoroscopy and (b) magnetic resonance imaging (MRI). Defecography is used to examine the anal canal and rectum at rest with voluntary anal contraction and during defecation. It provides information related to anatomical and functional changes in the anorectum. In patients with an outlet obstruction, the anorectal angle may not widen and the contrast may get expelled partially due to the failure of the puborectalis muscles to relax.(17, 31)

A systematic review and meta-analysis (N = 63 studies) reported that barium defecography detected more intussusception than magnetic resonance defecography (MRD) (odds ratio [OR] 1.52, 95% CI: 1.12-2.14; P = 0.009]). The review concluded that defecography could be considered the first-line diagnostic test, if resources are available, because structural abnormalities cannot be evaluated using non-imaging test modalities.(32) Another systematic review and meta-analysis involving 28 studies reported that MRD could be used for assessing pelvic floor dysfunction. MRD had a higher detection rate (37.16% vs. 25.08%; OR 2.23, 95% CI: 1.21-4.11, P = 0.010) and lower miss rates (1.20 vs. 37.35%, OR 0.05, 95% CI: 0.01-0.20, P = 0.0001) compared to clinical examination for enterocele. However, MRD had a lower detection and higher miss rate for rectoceles, rectoanal intussusception, and perineal descents compared to clinical examination.(33) An observational study with the Indian population (N = reported that MRD detected 192) structural abnormalities associated with ODS in more patients, and it can be a useful tool for evaluating ODS and detecting structural abnormalities, thereby guiding disease management.(34)

imaging method that prevents radiation exposure but allows global assessment of the pelvic floor function. In contrast to defecography, MRI is performed in the supine position. However, its role is not well-established yet and although it can potentially be the first choice among all imaging techniques for pelvic floor pathology, further research showing its benefits are needed.(20, 35, 36) Constipated patients have shown to prefer dynamic MRI over proctography due to greater comfort in the assessment of rectocele, sigmoidocele, and intussusception and measurement of the anorectal angle and perineal descent.(37)

ACRSI recommendations

- Functional tests (anorectal physiology and colon transit investigations) are recommended in patients with chronic constipation who do not respond to first-line therapeutic measures. (Strong recommendation based on llow-quality evidence, 1C)
- Anorectal manometry helps evaluate underlying etiologies: defecatory function (coordination of abdominal compression and anal relaxation) and intrinsic innervation by the rectoanal inhibitory reflex, sphincter function, and rectal sensitivity/compliance. (Strong recommendation based on moderate-quality evidence, 1B)
- A balloon expulsion test is recommended to predict defecatory disorders and may predict a better response to biofeedback therapy, but other rectoanal physiological tests should be performed to confirm diagnosis. (Strong recommendation based on low-quality evidence, 1C)
- In patients testing negative on anorectal physiology tests, investigations of colonic transit time (radiopaque markers or scintigraphy) to differentiate subtypes of defecatory disorders and slow-transit constipation are recommended. They are widely available, inexpensive, and easy to use. (Strong recommendation based on moderate-quality evidence, 1C)
- Radiological imaging tests (defecography, either barium or magnetic resonance) can be used for identifying anatomical abnormalities associated with obstructive defecation. (Strong recommendation based on low-quality evidence, 1C)

Dynamic MRI defecography is an alternative single

Management of constipation

Treatment for constipation aims to increase the frequency of stools, thus improving consistency and volume of the feces, feeling of completeness of evacuation without anorectal obstruction problems, and other symptomatic amelioration. The choice of treatment depends on the cause of the problem, that is, whether the constipation is secondary to medicines, is mechanical or metabolic, or is due to neuropathy/myopathy.(10, 38)

Non-operative management

Lifestyle modification

Lifestyle modification including consumption of adequate dietary fiber (>25 g/day), adequate fluid intake, and regular physical activity should be recommended for the management of patients with constipation.(39) Increasing dietary fiber intake by increasing consumption of food items rich in fiber is a milder alternative to laxative and enemas. Fibers increase bowel frequency and fecal bulk in patients with chronic idiopathic constipation, even in the setting of pelvic outlet obstruction. (2, 40, 41) Soluble, highly viscous, and lesser fermentable fiber supplements such as psyllium and konjac glucomannan help soften stools, promote laxation, and relieve constipation. Soluble fibers are considered more effective in treating chronic constipation compared to insoluble fibers; however, their role per se basis the available data is conflicting. (10, 39, 42) Fiber supplementation is associated with bloating, discomfort; fullness, and abdominal therefore, appropriate fluid intake is advisable when consuming such fibers.(10)

Routine exercise should also be recommended as an effective treatment option in patients with constipation as exercise improves both defecation pattern and total colonic transit time.(43, 44)

Clinical evidence

In a meta-analysis of 5 articles, dietary fibers showed increase in stool frequency in patients with constipation compared to placebo (OR 1.19, 95% CI: 0.58-1.80, P < 0.05).(45) A systematic review and meta-analysis of 7 randomized control trials (RCTs) evaluating effects of fiber supplementation on chronic idiopathic constipation in adults showed that supplementation significantly increased stool frequency (standardized mean difference [SMD] = 0.39, 95% CI: 0.03-0.76, P = 0.03) and softened stool consistency (SMD 0.35, 95% CI: 0.04-0.65, P = 0.02) compared with placebo. However, flatulence was significantly higher with fibers compared to placebo (SMD 0.56, 95% CI: 0.12-1.00, P = 0.01).(46)

A systematic review of 6 RCTs evaluating the efficacy of soluble and insoluble fiber supplementation in the management of chronic idiopathic constipation reported that compared with placebo, soluble fibers led to better improvements in global symptoms (86.5% vs. 47.4%),

straining (55.6% vs. 28.6%), pain on defecation and stool consistency, increase in the mean number of stools per week, and reduction in the number of days between review stools.(42) Another systematic and meta-analysis indicated that short-chain β-fructan supplementation improved bowel function bv significantly increasing the frequency of bowel movements.(47) In another RCT (N = 72), mixed soluble and insoluble fibers, compared to soluble fiber (psyllium) alone, were found to be equally efficacious in improving constipation and the quality of life (QoL). Furthermore, mixed fibers were more effective in relieving flatulence (53% vs. 25%; P = 0.01), bloating (43.8% vs. 25%; P = 0.1), and dissolvability of solution (mean ± SD: 5.26 ± 2.65 vs. $3.63 \pm 2.94; P = 0.02$.(48)

