W6: Hands on workshop on rectal balloon training and transanal irrigation in the management of lower bowel dysfunction

Workshop Chair: Paula Igualada-Martinez, United Kingdom

28 August 2018 11:00 - 12:30

Start	End	Topic	Speakers
11:00	11:05	Introduction to the workshop	Paula Igualada-Martinez
11:05	11:15	Anatomy of the lower GI and pathophysiology of lower bowel dysfunction	Linda Ferrari
11:15	11:20	The defecation process and its disturbances	Paula Igualada-Martinez
11:20	11:25	Overview of the management of faecal incontinence	Donna Bliss
11:25	11:30	Overview of the management of evacuation difficulties	Julia Herbert
11:30	12:25	Hands on Training of Transanal irrigation, Rectal Balloon Training and Bowel diaries	Paula Igualada-Martinez Donna Bliss Julia Herbert
12:25	12:30	Discussion	Paula Igualada-Martinez Donna Bliss Julia Herbert Linda Ferrari

Aims of Workshop

Faecal incontinence and bowel evacuation difficulties occur in about 18% of the population and have a considerable impact on health cost and quality of life. First line management is conservative treatment due to low risk and high rate of success with completion of therapy. This workshop will provide an overview of the published literature with strong focus on level 1 evidence, on the anatomy, pathophysiology and conservative management of bowel dysfunction. This workshop will also focus on the 'hands on' training on both Transanal irrigation and Rectal Balloon Training. It is also an opportunity to continue to raise awareness of bowel dysfunction in a society that predominantly focuses on urinary incontinence.

Learning Objectives

Aim:

The aim of this course is to gain an in-depth knowledge of the use of rectal balloon training (RBT) and transanal irrigation (TAI) in the management of lower bowel dysfunction.

Objectives:

At the end of the workshop the participants should be able to understand:

The anatomy of the lower gastrointestinal tract and the pathophysiology of lower bowel dysfunction.

The process of defecation and its alteration produced by faecal incontinence and defecation difficulties.

The importance of lifestyle modifications and dietary advice in the overall management of the lower bowel dysfunction.

An overview of the general conservative management of faecal incontinence and evacuation difficulties prior the use of more advanced interventions such as rectal balloon training and TAI.

The principles of TAI and when to use it as part of the management of lower bowel dysfunction.

The principles of RBT and when to use it as part of the management of lower bowel dysfunction.

Learning Outcomes

At the end of the workshop, the delegates should be able to:

Identify the anatomy and pathophysiology of the lower gastrointestinal tract.

Identify bowel dysfunction and when to refer for conservative management.

Understand the process of defecation and the dysfunction provoked by faecal incontinence and bowel evacuation difficulties.

Understand the initial bowel interventions before deciding onto more advance management strategies such as TAI and RBT.
Be able to know when and how to use RBT and TAI in patients with bowel dysfunction and become acquainted with the different types of anorectal irrigation and rectal balloon systems.
Be able to use bowel diaries with bowel dysfunction patients.

Suggested Learning before Workshop Attendance

- Rao, S. S. C., Benninga, M. A., Bharucha, A. E., Chiarioni, G., Di Lorenzo, C., & Whitehead, W. E. (2015). ANMS-ESNM Position Paper and Consensus Guidelines On Biofeedback Therapy for Anorectal Disorders. Neurogastroenterology and Motility?: The Official Journal of the European Gastrointestinal Motility Society, 27(5), 594–609. http://doi.org/10.1111/nmo.12520
- Review of the anatomy and physiology of the pelvic floor complex, including the pelvic floor muscles, the external and internal anal sphincters and the endopelvic fascia
- Review of the normal bowel function and defecation dynamics

Suggested Reading

- Abrams P, Cardozo L, Wagg A, Wein A (2017) 6th International Consultation on Incontinence. ICUD-ICS. ISBN: 978-0-9569607-3-3.
- Brandt LJ, Prather CM, Quigley EM, Schiller LR, Schoenfeld P, Talley NJ. (2005) Systematic review on the management of chronic constipation in North America. American Journal of Gastroenterology; 100 (Suppl 1): S5–S21.
- Rao, S. S. C., & Patcharatrakul, T. (2016). Diagnosis and Treatment of Dyssynergic Defecation. Journal of Neurogastroenterology and Motility, 22(3), 423–435. http://doi.org/10.5056/jnm16060
- Rao, S. S. C., Benninga, M. A., Bharucha, A. E., Chiarioni, G., Di Lorenzo, C., & Whitehead, W. E. (2015). ANMS-ESNM Position Paper and Consensus Guidelines On Biofeedback Therapy for Anorectal Disorders. Neurogastroenterology and Motility?: The Official Journal of the European Gastrointestinal Motility Society, 27(5), 594–609. http://doi.org/10.1111/nmo.12520
- Sultan AH, Monga A, Lee J, Emmanuel A, Norton C, Santoro G, Hull T, Berghmans B, Brody S, Haylen BT (2017). An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female anorectal dysfunction. Neurourol Urodyn. Jan; 36(1):10-34. doi: 10.1002/nau.23055

Speaker 1 (Paula Igualada- Martinez)	**Introduction to the Workshop** We hope that you will find this workshop stimulating and that it will add to your clinical practice ensuring a safe and effective assessment and treatment of this group of patients. **The defecation process and its disturbances** The pelvic floor is a complex, integrated, multilayer system that provides active and passive support to the pelvic organs, maintain continence, and coordinate relaxation during urination and defecation. Fascia and ligaments provide passive support, while both the superficial and deep layer of the pelvic floor muscles provides active support. The superficial pelvic floor muscles relevant to bowel function are the external anal sphincter, perineal body and the transverse perinei muscles. The deep pelvic floor muscles, also known as levator ani, maintain the anorectal angle and create a mechanical barrier for stool flow from the rectum. During normal bowel evacuation, the anal sphincters and the puborectalis muscle (part of the levator ani) relax, which allows the anorectal angle to widen and the perineum to descend. Simultaneously there is a voluntary effort of bearing down which increases the intra-abdominal pressure, together with the contraction of the rectum and the puborectalis. These complex and mixed

	voluntary and involuntary movements facilitate the movement of the stool from the rectum and, relax the pelvic floor muscles and the anus, resulting in stool evacuation. Defecatory dysfunction of the pelvic floor includes both mechanical and functional disorders. The functional type causes dyssynergic defecation, idiopathic megarectum, descending perineal syndrome, and solitary rectal ulcer syndrome. Mechanical causes of PFDD are stricture, enterocele, intussusception, rectal prolapse, and rectocele. Patients can often present with a combination of both disorders. **Trans-anal irrigation** Trans-anal irrigation therapy (TAI) is in widespread use throughout the UK as a treatment for obstructed defecation and faecal incontinence. TAI involves instilling tap water into the rectum via the anus, using either a balloon catheter or a cone delivery system. This is attached via a plastic tube to an irrigation bag holding up to 2 litres of water; alternatively a low-volume system consisting of a hand pump and a cone may be employed. TAI may be an effective therapy for obstructed defecation and faecal incontinence, and may be considered in patients who have not responded to medical management. Irrigation is safe and its effectiveness is at least comparable with pharmacological therapies. The aim of the practical session is: - To familiarise the participants with the role of TAI in the management of lower bowel dysfunction - To introduce the technique of TAI in the management of lower bowel dysfunction - To practice with the different TAI systems
Speaker 2 (Linda Ferrari)	**Anatomy of the lower GI and pathophysiology of lower bowel dysfunction** The act of defaecation is dependent on the coordinated functions of the colon, rectum and anus. Considering the complexity of neuromuscular (sensory and motor) functions required to achieved planned, conscious, and effective defaecation, it is not surprise that disturbances to perceive “normal” function occur commonly all stages of life. Defaecation can be impaired in two different directions, one includes defaecation difficulties and the other one includes impairment of incontinence, even if in some cases they can associate. Continence is the result of a balanced interaction between the anal sphincter complex, stool consistency, the rectal reservoir function, and neurological unction. Faecal incontinence is defined as the involuntary loss of rectal contents (faeces, gas) through the anal canal and the ability to postpone an evacuation until social convenient. Faecal control is often thought to be synonymous with normal sphincter muscles; however other factors are equally important[1]. Hence, faecal incontinence has to be considered the common final pathway symptom of multiple independent aetiologies[2]. Faecal incontinence might be the result of acquired structural abnormalities, such as obstetric injury, anorectal surgery, rectal intussusception and/or prolapse, sphincter-sparing bowel resection; it might be caused by functional disorders, such as chronic diarrhoea, irritable bowel syndrome, or by neurological disorders, like pudendal neuropathy, or congenital disorders, such as imperforated anus. Constipation is common in adults and children with up to 20% of the population reporting symptoms depending on the definition used[3]. Chronic constipation (CC),

	usually defined, as constipation lasting more than 6 months, can be more disabling and includes symptoms of obstructive defaecation such as straining, incomplete emptying, unsuccessful or painful evacuation, bowel infrequency, abdominal pain and bloating. After exclusion of secondary causes (neurological, metabolic and endocrine disorders) the pathophysiology of chronic constipation can broadly be divided into problems of deficient colonic contractile activity (stool transit) and problems allied to rectal emptying (evacuation disorder). Indeed, evacuation disorders can be further subdivided into those with a structurally significant pelvic floor abnormalities (usually as a consequence of pelvic floor injury or weakness), for example rectocoele or internal prolapse (intussusception), and those characterized by a dynamic failure of evacuation without structural abnormality, most commonly termed "functional defaecation disorder[4]. 1. Wald A. clinical practice. Faecal incontinence in adults. *N Engl J Med* 2007; 356: 648-1655. 2. Rao SS. Diagnosis and management of faecal incontinence. American College o Gastroenterology Practice Parameters committee. Am J Gastoenterol 2004; 99: 1585-1604. 3. Suares NC, Ford AC. Prevalence of, and risks factors for, chronic idiopathic constipation in the community: systematic review and meta-analysis. *Am J Gastroenterol* 2011; 106: 1582-91, quiz 1581,1592. 4. Bharucha AE, Wald A, Enck P, Rao S. Functional anorectal disorders. Gastroenterology 2006; 130: 1510-8.
Speaker 3(Donna Bliss)	**Overview of the management of faecal incontinence and Bowel Diaries** The first line of treatment for anal or fecal incontinence is conservative management.[1] Surgery often does not achieve a cure and carries a risk of worsening incontinence severity.[2] Success of conservative management of anal/fecal incontinence depends in part on self-management by the patient, a plan recommended by an informed healthcare provider, and consideration of the patient's goals for treatment. There are a variety of conservative management strategies for community-living individuals which have been recommended and recently updated by an international group of experts that were part of part the International Continence Society and the sixth International Consultation on Incontinence. This part of the workshop will summarize the strategies, and it will also look at how they have been delivered. Conservative management strategies range from educating patients and caregivers about normal defecation and possible alterations in anal/fecal incontinence, setting goals for therapy, making lifestyle modifications such as diet and weight loss, using medications, emptying the rectum, and selecting/using containment (e.g., absorbent products, anal plug or insert, vaginal bowel device). Limitations of absorbent products in terms of containing leaked feces and odour and protecting the skin will be reviewed.[4,5] The evidence base of conservative management is variable and more research is needed since it is a cornerstone of therapy[1]. Assessment of the severity and pattern of anal/fecal incontinence is part of the holistic assessment of the patient with anal/fecal incontinence. This assessment is achieved using a bowel diary provides useful information to guide clinical recommendations and helps to monitor improvement or worsening if symptoms. However, there is no standardized bowel diary. The interactive portion of this segment of the workshop will include a discussion of sample bowel diaries provided by participants. Participants will review similarities and differences in the components of the diaries, the duration for which they are completed, pros and cons in terms of

	patient burden and accuracy, the most useful items, what patients learn, and ways clinicians use the information. References [1]Bliss D, Mimura T, Berghmans B, et al., eds. Assessment and conservative management of faecal incontinence and quality of life in adults. In Abrams P, Cardozo L, Wagg A, & Wein A, Eds. Incontinence, 6th ed. Bristol, UK: International Continence Society; 2017. [2]O'Connell PR, Knowles CH, Maeda Y, et al. Surgery for Faecal Incontinence. In Abrams P, Cardoza L, Wagg A, & Wein A, Eds. Incontinence. 6th ed. Bristol, UK: International Continence Society; 2017:2087-2142. [3]Wilde MH, Bliss DZ, Booth J, Cheater FM, Tannenbaum C. Self-Management of Urinary and Fecal Incontinence. American Journal of Nursing. 2014;114(1):38-47. [4] Bliss, D.Z., Lewis, J., Hasselman, K., Savik, K., Lowry, A., Whitebird, R. (2011). Use and evaluation of disposable absorbent products for managing fecal incontinence by community-living people. *Journal of Wound, Ostomy, and Continence Nursing, 38*(3), 289-297. [5]Cottenden, A., Fader, M., Beeckman, D., Bliss, D., Buckley, B., Kitson-Reynolds, E., Moore, K., Nishimura, K., Ostaszkiewicz, J., Turner, D., Watson, J. & Wilde, M. Management Using continence products (2017). In P. Abrams, L. Cardoso, A. Wagg, & A. Wein (Eds.), *Incontinence (6th ed*.). Bristol, UK: International Continence Society.
Speaker 4 (Julia Herbert)	**Overview of the management of evacuation difficulties and Rectal Balloon Training** Conservative management should be the first line management of bowel evacuation difficulties due to the minimal risk and the higher rate of success with completion of therapy. Conservative management usually involves correcting the underlying pelvic floor dyssynergia by teaching patient to defecate effectively using bracing of the abdominal wall muscles and effective relaxation of the pelvic floor muscles with or without attempts to improve rectal sensory perception. There are three main methods of monitoring the function of the anus and providing biofeedback to patients. These methods include electromyography (EMG) biofeedback, manometry biofeedback and rectal balloon training (RBT). The conservative management also includes information on gut, rectal and pelvic floor muscle anatomy and function, as well as behavioral advice about frequency and length of toilet visits, posture on the toilet, increasing fiber and fluid intake and physical activity. The principles of Rectal Balloon Training (RBT) and when to use it as part of the management of lower bowel dysfunction The aims of this session are: • to familiarise delegates with 'healthy' values for rectal sensation • to introduce the technique of RBT to down-train hypersensitivity of the rectum • to introduce the technique of RBT for dysfunctional defaecation • practical session with balloon catheters