A systematic review and meta-analysis of 9 RCTs (N = 680) analyzing the effects of exercise on constipation indicated that exercise had significant benefits in improving symptoms of constipation (relative risk [RR] 1.97, 95% CI: 1.19-3.27, P = 0.009].(43)

ACRSI recommendation

 Chronic constipation should first be treated by lifestyle modifications that include increase in dietary fibers, adequate fluid intake, and physical activity. These are easy to implement, incur low cost, and have low risk of serious adverse events. (Strong recommendation based on moderate-quality evidence, 1B)

Laxatives

Laxatives are generally categorized as emollient laxatives or stool softeners, stimulants, and osmotics. Emollient laxatives such as docusates and dioctylsodium sulfosuccinate lower the surface tension and allow water to enter the bowel more readily. Stimulant laxatives such as bisacodyl, sodium picosulfate, and senna increase intestinal motility and water secretion in the bowel and accelerate colonic transit, whereas osmotic laxatives such as lactulose, polyethylene glycol (PEG), magnesium hydroxide, oral magnesium citrate, and sodium biphosphate are hyperosmolar agents that cause water secretion into the intestinal lumen by osmotic activity.(10, 49)

Generally, osmotic laxatives are considered relatively safe as they work within the colonic lumen and do not cause a systemic effect. However, they may cause electrolyte imbalance within the colonic lumen, hypokalemia, fluid and salt overload, and diarrhea; thus, they should be used with caution in patients with congestive heart failure and chronic renal insufficiency. Stimulant laxatives may cause abdominal cramping due to increased peristalsis, and should not be used in patients with suspected intestinal obstruction.(49)

Clinical evidence

Systematic reviews have reported better relief of constipation symptoms with both osmotic and stimulant laxatives compared with placebo; among them, the strongest evidence exists for PEG and tegaserod followed by lactulose and psyllium.(50, 51) Quality data are scarce for the effectiveness of other commonly used laxatives such as milk of magnesia, senna, and stool softeners in the management of chronic constipation.(50) A systematic review and meta-analysis of 7 RCTs (N = 1411) comparing the effects of osmotic or stimulant laxatives with placebo in patients with chronic idiopathic constipation showed that laxatives were superior to placebo in terms of reducing the risk of failure with therapy (RR 0.52, 95% CI: 0.46-0.60). Mean number of stools per week was significantly higher with laxatives compared with placebo (weighted mean difference [WMD] for number of stools per week: 2.55, 95% CI: 1.53-3.57).(52)

A Cochrane review of 10 RCTs determining the effect of lactulose or PEG in treating chronic constipation and fecal impaction indicated that PEG was better than lactulose in outcomes of stool frequency per week, form of stool, relief from abdominal pain, and the need for additional products.(53) In a systematic review and meta-analysis of 11 RCTs (N = 663), the osmotic laxative-lactitol-significantly increased weekly stool frequency (SMD 1.56; P < 0.001) and stool consistency (SMD 1.04; P < 0.001) compared with baseline values.(54) Another systematic review and meta-analysis reported significant increase in the number of defecations per week with PEG compared with placebo (10 studies; WMD 1.98 stools/week, 95% CI: 1.16-2.81, P = 0.0003) and lactulose (7 studies; WMD 1.01 stools/week, 95% CI: 0.41-1.62, P = 0.017).(55) PEG-based laxatives also proved effective and were well-tolerated in children compared with non-PEG laxatives.(56, 57)

The stimulant laxative—oral bisacodyl—was evaluated for its efficacy and safety during 4 weeks of treatment in patients with chronic constipation in a randomized, double-blind, placebo-controlled, parallel-group study. The number of complete spontaneous bowel movements per week during the treatment period significantly increased from baseline (1.1 ± 0.1) in the bisacodyl group (5.2 ± 0.3) versus the placebo group (1.9 ± 0.3) . The efficacy of bisacodyl was also seen in the number of complete spontaneous bowel movements per week, constipation-associated symptoms, and overall constipation QoL compared to placebo.(58)

A review of 5 RCTs evaluating the efficacy and safety of long-term treatment (>14 continuous days) with stimulant laxatives reported that stimulant laxatives such as bisacodyl and sodium picosulfate significantly improved stool consistency and increased the number of bowel movements per week versus placebo in patients with constipation.(59)

Newer agents for constipation

Several compounds with unique mechanisms of action are available for treating constipation. These may have laxative effects and improve patient satisfaction with bowel function. A newer agent could be considered when symptoms do not respond to other common laxatives.

Secretagogues

Lubiprostone

Lubiprostone is a prostone that selectively activates type 2 chloride channels in the apical membrane of the intestinal epithelium, and stimulates passive secretion of sodium. It also increases intestinal fluid secretion and improves small intestinal transit and stool passage.(2, 10) It is approved by the US Food and Drug Administration for treating chronic idiopathic constipation in adults, opioid-induced constipation in adults with chronic non-cancer pain, and irritable bowel syndrome (IBS) with predominant constipation in women ≥18 years of age.(2)

Clinical evidence

In a systematic review and meta-analysis of 9 RCTs (N = 1468) evaluating the efficacy and safety of lubiprostone in the treatment of chronic idiopathic constipation and IBS with constipation (IBS-C), lubiprostone treatment compared with placebo significantly improved the severity of constipation, stool consistency, abdominal pain, degree of straining, and abdominal bloating at 1 week ($P \le 0.03$) and 1 month ($P \le 0.004$), and abdominal bloating at 3 months (P = 0.03). There was no significant difference between lubiprostone and placebo groups for abdominal pain at 1 month (P = 0.21) and for other outcomes at 3 months.(60)

Linaclotide

Linaclotide is a potent agonist of guanylate cyclase C receptor present on the luminal surface of the enterocyte. It increases chloride and bicarbonate secretion into the intestinal lumen, increases secretion volume, and accelerates intestinal transit, thereby ameliorating constipation symptoms. It relieves abdominal pain by reducing visceral hypersensitivity. It is a therapeutic peptide comprising 14 amino acids that can be used for treating IBS-C and chronic idiopathic constipation.(2, 10, 61)