	Assessment An initial assessment will be conducted by introducing a deflated rectal balloon catheter into the rectum. The rectum should be digitally assessed to check that it is empty prior to conducting this assessment. Three key values will be recorded threshold volume of rectal distension required to elicit the first sensation of distension – (normal range 40-50 mls) threshold volume of rectal distension required to elicit a sustained feeling of urgency to defecate or 'call to stool' (normal range 80 – 100 mls) the maximum tolerable volume (normal range 120 – 150 mls) Assessment of patients with faecal urgency will typically demonstrate reduced rectal sensation levels, which may be as severe as patients describing maximum tolerable with only 10mls of air in a rectal balloon. In patients with difficult defaecation a further assessment may include balloon expulsion assessment. Noetling et al (2012) describe this as the time required for subjects to expel a rectal balloon filled with 50 cc of warm water while seated in privacy on a commode. The balloon is removed if the subject is not able to expel the balloon in 3 minutes. However this assessment may also be performed with an air-filled balloon and the patient in left side lying. Training RBT consists of introducing a deflated balloon into the rectum and inflating the balloon with air or warm water via a syringe to simulate rectal filling. Difficult defaecation In patients with bowel evacuation difficulties RBT may be utilized to correct the dyssynergia or incoordination of the abdominal, rectal, puborectalis and anal sphincter muscles in order to achieve a normal and complete bowel evacuation, to facilitate normal evacuation by simulated defecation training and to enhance rectal sensory perception in patients with rectal hyposensitivity. Tis technique may be called 'balloon expulsion training'. Anal incontinence RBT is also used to correct the physiological deficits that contribute to faecal /anal incontinence, in particular faecal urge incontinence, by improving the ability to sense smaller volumes of stool in the rectum and contract pelvic floor muscles in response to these volumes and/or improving the ability to tolerate larger rectal volumes (Rao et al 2016). References Bols E., Berghmans B., deBie R. et al. (2012). Rectal balloon training as add-on therapy to pelvic floor muscle training in adults with fecal incontinence: A randomized controlled trial. Neurourol and Urodyn 32(1);132-138. Noetling J., Ratuapli S.K., Bharucha A.E.. et al. (2012). Normal values for high-resolution anorectal manometry in healthy women: Effects of age and significance of rectoanal gradient. Am J Gastroenterol. 107(10);1530–1536 Rao S. C. Bharucha, A.E., Chiarioni G. et al. (2016). Anorectal disorders. Gastroenterol. 150;1430–1442

Linda Ferrari

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Affiliations to disclose†:

No disclosure

† All financial ties (over the last year) that you may have with any business organisation with respect to the subjects mentioned during your presentation

Funding for speaker to attend:

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Anatomy of the lower GI and pathophysiology of lower bowel dysfunction

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Anatomy of the lower GI

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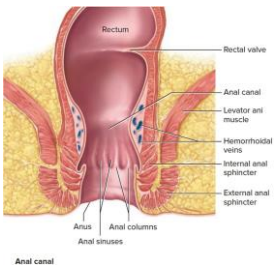

Defaecation

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The act of defaecation depends on the coordinated functions of colon, rectum and anus.

Complex neuromuscular (sensory and motor) functions required to achieve planned, conscious and effective defaecation.

Defaecation might be impaired in two way:

- Impairment of continence;
- Defaecation difficulties;
- Association of both symptoms;

Continence

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Continence is the result of a balanced interaction between:

- Anal sphincter complex (internal and external anal sphincter)
- Stool consistency;
- Rectal reservoir function;
- Neurological function;

Ruiz NS (2017) World J Gastoenterol 23(1): 11-14

Defaecatory disorders

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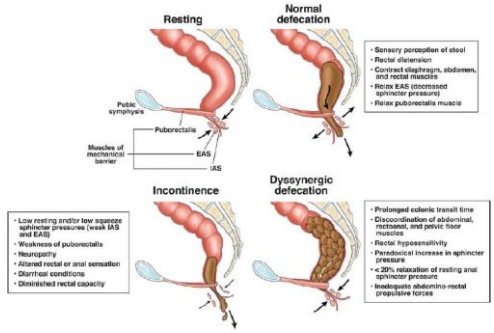


Rao SS Clin Gastronterol Hepatol (2010)

Faecal incontinence

Faecal incontinence is defined as the involuntary loss of rectal contents (faeces and gas) through the anal canal and the ability to postpone an evacuation until social convenient.

Several reasons:

- Acquired structural anatomical abnormalities: obstetric injury, anorectal surgery, rectal prolapse and/or intussusception, sphincter-sparing bowel resection;
- Functional disorders: chronic diarrhoea, irritable bowel syndrome, inflammatory bowel disease;
- Neurological disorders: Multiple sclerosis, pudendal neuropathy (radiation, diabetes);
- Congenital disorders: imperforated anus, cloacal defect, spina bifida;

Guillame A (2017) J Clin Gastroenterol 51: 324-330

Classification faecal incontinence

Faecal incontinence is commonly classified:

- Urge incontinence: discharge despite active attempts to retain contents;
- Passive incontinence: involuntary discharge without awareness;
- Faecal seepage: leakage of stools with grossly normal continence and evacuation;

Rao SS (2004) Am J Gastroenterol 99:1585-1604

Constipation

- 20% population affected

- Chronic constipation has been defined as symptoms lasting more than 6 months

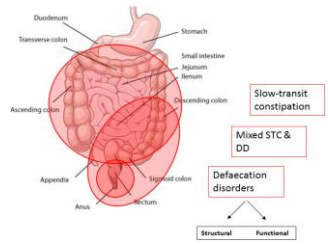
- Includes symptoms of obstructive defaecation (straining an incomplete emptying), unsuccessful evacuation, bowel infrequency, abdominal pain and bloating

Suares NC (2011) Am J Gastroenterol 106: 1582-91

Constipation

Deficient colonic contractile activity
slow stool transit

Problems with emptying
evacuation disorders



Knowles CH (2017) Colorectal Disease 19: 5-16

Evacuation disorders

Evacuation disorders might be further subdivided into:

- Structural pelvic floor abnormalities: as a consequence of pelvic floor injury or weakness, such as rectocoele and/or intussusception;
- Dynamic failure of evacuation without structural abnormalities: functional defaecation disorders;

Ragg J (2011) Colorectal Dis 13: 1299-302

Impact on quality of life

Both faecal incontinence and constipation affect patients' quality of life an create several limitation in daily activities.