Clinical evidence

A meta-analysis of 6 RCTs evaluated the effects of linaclotide in patients with IBS-C or in those with chronic constipation. In patients with IBS-C, linaclotide compared with placebo showed \geq 30% improvement from baseline in average daily worst abdominal pain and an increase of \geq 1 complete spontaneous bowel movements (CSBMs) per week from baseline for \geq 50% of weeks (RR 1.95, 95% CI: 1.30-2.94; number needed to

treat [NNT]: 7, 95% CI: 5-11). In patients with chronic constipation, linaclotide compared with placebo showed improvement in endpoints, which included >3 CSBMs/week and an increase in 1 or more CSBM/week for 75% of weeks (RR 4.26, 95% CI: 2.80-6.47; NNT 7, 95% CI: 5-8). Linaclotide also improved stool form and reduced abdominal pain, bloating, and overall symptom severity in patients with IBS-C and in those with chronic constipation.(62) Various phase II and III RCTs have also shown the safety and efficacy of linaclotide in treating chronic idiopathic constipation and IBS-C .(63-67) In a meta-analysis involving 54 trials (47 treatments), the mean difference in weekly spontaneous bowel movement change was statistically more significant with linaclotide compared with placebo, lubiprostone, methylnaltrexone, naloxegol, and tegaserod, and statistically significantly less effective with linaclotide than bisacodyl and 600 µg dose of linaclotide.(68)

Plecanatide

Plecanatide is another therapeutic peptide comprising 16 amino acids and is under investigation. It has guanylate cyclase C agonist activity and, therefore, increases ion and fluid secretion.(10)

Clinical evidence

In an RCT involving 424 patients with IBS-C, safety and efficacy of plecanatide was evaluated versus placebo for 12 weeks. Plecanatide 1.0-mg, 3.0-mg, and 9.0-mg dose groups significantly improved the weekly rates of CSBMs compared with placebo (2.12, 2.74, and 2.44, respectively; $P \le 0.05$ for each pair-wise comparison). Plecanatide 3.0 mg and 9.0 mg doses significantly improved abdominal pain and stool consistency.(69)

Serotonergic enterokinetic agents

Prucalopride

Prucalopride is a prokinetic agent with a selective serotonin 5-HT4 receptor activity that stimulates intestinal transit.(10, 38)

Clinical evidence

In a systematic review and meta-analysis, prucalopride was found to be superior to placebo (7 RCTs, 2639 patients; RR of failure to respond to therapy: 0.82, 95% CI: 0.76-0.88; NNT: 6, 95% CI: 5-9) in treating patients with chronic idiopathic constipation.(52) In another systematic review and meta-analysis, prucalopride was also found to be superior to placebo (RR for failure to achieve 3 or more CSBMs: 0.82, 95% CI: 0.78-0.86, P =0.96; RR for failure to achieve an increase of one or more CSBM per week from baseline: 0.74, 95% CI: 0.66-0.83, P =0.79).(70)

ACRSI recommendation

 The use of laxatives is recommended in the management of chronic constipation.
 Osmotic laxatives such as lactulose and polyethylene glycol are preferred over stimulant laxatives such as bisacodyl.
 Newer agents such as lubiprostone and linaclotide are suggested when patients do not respond to osmotic and stimulant laxatives. (Strong recommendation based on moderate-guality evidence, 1B)

Biofeedback therapy

Biotherapy therapy is useful for patients with constipation and dyssynergic defecation. It is helpful to correct and restore dyssynergic behavior and restore defecation and improve rectal sensory perception.(2, 10, 38)

Clinical evidence

A systematic review and meta-analysis of 6 RCTs evaluating the efficacy of biofeedback therapy for dyssynergic defecation (N = 725) reported clinical improvement in 63% of treated patients. The efficacy of biofeedback therapy for dyssynergic defecation, assessed as global clinical improvement, was superior to non-biofeedback therapy (OR 3.63, 95% CI: 1.10-11.93, P = 0.03).(71)

A meta-analysis of 8 RCTs for constipation revealed superiority of biofeedback therapy to non-biofeedback therapy (i.e., laxatives, placebo, sham training, and Botox injection; OR 3.657, 95% CI: 2.127-6.290, P < 0.001) but equal efficacy between electromyographic biofeedback therapy and other biofeedback applications (i.e., balloon pressure, verbal feedback; OR 1.436, 95% CI: 0.692-3.089, P = 0.319). In total, 11 RCTs for fecal incontinence comparing biofeedback therapy to nonbiofeedback therapy (sensory training, pelvic floor exercise, and electrical stimulation) showed equal effectiveness between the 2 types of therapies (OR 1.189, 95% CI: 0.689-2.051, P = 0.535). No difference was found when various modes of biofeedback therapy were compared (OR 1.278, 95% CI: 0.736-2.220, P = 0.384).(72) However, a systematic review and a meta-analysis of 22 RCTs (N = 1469) reported that biofeedback therapy was not superior in treating isolated pelvic floor muscle training in female pelvic floor dysfunction.(73)

ACRSI recommendation

 Biofeedback therapy should be recommended as an initial treatment for symptomatic pelvic floor dyssynergia. (Strong recommendation based on moderate-quality evidence, 1B)

Surgical management of constipation

The first important step in managing patients with ODS is to rule out organic and anatomic causes, colonic dysmotility, and other extraintestinal causes. Thereafter, patients should be managed with the aforementioned conservative treatments, such as lifestyle modifications and pharmacological and biofeedback therapy.

Surgical management of constipation should be limited to patients who have failed to respond to non-surgical therapies, that is, those who have colonic neuropathy(10) or reparable anatomical defects, severe symptoms, symptoms impacting QoL, or concomitant pathology.(74)

Colectomy and proctectomy

Total abdominal colectomy with ileorectal anastomosis (TAC/IRA) can help resolve symptoms of constipation and improve frequency of bowel movements in patients with slow transit constipation but normal pelvic floor function.(75)

Clinical evidence

In a systematic review (N = 40 articles) assessing the outcomes of colectomy in adults with chronic constipation, overall global satisfaction rate was 85.6% (95% CI: 81.4-89.3%) among 1616 patients undergoing colectomy at >12 months follow-up.(76) Another review analyzing the outcome of colectomy performed in patients with slow transit constipation reported a 39%-100% patient satisfaction rate after colectomy.(77) In a retrospective review, 89% of patients reported satisfaction after colectomy for colonic inertia.(78)

A study assessing outcomes of TAC/IRA for patients with severe idiopathic slow-transit constipation reported that 90% of patients were satisfied with the outcome of the operation. Significant improvement in the degree of pain (P < 0.00001) was also reported.(79) Similarly, in another trial assessing patients with slow-transit constipation, 86% of patients reported an overall improvement after colectomy at long-term follow-up,(80) and 81% of patients were satisfied with their bowel-movement frequency.(81) Although TAC/IRA for slow-transit constipation is associated with higher rates of patient satisfaction, it may cause diarrhea, abdominal pain, fecal incontinence, small bowel obstruction, and recurrence of constipation.(76, 79-82) Laparoscopic total or subtotal colectomy for slow-transit constipation is reported as a safe and efficient technique.(83-86) Retrospective comparison of the functional outcomes of colorectal anastomosis with ileosigmoidal anastomosis with subtotal colectomy in patients with severe slow-transit constipation showed that cecorectal anastomosis was often associated with persistent constipation and lower patient satisfaction compared with ileosigmoidal anastomosis (73% vs. 93%).(87)

In general, segmental colectomy is not performed as a treatment for constipation because it is often difficult to accurately identify the malfunctioning part of the colon based on the transit study results. A full colectomy and IRA should be performed as the initial operation because there might be a need to re-operate after a segmental resection or colorectal or ileosigmoid anastomosis.(75)

Proctectomy is generally not recommended for treating constipation, although limited case reports are available for its use in refractory constipation.(88-90)

A case study reported that after restorative proctocolectomy, all patients (N = 5) with persistent symptomatic idiopathic colonic inertia were relieved of constipation and small bowel distention at 42 months. The mean bowel movement was 4.8 per 24 hours at 6 months. All patients were able to discriminate flatus from stool, could hold back after the initial urge to defecate for up to 1.5 hours, and had total daytime continence. All patients returned to work within 3 months and reported greater satisfaction with bowel function after restorative proctocolectomy when ileostomy.(88) compared with Restorative proctocolectomy and ileoanal anastomosis may serve as alternatives to stoma formation in carefully selected patients in whom ileorectal anastomosis failed in treating slow-transit constipation and in patients with primary megacolon associated with megarectum if the symptoms needed further surgical intervention.(89) However, 0%-50% of patients required pouch excision to address complications related to either recurrent constipation or persistent pain.(88-90)

Sacral neuromodulation

Sacral neuromodulation technique is based on the principle that presence of bioelectrical activity in a neural pathway can modulate a pre-existing activity in another pathway through synaptic interactions. Here, one or more percutaneous electrodes are placed on the sacral roots and a stimulation device is implanted under the skin on the buttocks. This technique could be a treatment option in patients with chronic constipation refractory to other treatments.(38)

In a prospective study, 87% of patients who were unresponsive to conservative treatments were successfully treated with sacral neuromodulation. The frequency of defecation increased from 2.3 to 6.6 evacuations per week (P < 0.001) at 28 months of follow-up, and evacuation increased from 2.3 to 4.8 (P < 0.001) days per week. Significant decreases were observed in the time spent in the washroom (10.5 to 5.7 min; P = 0.001), straining (75%-46% of successful evacuations; P < 0.001), perception of incomplete evacuation (71.5%-46% of successful evacuations; P < 0.001), and subjective rating of abdominal pain and bloating (P < 0.001). The Cleveland Clinic Constipation Score also decreased (P < 0.001), whereas the Visual Analog Scale score increased (P < 0.001) significantly. with Patients both slowand normal-transit constipation were benefited with treatment and showed improvements in their QoL.(91) In a perspective study, 42% of patients with severe constipation reported an amelioration of constipation after sacral nerve stimulation. A significant improvement in the Wexner constipation score post-stimulation was observed at a mean follow-up of 11 months compared to the baseline level (at baseline: median 23, range 18-27; 12 months after implantation: median 8, range 4-13).(92)

Permanent sacral nerve stimulation can be used to treat patients with resistant idiopathic constipation.(93)

Antegrade continence enema

Antegrade continence enema (ACE) involves antegrade flushing of colonic contents through a surgically created, continent, catheterizable channel in the abdominal wall and is used for colonic emptying and in cases of fecal continence.(93)

A meta-analysis of 17 RCTs (N = 426) for ACE in adults with fecal incontinence and constipation reported a success rate of 74.3% (P < 0.001) after 39 months of follow-up, wherein the success rates were 83.6% and 67.7% (both P < 0.001) in patients with fecal incontinence and constipation, respectively.(94)

A systematic review (N = 15 studies; 374 patients) evaluating the clinical response and complications of ACE for treating fecal incontinence and functional constipation in adults reported an achievement of full continence in 33% to 100% of patients.(95) Another systematic review (N = 40 studies; 2086 patients) assessed the outcomes of tube cecostomy vs. appendicostomy for ACE in the management of fecal incontinence in children; it reported lower overall rates of complications in the cecostomy group compared to the appendicostomy group (16.6% and 42.3%, respectively). Achievement of fecal continence and improvement in patient QoL was similar in both groups; however, the need for revision in surgery was approximately 15% higher in the appendicostomy group.(96)

Stapled trans-anal rectal resection

The stapled trans-anal rectal resection (STARR) procedure is used in patients with ODS along with a rectocele or an internal rectal prolapse. Here, 2 circular staplers are used to produce a circumferential trans-anal full-thickness resection of the lower rectum.(5, 97)