Conservative treatment, surgical treatment or a combination of both are needed to improve quality of life.

Campion EW (1994) New Engl J Med 330 (25): 1819-1820

Paula Igualada-Martinez

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Affiliations to disclose†:

Coloplast Ltd
(Continence Advisory Board – Product Development)

† All financial ties (over the last year) that you may have with any business organisation with respect to the subjects mentioned during your presentation

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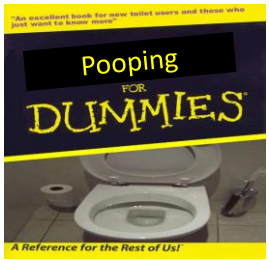

The defecation process and its disturbances

By
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NHS Foundation Trust
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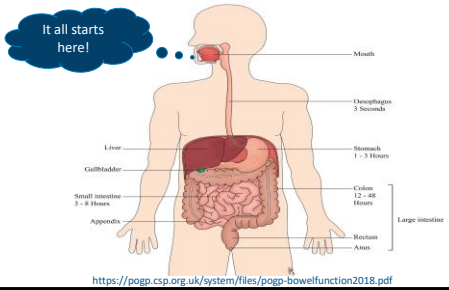

https://pogp.csp.org.uk/system/files/pogp-bowelfunction2018.pdf

Overview of the Defecation process

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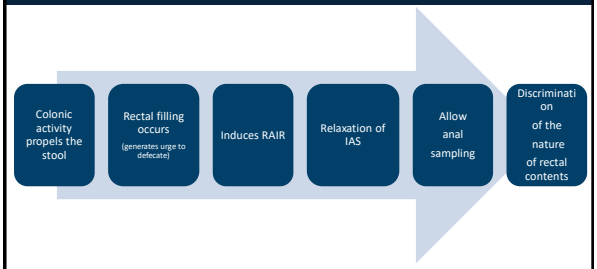

Palit et al (2012) Dig Dis Sci 57:1445-1464

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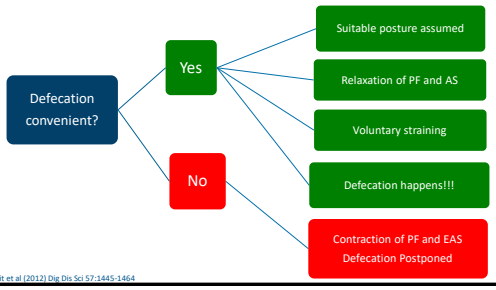

Palit et al (2012) Dig Dis Sci 57:1445-1464

The anorectal angle!

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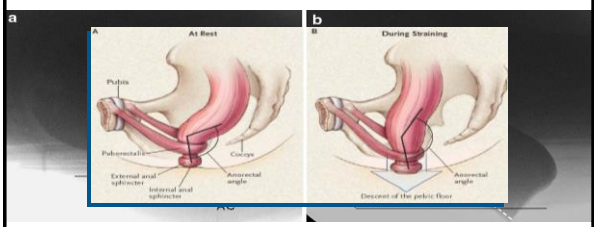

Normal evacuation proctogram images during defecation.
At rest (a), the posterior anorectal angle (dotted white line) measures 100; the level of the anorectal junction (ARJ) is marked by the solid black line; and the site of the closed anal canal (AC) is represented by the white arrow. During expulsion (b), the anorectal angle opens to 178, the anorectal junction descends, and the anal canal opens

Rao (2010) Clinical Gastroenterology and Hepatology;8:910-919

Altered defecation patterns

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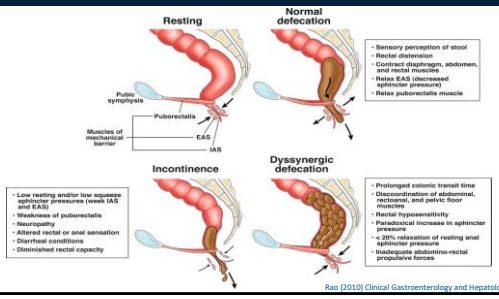

Rao (2010) Clinical Gastroenterology and Hepatology;8:910-919

Frequency of normal defecation

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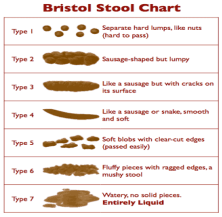
The normal frequency varies from 3 times a day to three times a week. Men tend to do a type 2 to 4 whereas women tend to do 2 to 6.



Mitsuhashi et al (2018) Characterizing Normal Bowel Frequency and Consistency in a Representative Sample of Adults in the United States (NHANES). *The American Journal of Gastroenterology* **volume 113**, pages 115–123 (2018)

Factors influencing defecation

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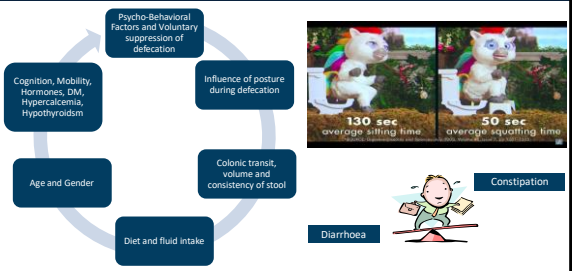

Palit et al (2012) Dig Dis Sci 57:1445-1464

Take Home Messages

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- Defecation is started by Rectal Distention which is stimulated by colonic movement which is stimulated by food digestion
- The anorectal angle facilitates evacuation and this is achieved by having a good toilet posture
- Normal bowel frequency is defined between three times a day to once in three days
- Postponing defecation is a voluntary action and may lead to defecation difficulties
- There are several factors that may influence the defecation process and they are important when treating a patient with faecal incontinence and/or defecation difficulties

Summary of Conservative Management of Fecal Incontinence

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Professor and Professor of Nursing Research
University of Minnesota School of Nursing
Minneapolis, MN
Chair, ICS Nursing Committee

ICS

Donna Bliss

Affiliations to disclose:

- Consulting agreement for research with Domtar and Hillrom
- Travel expenses and honorarium for conference presentation from Hartmann
- Subcontract of NIH grant of Innovative Design Labs for an educational simulation program

Funding for speaker to attend:

- [x] Self-Funded
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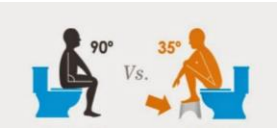
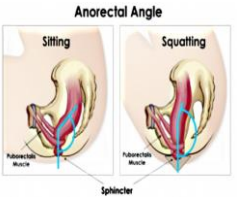
I. Lifestyle Modifications

- Body Position
- Modify Diet
- Dietary Fiber Supplementation
- Practical Coping Strategies
- Weight Loss

Body position

- Promoting defecation





Reduce, Avoid Aggravating Foods

- Spicy, ethnic foods
- Fatty, greasy foods, eggs
- Caffeinated coffee, chocolate
- Dairy products
- Fresh apricots, strawberries, citrus
- Popcorn, nuts, seeds
- Onions, beans
- Cabbage, broccoli
- Alcohol





(Hansen J et al. *JWOCN* 2006; *Croswell E et al. JWOCN 2010)*

Dietary Fiber Supplement Psyllium

Recommendations

- Psyllium: Moderately fermentable and soluble
- Start at lower amount, increase as needed
- Mix in adequate fluid, baked goods, capsule; take with sufficient fluid

Evidence

- A supplement of psyllium (3.4 – 16 gm/d)
  - Lower FI frequency, firmer stool consistency
- Psyllium supplement (3.4 mg/day) as effective as loperamide (2 mg/day)
- Adverse GI symptoms are small; tolerance is individual

(Bliss et al. *Nurs Res*, 2001 & 2011; *RINAH*, 2014; *Incontinnce* 2017; Markland et al. *Dis Colon Rec*, 2015)

Practical Advice for Coping

- Carrying small kits for cleansing and change
- Modify eating patterns – timing
- Use environmental aids
- Locating or mapping public toilets -- apps

SITORSQUAT

Flush Toilet Finder

(Bliss et al. *Incontinence* 2017; Peden-McAlpine et al, *WJNR* 2008)

Weight loss for FI

On Diet Program

- Earlier: no effect on FI
- Recent: Women with DI who lost weight improved UI, but did not improve FI
- Recommended for general health

After Bariatric Surgery

- Mixed results
- FI ↓ 19.4% women at 12 mos. postop vs. 8.6% preop (Burgio et al *Obstet Gynecol.* 2007)
- AI ↑ in 12.5% at 5.6 months postop (Scozzari et al. *Obesity Surg* 2013)
- FI ↑ in 50% women and 30% men at 2 years post-op post-op (Roberson et al. *Digest Dis Sci* 2010)

II. Initial Interventions

- Medications
- Rectal Emptying/ Irrigation
- Absorbent Products

Medications

Antimotility
Loperamide

- 2 to 4 mg then titrate up to 24 mg/d in divided doses before meals and sleep
- Risk of constipation side effect

(Halverson, *Clinics in Colon and Rectal Surgery*. 2005; Bliss et al., *Incontinence* 2017)

Combination therapy

- Loperamide (1 mg) + biofeedback + fiber supplement (2g isphagula or stericulia) = ↓ **FI more** than BF or drugs+fiber alone (Sjodhal et al., *Scand J Gastroenterol* 2015)
- Loperamide + psyllium + placebo + diet sheet = FI no different (Lauti et al. *Colorectal Dis*, 2008)

Rectal Emptying

- Purpose: empty rectum, more complete elimination, prevent involuntary leakage
  - Transanal irrigation systems

mbh-international.com/ product/ Qufora IrriSedo Balloon and qufora-mini-system/

Peristeen® anal irrigation system http://www.medicalexpo.com/prod/coloplast/product-78838-489466.html

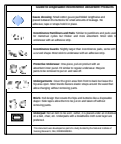
- Suppository, abdominal massage, digital stimulation, senna, prunes – less evidence

(Collins & Norton, Br J Nurs 2013; Rosen et al. Colorectal Dis. 2011; Bliss et al., Incontinence 2017)

Resources about Absorbent Products

- Website for assisting with selecting products
  - **Continence Products Advisor** http://www.continenceproductadvisor.org/
    - Types of products
      - Pads, pantiliners, briefs, etc
      - For light to heavy leakage
      - Day vs night

- Guide to common absorbent product types (Bliss et al., *JWOCN* 2013)
  - ICS Nursing Committee webpage https://www.ics.org/Documents/Documents.aspx?FolderID=317



III. Secondary Interventions

Anal plugs, anal inserts, vaginal bowel device



(Continence Products Advisor http://www.continenceproductadvisor.org/; Coloplast; Renew Medical Inc. http://www.medgadget.com/2015/02/pelvalons-eclipse-vaginal-insert-for-fecal-incontinence-fda-approved.html; Cottenden et al., *Incontinence* 2017)

Evidence Update

- PFMT+ Biofeedback seems more effective than PFMT alone (RCTs needed)
  - 2nd line intervention
  - Therapist, motivation of patient may be influential
  - Home practice may benefit some/younger patients
- Low frequency ES is weakly/not effective for FI when used alone or along with BF
- Triple therapy (3T) – more effective
  - Electrical stimulation of *moderate* frequency + EMG Biofeedback 2x per day
  - Moderate frequency ES = 3000 Hz for 6 months

(Bliss et al. *Incontinence 2017*)

Paula Igualada-Martinez

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Affiliations to disclose†:

Coloplast Ltd
(Continence Advisory Board-Product Development)

† All financial ties (over the last year) that you may have with any business organisation with respect to the subjects mentioned during your presentation

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Trans-anal Irrigation Therapy (TAI)

By
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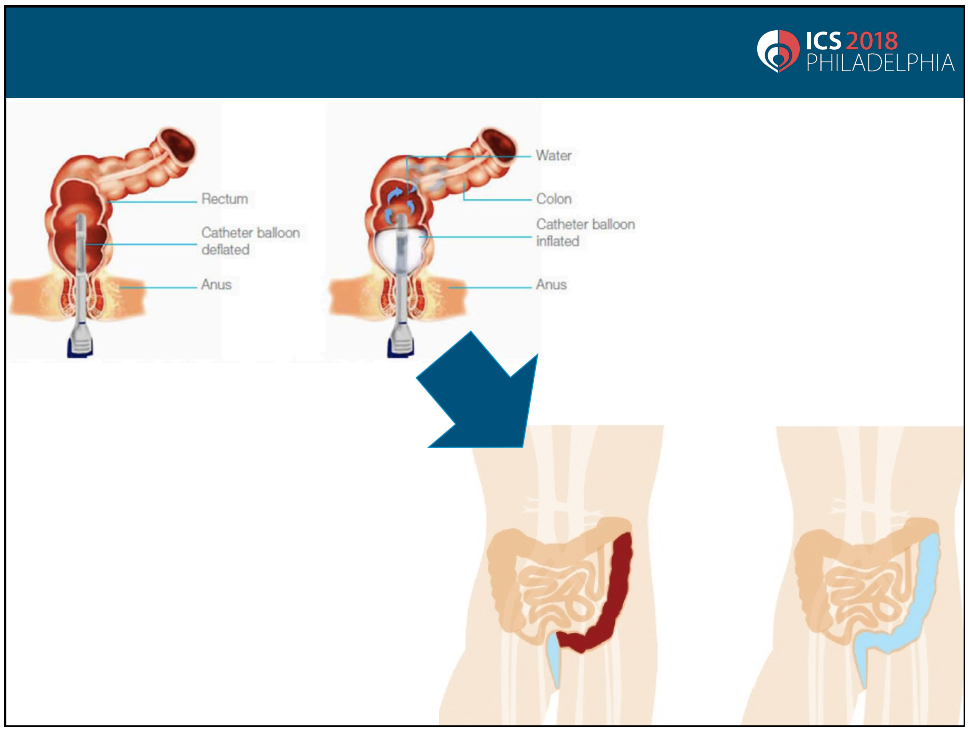
Guy's and St Thomas' NHS
NHS Foundation Trust