A meta-analysis (N = 26 studies, 1298 patients) evaluating of the efficacy of STARR to treat ODS reported significant improvement in ODS by yielding a combined standardized effect size of 3.8 (95% CI: 3.2-4.5) after STARR.(98) Improvement in symptoms of constipation was reported in 77%-90% of patients after STARR.(99, 100) The reported post-STARR complications include pain, bleeding, constipation, fecal urgency, fecal incontinence, late abscess, temporary ischuria, recurrent rectal prolapse, rectal diverticulum(100-105), rectovaginal fistula, rectal perforation, and posterior dehiscence.(106) A perspective pilot study (N = 7) determining the impact of STARR on anal distensibility in patients with ODS reported an improvement in ODS and Kess score in all patients 3 months post-STARR. No patient developed symptoms of fecal incontinence or the urge to defecate, and no anal sphincter defects were detected endoanal ultrasonography by after STARR.(107)

ACRSI recommendation

- Surgical treatment options (resection and non-resection) should be considered when all other conservative treatments fail.
 Surgery should be offered as a treatment choice only after confirming that the cause of chronic constipation is within the colon and/or rectum (slow-transit constipation and evacuation disorder) by performing physiological tests. (Strong recommendation based on moderate-quality evidence, 1B)
- Total or segmental colectomy can be effective in patients with normal upper gastrointestinal function and slow-transit constipation without a defecatory disorder but unresponsive to medical treatment. (Strong recommendation based on low-quality evidence, 1C)
- Surgery to treat structural defects causing evacuation disorder (i.e., intussusception, rectocele, rectal prolapse, descending perineum syndrome) as detected on diagnostic imaging procedures is an effective treatment when all conservative treatment options fail. (Strong recommendation based on low-quality evidence, 1C)
- Continuous direct sacral nerve stimulation (SNS/SNM) may be used to treat chronic constipation (slow-transit constipation and/or evacuation disorder), which is the least invasive surgical option, when all conservative treatments have failed. It may,

however, have lower success rates and complication rates. (Weak recommendation based on moderate-quality evidence, 2B)

 Antegrade colonic enema may be a non-resecting surgical option for flushing large intestine orthograde through an appendiceal stoma in selected patients with slow-transit constipation or in those with refractory defecatory disorders. (Weak recommendation based on low-quality evidence, 2C)

Management of Complete Rectal Prolapse

Rectal prolapse or procidentia is defined as protrusion of the rectum beyond the anus and classified as external and internal rectal prolapse. Complete or full-thickness external rectal prolapse is characterized by protrusion of the rectal wall through the anal canal, whereas internal intussusception rectal prolapse or rectal is characterized by prolapse of the rectal wall without protrusion through the anus. (108) The estimated global prevalence of rectal prolapse is approximately 0.5%, with an elderly (\geq 50 years) and female (9:1 female: male ratio) preponderance; however, in India, men and younger people are more commonly affected.(2) Although rectal prolapse is a benign condition, it affects the Quality of life (QoL) because of the associated symptoms and discomfort. Common symptoms of external rectal prolapse include pain, bleeding, and fecal incontinence, whereas those of internal rectal prolapse include obstructed defecation, fecal incontinence, and functional complaints.(109, 110) Fecal incontinence from rectal prolapse is probably due to the presence of a direct conduit (i.e., the prolapse) that interferes with the sphincter mechanism: the prolapse causes chronic traumatic stretch of the sphincter and continuous stimulation of the rectoanal inhibitory reflex. Pudendal neuropathy may occur, resulting in denervation-related atrophy of the external sphincter musculature. In some patients with rectal prolapse, the intussuscepting bowel in the rectum acts like a blockage and causes constipation, which may further be exacerbated by straining, pelvic floor dyssynergia, and colonic dysmotility.(109)

Clinical Evaluation

Detailed history-taking and physical examination are important for clinically evaluating a case of rectal prolapse, and specific risk factors should be considered during evaluation.

If no prolapse is detected upon physical examination despite a suggestive history, patients should be asked to reproduce the prolapse by straining while on a toilet in the squatting position, Caution should be exercised to differentiate prolapsing internal hemorrhoids and rectal mucosal prolapse. Full inspection of the perineum in different positions and complete anorectal examination are important.(109)

Clinical procedures such as colonoscopy, defecography, endoscopy, transit studies, and anal manometry can be selectively performed to evaluate and refine patient diagnosis and to rule out other coexisting pathologies.(108, 111) Endoscopic evaluation should be carried out to rule out any coexisting conditions such as diverticular disease that may influence treatment choice.(108, 111) Colonoscopy helps to rule out any additional colon pathology and examine rectal ulcers or erythema secondary to chronic prolapse. Defecography helps to rule out enterocele, internal intussusception, and ODS including rectocele and abnormal pelvic floor descent. Anal manometry and nerve conduction studies are also sometimes performed.(111) Constipation is a common symptom of rectal prolapse, and chronic constipation requires special consideration as per the constipation and ODS guidelines. Patients with constipation or pelvic dyssynergia may not be ideal candidates for certain surgical procedures that tend to exacerbate constipation post- surgery.(109)

Non-surgical Management

Data supporting non-surgical management of rectal prolapseare scarce. Non-surgical therapy can be used to treat symptoms associated with rectal prolapse, such as constipation and fecal incontinence, and to improve the QoL. Constipation can be relieved by prescribing high-fiber diet and stool softeners.(109, 110) Clinical evidence suggest that using table sugar may help reduce incarcerated rectal prolapse.(112, 113) In a retrospective study with145 patients with rectal prolapse, 96% of patients had fecal incontinence and preoperative treatment of incontinence led to a better improvement in postoperative continence.(114) The choice of surgery should be based on the overall medical condition of the patient. Delay in surgery should be avoided as it can lead to significant worsening of the disease. Waiting for more than 4 years for surgery may lead to higher recurrence rates postoperatively, probably due to the weakening of the pelvic floor.(115) Patients with rectal prolapse who are treated with only medical therapy not only show no improvement in their disease condition but also report deteriorating continence in the long-term.(116)

Surgical Management

Surgery is the hallmark of rectal prolapse management. Either abdominal or perineal approach can be used.(109) Another important surgical decision pertains to the choice of pelvic dissection: either posterior or ventral.(109, 117) The choice of surgicalmethod depends on patient comorbidities, surgeon's preference, and the patient's age.

Abdominal procedures

A systematic review and meta analysis (14 studies with 1301 patients) reported that abdominal rectopexy for internal rectal prolapse improved obstructed defecation and fecal incontinence (73.9% and 60.2%, respectively) and had a complication rate of 15%. Resection rectopexy had lower recurrence rates than ventral rectopexy, although the latter achieved better symptomatic improvement, a shorter operation time, and a lower complication rate.(118) On the other hand, no differences were observed for complications or recurrence (10.2% vs 10.1%; P = 0.43) in a retrospective study.(119)

According to various retrospective studies, abdominal surgery for rectal prolapse has lower recurrence rates compared with perineal surgery.(120-123) However, different Cochrane database reviews were unable to show this difference in recurrence rates.(124-126) In a recently published RCT, there was no significant difference between the 2 methods performed on patients with rectal prolapse (N=293)(127); however, this study is criticized for its methodological flaws and for being under powered.(109)

Suture rectopexy

Suture rectopexy involves thorough mobilization and upward fixation of the rectum, attaching it to the presacral fascia using a non-absorbable suture. The mobilization and subsequent healing by fibrosis and adhesions fixes the rectum in an elevated position.(108, 128, 129) Sigmoid resection may be added to the standard suture rectopexy in patients with rectal prolapse and is known as resection rectopexy.(109)

Laparoscopic suture rectopexy, with or without sigmoid colectomy, has been reported to be safe, feasible, and effective in treating rectal prolapse.(130) It is also reportedly safe and feasible in children with persistent rectal prolapse.(131-133)The reported recurrence rates for this method range from 3% to 9%,(128, 134-138) which may increase to 28.9% after 10 years (135). On the other hand, resection rectopexy has lower recurrence rates of 2% to 5%.(109, 139) In an RCT (N = 252) comparing rectopexy with no rectopexy for full-thickness rectal prolapse, a significantly higher recurrence rate was observed for the latter vs. the former method after 5 years (8.6% vs. 1.5%; P = 0.003).(140) The reported effects of laparoscopic suture rectopexy on constipation are inconclusive, with some studies showing improvement, other showing deterioration, and yet others reporting no effect on constipation.(108)

Posterior mesh rectopexy

Inserting a foreign material during rectopexy supposedly induces more fibrous tissue formation than standard suture rectopexy. Mesh rectopexy involves insertion of a prosthetic material or a mesh between the sacrum and the rectum after rectal mobilization. The material is sutured into the rectum and then into the periosteum of the sacral promontory; this process induces a strong fibrous reaction, thus restoring the normal anorectal angle.(108, 141) Mortality rates after posterior mesh rectopexy ranged from 0% to 3%,(134) whereas recurrence rates were up to 3%. Improvement in continence was observed in 3%-40% of patients, and occurrence of postoperative constipation was variable.(108, 109) Non-absorbable synthetic meshes are being substituted by absorbable meshes.(108, 109, 142)

A prospective study comparing the efficacy and safety of laparoscopic (N = 30) and open (N = 40) abdominal Wells rectopexy in 70 Indian patients with full-thickness rectal prolapse reported that complications and morbidity were less in the laparoscopic group than in the open rectopexy group (P < 0.05). Recurrence was observed in 2 patients in the open rectopexy group and in 1 patient in the laparoscopic group.(144)

Ventral rectopexy

Ventral mesh rectopexy is another surgical approach for rectal prolapse repair. In brief, the rectum is carefully separated from the vagina or prostate andall the way to the perineal body anteriorly, but is not dissected from the sacrumposteriorly. After this rectal mobilization, ventral rectopexy is performed using a synthetic or biologic mesh. The mesh supports the anterior wall of the rectum at the point of its intussusception and resuspends the rectum to the sacral promontory.(109)

A meta-analysis of 17 studies comprising 1242 patients reported that laparoscopic ventral mesh rectopexy (LVMR) performed for full-thickness external rectal prolapse had a complication rate of 12.4% (95% CI: 8.4-16.4) and a recurrence rate of 2.8% (95% CI: 1.4-4.3). The rates of improvement in fecal incontinence and constipation after LVMR were 79.3% and 71%, respectively.(144) A randomized study comparing LVMR (N = 37) to laparoscopic posterior sutured rectopexy (LPSR; N = 38) showed higher QoL and lower recurrence rate (8.82% vs. 23.33%) in patients treated with LVMR compared to LPSR. Long-term functional outcomes after LVMR were superior to that after LPSR.(145) Long-term outcomes of robotic ventral mesh rectopexyperformed for external rectal prolapse were similar to those of LVMR and with fewer complications than with LVMR.(146, 147) However, mesh-related complications in LVMR remain an issue. Synthetic meshes have a higher rate of complications such as erosion (1.5-2%). The use of biological meshes, however, has reduced the complication rate (0.2-0.4%). (148)

Chandra et al. reported a new treatment for treating complete rectal prolapse, called per anal endoscopic rectopexy (PAER). In PAER, the anterior rectal wall is fixed to the under-surface of the anterior abdominal wall and the posterior rectal wall is fixed to the sacrum through a submucosal tunnel (both endoluminally). This method showed no major morbidity and recurrence was seen in only 1 of 12 patients.(149)

Biological meshes

However, the optimal prosthetic material is highly debated as the complications associated with the use of synthetic meshes have become a national concern. The placement of synthetic mesh in the pelvis, which has resulted in cases of bowel obstruction, vaginal and bowel erosion as well as fistualization, has led to the increasing use of the newer biologic materials in the repair of pelvic floor disease. The use of biologic mesh has undergone an evolution as advances in biomaterials technology and new surgical techniques have emerged. While biologic meshes are costly and are more difficult to handle in laparoscopic procedures, leading to longer procedure times, they are durable, incorporate quickly, and are associated with decreased rates of erosion, pain, sexual dysfunction, fistulization, and infection.(150). The available evidence is insufficient to support the use of one mesh over another (biologic vs synthetic); however, the use of polyester mesh is associated with increased morbidity.(151)