- Trans-anal irrigation therapy (TAI), commonly known as Rectal irrigation, involves facilitation of bowel evacuation by instilling water into the rectum via the anus, using either a balloon catheter or cone delivery system.

Emmett et al. BMC Gastroenterology (2015) 15:139
Emmanuel et al. Spinal Cord (2013) 51:732–738

How does TAI work?

- TAI assists bowel evacuation by introducing warm water into the rectum and colon via the anus and using a balloon catheter and/or cone system;
- The balloon catheter or cone delivery system is attached via a plastic tube to an irrigation bag holding up to 1.5 liters of water although typically only 0.5–1 liter is required;
- Alternatively a low-volume system consisting of a hand pump and a cone may be employed. This will normally deliver up to 80mls of water;
- The water is subsequently evacuated into the toilet with the content of the descending colon, sigmoid colon and rectum.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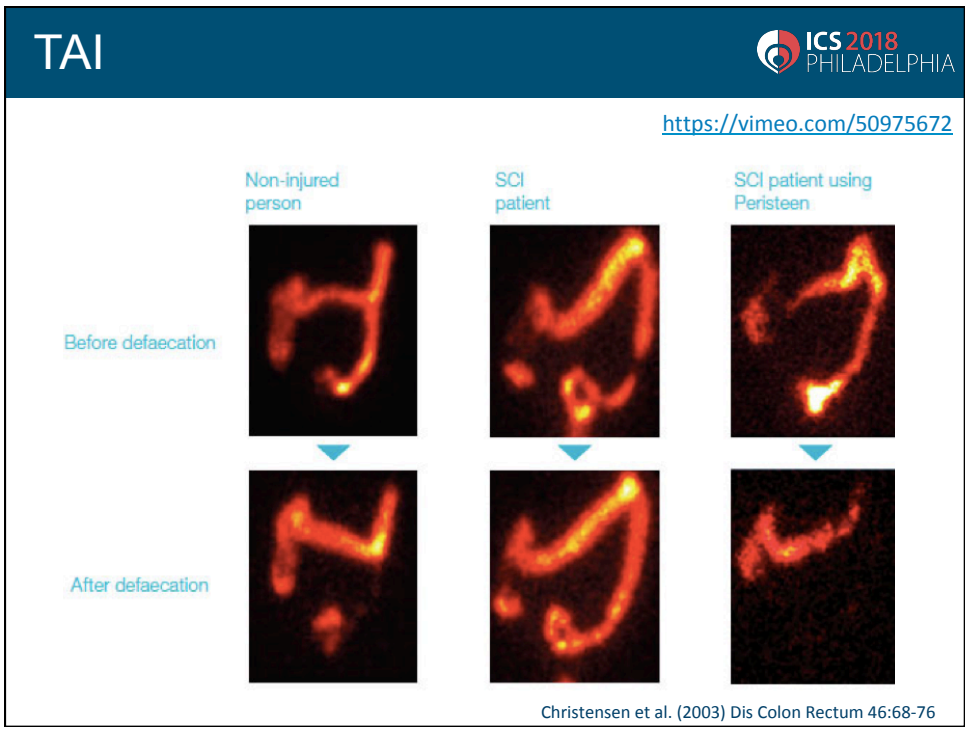
Rectum
Catheter balloon deflated
Anus
Water
Colon
Catheter balloon inflated
Anus

TAI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PHILADELPHIA
https://vimeo.com/50975672
Non-injured person
SCI patient
SCI patient using Peristeen
Before defaecation
After defaecation
Christensen et al. (2003) Dis Colon Rectum 46:68-76

Benefits of TAI

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The regular use of TAI allows to re-establish and control bowel function in patients with bowel dysfunction.

This enables patients to develop a bowel routine by choosing the time and place of evacuation.

In patients with evacuatory dysfunction, regular evacuation of the rectosigmoid region can accelerate transit through the entire colon and therefore helps to prevent blockages. In patients with faecal incontinence prevents faecal soiling

Alternative to surgery.

Improving confidence and quality of life in patients!

Emmett et al. BMC Gastroenterology (2015) 15:139
Emmanuel et al. Spinal Cord (2013) 51:732–738
Christensen et al. Gastroenterology (2006) 131(3):738-47

Indications of TAI

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- Faecal Incontinence
- Defecatory dysfunction:
- Idiopathic Post-traumatic Constipation
- Neurological Bowel dysfunction (MS, SCI, Spina bifida…)

Emmett et al. BMC Gastroenterology (2015) 15:139

Contraindications

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Absolute contraindications:

- Anal or rectal stenosis
- Active inflammatory bowel disease
- Acute diverticulitis
- Colorectal cancer
- Within 3 months of rectal surgery
- Within 4 weeks after endoscopic polypectomy
- Ischaemic colitis

Relative contraindications/ Precautions:

- Severe diverticulosis
- Long-term steroid medication
- Radiotherapy to the pelvis
- Prior rectal surgery
- Faecal impaction
- Painful anal conditions
- Current or planned pregnancy
- Bleeding diathesis or anticoagulant therapy
- Severe autonomic dysreflexia
- Change of bowel habit
- The use of rectal medication
- Children below 3 years of age
- Severe heart/liver disease

Emmanuel et al. Spinal Cord (2013) 51:732–738

When should TAI be considered?

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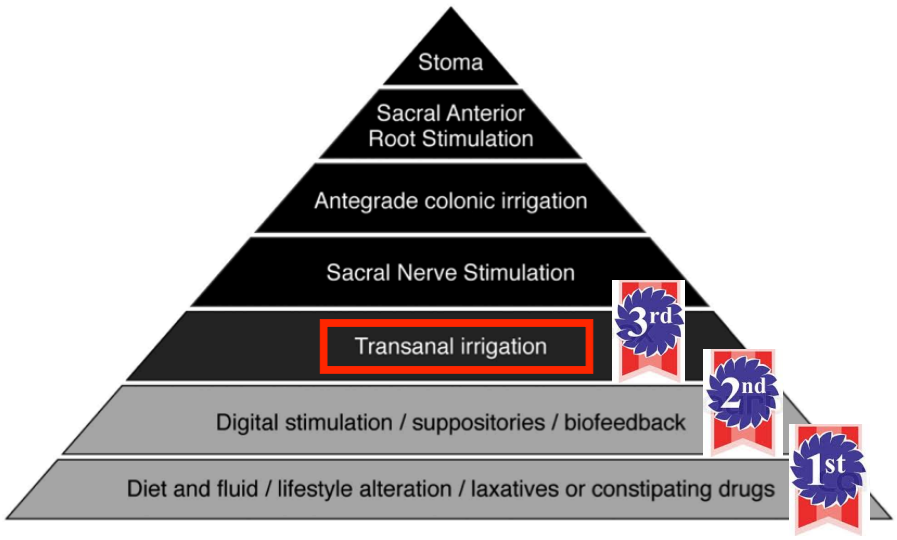

Emmanuel et al. Spinal Cord (2013) 51:732–738

Patient selection and work up!

- The patient should be known to the health care professional initiating TAI
  - Pathophysiology and clinical indication of TAI
- The escalation of treatment pre TAI is an important part of deciding which method of TAI
  - Complying with clinical guidance and clinical governance
- Psyche and Motivation!
- Patient's manual dexterity

Patient assessment pre TAI

- Review bowel management and ensure that the appropriate escalation of treatment has been completed!
- Assessment by a clinically competent TAI health care professional:
  - Symptoms up to date and comparison to the first visit with an appropriate outcome measure
  - Review PMHx, DHx and SurgHx=check contraindications!
  - Impact on QoL/ADL's
  - DRE±VE±Abdominal palpation
  - Bowel diary
  - 'Home made treatments' (coffee enemas, colonic irrigation, etc…)

Complications – Bowel perforation

- Bowel perforation is a rare complication of TAI
  - DRE/Patient evaluation is mandatory pre TAI!
- The patient usually experiences:
  - Severe/sustained pain in the abdomen/back
  - Severe anal bleeding
  - Patient should be advised to seek immediate medical help!
- In order to minimize the risk:
  - Training the patient! + Discuss symptoms of bowel perforation
  - Regular contact + contact details of the health professional that provided the TAI system

Emmanuel et al. Spinal Cord (2013) 51:732–738

Initiating treatment

- PRACTICE-PRACTICE-PRACTICE-PRACTICE-PRACTICE!!!
- Patient training
  - Explain rationale and procedure for the use of TAI
    - "Make it personal": correlation of the benefit of using TAI with the patient's symptoms and the alternative of not using TAI
    - Ensure the patient provides consent!
  - The patient should demonstrate "competence in clinic"
  - Establish a routine for the patient
    - Is there a better time? What about making use of the gastrocolic reflex?
  - Discuss frequency of TAI
    - Ideally, daily use and decrease to alternate days when patient confident with the use and experienced benefit of TAI (individual to each patient!)
  - Further encouragement of an appropriate diet and fluid intake with a reminder of defecation dynamics

- Discuss use of water and number of pumps required with each TAI system
- Set up realistic expectations
  - It may take a few weeks for an optimum benefit of TAI
- Discuss expected complications with the TAI system and how to resolve them
- Discuss the use of laxatives as an adjunct to TAI depending on initial diagnosis and indication of TAI

- Ongoing support/adherence to the TAI
  - Follow up in person or via a telephone appointment
  - Is there a specific timeframe??
    - 2/52 in our local hospital
  - Long-term patients have access to a group session at our local hospital
    - *"Consider group sessions as a way of teaching and supporting patients performing transanal irrigation (Recommendation Grade D- ICI 2017)".*
  - Make accessible for patients to contact you in clinic or a designated health professional within your unit
  - Give them the number of the different TAI companies

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What does the literature say?

It's safe!!

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Tech Coloproctol (2016) 20:109–115
DOI 10.1007/s10151-015-1400-8

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ORIGINAL ARTICLE

Global audit on bowel perforations related to transanal irrigation

P. Christensen[1] · K. Krogh[2] · B. Perrouin-Verbe[3] · D. Leder[4] · G. Bazzocchi[5] · B. Petersen Jakobsen[6] · A. V. Emmanuel[7]

Received: 10 September 2015 / Accepted: 26 October 2015 / Published online: 16 November 2015

Abstract
Purpose Transanal irrigation is increasingly used against chronic constipation and fecal incontinence in selected patients. The aims were to estimate the incidence of irrigation-related bowel perforation in patients using the Peristeen Anal Irrigation® system, and to explore patient- and procedure-related factors associated with perforation.
Methods External independent expert audit on the complete set of global vigilance data related to Peristeen Anal Irrigation from 2005 to 2013.
Results In total, 49 reports of bowel perforation had been recorded. Based on sales figures, this corresponds to an average risk of bowel perforation of 6 per million procedures. The latest two-year data indicate a risk of 2 per million procedures. In 29 out of 43 evaluable cases (67 %), perforation happened within the first 8 weeks since start of treatment. After 8 weeks, long-term use has an estimated risk of less than 2 per million procedures. Among patients with non-neurogenic bowel dysfunction, 11 out of 15 (73 %) had a history of pelvic organ surgery compared to 5 out of 26 (19 %) in neurogenic bowel dysfunction. In 11 of 46 (24 %) evaluable cases, burst of the rectal balloon was

Conclusion Enema-induced perforation is a rare complication to transanal irrigation with Peristeen Anal Irrigation, which increases the benefit risk ratio in support of the further use of transanal irrigation. Increased risk is present during treatment initiation and in patients with prior pelvic organ surgery. Careful patient selection, patient evaluation and proper training of patients are critical to safe practice of this technique.

Keywords Functional GI diseases · Large intestine · Constipation · Outcomes research · Surgery · Devices

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Scandinavian Journal of Gastroenterology, 2010; 45: 517–527

informa healthcare

REVIEW ARTICLE

Transanal irrigation for disordered defecation: A systematic review

In patients with chronic idiopathic constipation, defecation disturbances after anorectal surgery or miscellaneous functional bowel problems, transanal irrigation can be attempted as a simple and reversible treatment, but whether it is superior to other non-surgical procedures remains to be studied. However, it seems reasonable to offer transanal irrigation before irreversible surgical procedures are considered.