Perineal procedures

Anal encirclement

Thiersch in 1891 first described anal encirclement by use of a silver wire. Encirclement and narrowing of the anal canal acts as a physical barrier to further prolapse, but otherwise does not correct the anatomic defects. As such, it has a high recurrence rate (33% to 44%). Multiple alternative materials have since been described nylon, Mersilene, Dacron, Marlex, Teflon, fascia lata, silicone rubber, Silastic and DacronmpregnatedSilastic mesh. In principle, the Thiersch procedure consists of the passage of some foreign material around the anal canal through the ischiorectal fossae with the knot buried posteriorly. The recommended diameter of the anal encirclement should be to the size of a 16 or 18 Hegar The Thiersch procedure is still fraught with dilator. complications beyond just its high recurrence rate. Complications associated with the Thiersch procedure include erosion, wound infection, sepsis, and fecal impaction. Recurrent prolapse following a Thiersch deserves special comment as incarceration and subsequent strangulation are significant risks requiring urgent evaluation should it occur. Patients who have undergone this procedure should be placed on a bowel regimen in combination with frequent evaluations to prevent fecal impaction. They often require stool softeners and laxatives, as well as suppositories and enemas to ensure an impaction does not occur. Given the high complication and recurrence rate associated with this procedure, it has been largely abandoned.(152)

Perineal procedures do not require laparotomy and, thus, are useful in high-risk patients. Two of the most widely used perineal procedures are the Delorme procedure and perinealrectosigmoidectomy, which is also known as the Altemeier procedure.(141)

A systematic review (N = 38 studies; 2647 patients) of perineal resection procedures for the treatment of

complete rectal prolapse reported the recurrence of complete rectal prolapse in 16.6% of patients. The incidences of recurrence were 11.4% for the Altemeier procedure, 14.4% for the Delorme procedure, and 13.9% for perineal stapled prolapse resection. Improvement in fecal incontinence occurred in 61.4% of patients after the Altemeier procedure, 69% after the Delorme procedure, and 23.5% after perineal stapled prolapse resection. Complications occurred in 13.2% of patients. The median complication rates after the Altemeier procedure, Delorme procedure, and perineal stapled prolapse resection were 11.1%, 8.7%, and 11.7%, respectively.(153) Perineal stapled rectal prolapse resection is a new surgical procedure for external rectal prolapse, which is safe, easy, and quick to perform. The recurrence rate is comparable to those of the well-established Altemeier and Delorme procedures. However, given the heterogeneity of studies and variations in lengths of follow-up, further randomized prospective studies are needed to adequately compare this technique against other procedures for complete rectal prolapse.(154, 155)

Delorme procedure

The Delorme procedure is suitable for patients with a short (<5 cm) full-thickness rectal prolapse that involves a circumferential mucosal sleeve resection and plication of the muscularis layer.(109) This procedure is also a surgical alternative for patients unable to tolerate an extensive operation, such as the elderly, frail patients, and those medically unfit for major surgery.(141)

Retrospective analysis of outcomes in adult patients undergoing the modified Delorme procedure reported that after 61.4 months, recurrent postoperative prolapse rate at 5 years was 6% and that at the end of the study was 10% (5/52). The postoperative complication rate was 4%, and 89% of patients were satisfied with their results.(156) In a prospective randomized study, improvement in continence after the Delorme procedure was reported in 71.4% of patients, and recurrent prolapse was observed in 16% of patients after 18 months.(157) This procedure is usually considered safe, and around 4%-12% of complications involved infection, urinary retention, bleeding, and fecal impaction.(109, 156, 158) In various studies, patients undergoing this procedure have shown recurrence rates of 10%-15%. which is hiaher than that with abdominal approaches.(109, 156, 158, 159)

Perinealrectosigmoidectomy/Altemeier procedure

Perinealrectosigmoidectomy involves transanal full-thickness resection of the prolapsed rectum and coloanal anastomosis. This surgery can be performed without general anesthesia and with lower complication rates compared to transabdominal surgery.(109)

In a retrospective review of patients (N = 36) who underwent perinealrectosigmoidectomy for rectal prolapse, nearly all patients reported significant improvement in QoL. Early postoperative complications occurred in 9.1% of patients, and recurrence was reported in 26.7% of patients after 50 months.(160) Overall postsurgical recurrence rates ranged from 16% to 30% after 2 years.(161-164) In a cohort study involving 45 elderly patients, significant symptomatic relief was achieved after perinealrectosigmoidectomy compared to the preoperative condition including the resolution of rectal mass (8.9% vs. 60.0%), fecal incontinence (15.6% vs. 46.7%), and constipation (4.4% vs. 26.7%). The recurrence rate was 13%, and no surgery-related deaths at the 10-year follow-up were reported.(165). Addition of an anterior levatoroplasty decreases the symptoms of ODS.

Pelvic organ prolapse

There are numerous procedures described for the surgical management of pelvic organ prolapse which may be transvaginal, transrectal, and perineal procedures and transabdominal procedures for the correction of pelvic prolapse. These procedures have been widely used in the past but are rapidly falling out of favor given the renewed interest in transabdominal techniques. However, the local approaches will remain the procedures of choice for patients who are unable, due to their health status, to undergo either an open or laparoscopic transabdominal procedure.

Transvaginal approaches have the advantage of providing adequate access for the repair of coexistent enteroceles, cystoceles, and apical vaginal vault prolapse. A vaginal hysterectomy can also be performed if necessary for uterine prolapse or other problems. However, satisfactory surgical treatment for posterior vaginal prolapse is elusive as failure rates ranging from 30% to 70% and reoperation rates of 30% have been reported. The transvaginal placement of a polypropylene mesh in the rectovaginal plane with the goal of increasing durability of transvaginal repairs was widely adopted to achieve a tension-free repair. While risk factors for these complications have been identified, including concurrent hysterectomy, diabetes mellitus, and smoking, the routine use of mesh in transvaginal repairs is not recommended.(166) Ventral mesh rectopexy with avoidance of a posterior rectal dissection has emerged as a potentially favoredtransabdominal option for correction of pelvic organ prolapse. The procedure provides a single solution to several problems including rectal and vaginal prolapse, rectocele, enterocele, and abnormal perineal descent with a decreased risk of de novo constipation.

ACRSI recommendations

- Surgical repair of rectal prolapse is the only treatment for full thickness external rectal prolapse. When a patient is not responsive to nonoperative treatments, surgery should be considered for the treatment of severe symptoms of obstructed defecation. (Weak recommendation based on low-quality evidence, 2C)
- Abdominal or perineal operation is dictated both by patient characteristics and surgeon preferences. (Weak recommendation based on low-quality evidence, 2C)
- Among the available treatments, abdominal rectopexy for rectal prolapse seems to have an advantage over other procedures.(Strong recommendations based on low-quality evidence, 1C)

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COMPREHENSIVE MEDICAL MANAGEMENT OF ANORECTAL DISORDERS^{1,2,3}



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Ref.: 1. Dezoflav Prescribing Information. Dec 2018. | 2. Fidonal Prescribing Information | 3. Duphalac Prescribing Information

Net: 1, because rescripting information, Dec 2016 [2, Flobinal Frescholing information] 3: Dephade Frescholing information DEZOFLAY: Abbreviated Prescripting Information MICRONIZED PURIFIED FLAVONOID FRACTION OF RUTACEAE 1000 MG TABLETS DEZOFLAV1000mg LABEL CLAIM: Each film coated tablet contains: Micronized Purified flavonoid fraction of Rutaceae composed of Diosmin 900 mg, Flavonoids expressed as Hesperidin 100 mg. INDICATION: Acute hemorrhoid (piles), DOSAGE AND ADMINISTRATION For the treatment of acute haemorrhoidal attacks: MPFF 1000 mg 3 tablets daily for 3 days for the treatment of haemorrhoids: the maintenance dose is 1 tablet daily for a duration according to the physician's discretion. CONTRAINDICATIONS: Hypersensitivity to the micronized purified flavonoid fraction or to any of the excipients. WARNINGS & PRECAUTIONS: Hemorrhoidal attack: The administration of this product does not preclude treatment for other anal conditions. The treatment must be short-term. If symptoms do not subide promptly; a proctological examination should be performed and the treatment should be reviewed. PREGNANCY AND LACTATION: Experimental studies performed in animals have not revealed any teratogenic effect. Moreover, no harmful effects have been reported to date in humans. Breastfeeding is not recommended during treatment. ADVERSE REACTIONS: Side effects reported with MPFF in clinical trials are of mild intensity. They consist mainly in gasto-intestinal events (diarrhea, dyspepsia, nausea, vomiting). Issued on: 24th December 2018 Source: Prepared based on full prescribing information, please contact: Medical Sciences Division, Abbott India Limited, Floor 16, Godrej BKC, Plot No. C - 68, BKC, Near MCA Club, Bandra (E), Mumbai – 400 051.

Abbreviated Prescribing Information Lactulose Solution USP; Duphalac® ; Duphalac® Enema COMPOSITION: Each 5 ml contains: Lactulose Solution USP, equivalent to Lactulose 3.335 g

Reconstruction for Duphale® Enems: To be reconstructed to 20% before use. INDICATIONS: Constipation: regiment to Exclusion 30 and generative to the physiological structure and prevention of hepatic come or precomes (adults). DOSAGE AND ADMINISTRATION: Duphale® The lactulose solution, may be administered effect of undited to the physiological structure and prevention of hepatic come or precoms (adults). DOSAGE AND ADMINISTRATION: Duphale® The lactulose solution, may be administered effect distued or undited to the individual needs of the patient. A single dose of faste platies doses should be smallowed in one and hold not be kept in the mouth for an extended point of this unditions. If this (11) = 2 (11) =

	Duphalac*		
	Starting dose daily	Maintenance dose daily	
Adults and adolescents	15-45 ml	15-30 ml	
Children (7-14 years)	15 ml	10-15 ml	
Children (1-6 years)	5-10 ml	5-10 ml	
Infants under 1 year	upto 5 ml	up to 5 ml	

Dosing in HE (for adults only) For oral administration: Starting dose: 3 to 4 times daily 30-45 ml. This dose may be adjusted to the maintenance dose to achieve 2 to 3 soft stools per day. For rectal administration: In acute cases (impending coma or coma stage) Trademark may be administered as a retention enema (300ml Trademark/700ml water). The enema is to be retained for 30-60 minutes; the procedure is to be repeated every 4-6 hrs until oral medication can be administred. Duphale:@ Enema: The administration of the adminis by diluting Duphalac and is of considerable value especially in unconscious patient. In such cases 300 ml of Duphalac may be mixed with 700 ml of potable water to be used as retention enema; the enema is to be retained for 30 - 60 minutes and repeated every 4 - 6 hours until the patient is able to take oral medication. Paediatric population: The safety and efficacy in children (newborn to 18 years of age) has not been established. No data are available. Elderly patients and patients with renal or hepatic

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FIDONAL: Abbreviated Prescribing Information: Nifedipine & Lidocaine Cream LABEL CLAIM: Nifedipine I.P. 0.3% w/w; Lidocaine I.P. 1.5% w/w; Benzyl Alcohal I.P. (As a preservative) 1.0% w/w; In a Cream Base q.s. INDICATION: For the treatment of anal fissures: DOSAGE AND ADMINISTRATION: Apply the cream twice daily for at least 3 weeks. Please refer full prescribing information for detailed method of administration. CONTRAINDICATIONS: Hypersensitivity to the active ingredient and in particular to Lidocaine and other anesthetics of similar type/structure or any of the excipients, pregnancy - ascertained or presumed, & lactation. WARNINGS & RPECAUTIONS: Excessive doesen and / or usage for prolonged periods of time can give rise to phenomena of semilication of Lidocaine for the there with discontinuation of treatment. Claution in patiend wansged muccasa and inflammation in the region to be treated. PREGNANCY AND LACTATION: Usage is advised only if substantial benefit justifies the potential risk. ADVERSE REACTIONS: Local reactions may occur such as pain, burning, itching, hyperemia and bleeding. These effects resolve after diversitivations of the streament of the streament of semilar to streament of streament of streament of semilar to streament of streament of the streament of semilar to streament of streament of semilar to streament of the streament of semilar to streament of the st discontinu on of treatn

Sused on: OSt March 2019 Source: Prepared based on full prescribing information, version v1.0, dated: 07th February 2019 For full prescribing information, please contact: Medical Sciences Division, Abbott India Limited, Floor 16, Godrej BKC, Plot No. C – 68, BKC, Near MCA Club, Bandra (E), Mumbai – 400 051.

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