Key Words: *Constipation, disordered defecation, enema, faecal incontinence, neurogenic bowel dysfunction, review, transanal irrigation*

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Emmett *et al. BMC Gastroenterology* (2015) 15:139
DOI 10.1186/s12876-015-0354-7

BMC Gastroenterology

RESEARCH ARTICLE Open Access

CrossMark

Trans-anal irrigation therapy to treat adult chronic functional constipation: systematic review and meta-analysis

Christopher D. Emmett[1*], Helen J. Close[2], Yan Yiannakou[3] and James M. Mason[2]

Abstract

Background: Trans-anal irrigation (TAI) is used widely to treat bowel dysfunction, although evidence for its use in adult chronic functional constipation remains unclear. Long-term outcome data are lacking, and the effectiveness of therapy in this patient group is not definitively known.

Conclusions: The reported success rate of irrigation for functional constipation is about 50 %, comparable to or better than the response seen in trials of pharmacological therapies. TAI is a safe treatment benefitting some patients with functional constipation, which is a chronic refractory condition. However findings for TAI vary, possibly due to varying methodology and context. Well-designed prospective trials are required to improve the current weak evidence base.

than the response seen in trials of pharmacological therapies. TAI is a safe treatment benefitting some patients with functional constipation, which is a chronic refractory condition. However findings for TAI vary, possibly due to varying methodology and context. Well-designed prospective trials are required to improve the current weak evidence base.

ICS 2018 PHILADELPHIA

Tech Coloproctol
DOI 10.1007/s10151-016-1502-y

ORIGINAL ARTICLE

Results of long-term retrograde rectal cleansing in patients with constipation or fecal incontinence

P. F. Vollebregt[1] · A. K. E. Elfrink[2] · W. J. H. J. Meijerink[2] · R. J. F. Felt-Bersma[1]

Conclusions RC is a moderately effective long-term alternative in patients who do not respond to medical therapy and biofeedback exercises. There is a high dropout rate in the first months, but a moderate rate of continuation in the period hereafter. No predictive factors for continuation were found in medical history or function tests. Those who continued RC performed better on the SF-36 subscale energy/fatigue.

TAI – Decision Matrix

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	Clinical Indication	Why	Rationale
Peristeen® Qufora Cone Toilet® and Navina™ Smart	Slow transit constipation Chronic faecal incontinence and/ or constipation	Would like to clear the bowel to the Splenic flexure Balloon system to be used if patient cannot hold cone insitu (dexterity and mobility problems)	Cone is as effective as a catheter Water filled balloon less likely to expel with spasms Safety valve on balloon to prevent over-inflation
Qufora Mini System®	Evacuation difficulties, incomplete evacuation, passive soiling, post defecation soiling, rectocele	Require only a small amount of water to start defecation or clear the rectum	Easy to use and effective Able to use it on the go

Cannot recommend one system over another! Most of the time depends on clinicians clinical experience + competence with TAI systems and the PATIENT!

Christensen et al (2003) Dis Colon Rectum 46:68-76

Emmanuel et al. Spinal Cord (2013) 51:732–738

TAI systems

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- Qufora IrriSedo Mini Guide
  - https://www.youtube.com/watch?v=Ar4BAwlBvUk

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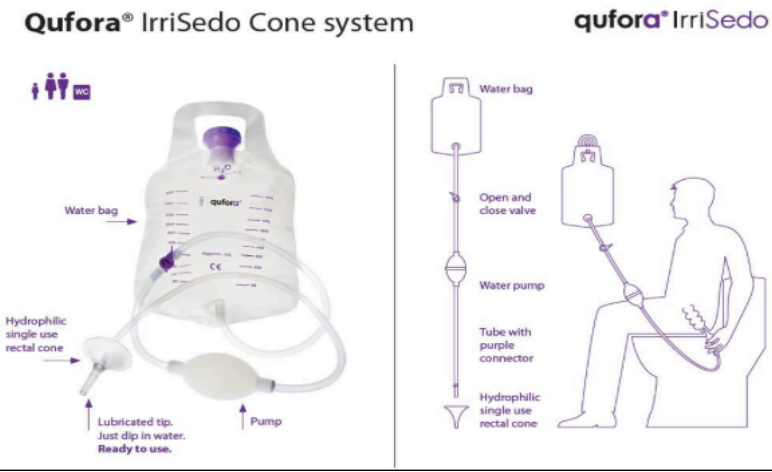
- Qufora IrriSedo Cone Guide
  - https://www.youtube.com/watch?v=4YLSg8RDE_I



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- Peristeen – Coloplast
  - https://www.youtube.com/watch?v=M89WHE3TAZA

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- Navina- New kid in town!

http://www.wellspect.com/products/bowel-products/navina-smart

Trouble-shooting

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Consensus review of best practice of transanal irrigation in adults

Emmanuel et al. Spinal Cord (2013) 51:732–738

Bleeding	A small amount of bleeding is to be expected More copious or regular bleeding requires further investigation Haemorrhage with or without pain suggests a probable perforation, which should be treated as a medical emergency
Pain	If cramps, discomfort or pain occur while instilling the irrigation, pause instillation for a few moments and continue more slowly once the discomfort has subsided, ensure that irrigant is warm enough—at body temperature, around 36–38 1C If pain is severe/persistent stop irrigating—possible bowel perforation— medical emergency
Autonomic dysreflexia and autonomic symptoms during irrigation (sweating, palpitations and dizziness)	Instil the irrigant slowly Limit time on toilet depending on tolerance If symptoms are bothersome, ensure the patient is not alone when irrigating until symptoms at each TAI are reduced/absent If patient is at risk of AD medication should be immediately available in the home setting If AD occurs, stop irrigation immediately. Further assessment and possibly other interventions are required before continuing with TAI
Digital rectal check and removal of stool if present Increase frequency and/or volume of transanal irrigation to ensure evacuation is adequate	Digital rectal check and removal of stool if present Increase frequency and/or volume of transanal irrigation to ensure evacuation is adequate

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Leakage of water around the catheter/cone	**Ensure catheter/cone is properly located** **Check water temperature** **Where used, increase balloon inflation up to maximum of five pumps Instill water more slowly** **Reflex expulsion of the catheter, where used** **Check water temperature** **Ensure rectum empty of stool** **Inflate balloon more slowly** **Minimise inflation to avoid triggering reflexes** **Check for and treat constipation**
Irrigant is not expelled	**Repeat irrigation** **Use adjunctive measures as described Ensure patient is adequately hydrated** **Assess for constipation and treat if necessary**
No stool is evacuated after transanal irrigation	**Repeat irrigation or split the irrigation into two consecutive episodes, 10–15 min between episodes, using half the irrigant each time** **Use adjunctive measures** **Consider use of laxatives** **Check for constipation and treat as required** **Ensure the patient is well hydrated** **No stool may be present if a good result was obtained at last irrigation; if this happens regularly consider reducing frequency of irrigation** **If no stool for several days, suspect constipation/impaction, assess and treat accordingly**

Faecal incontinence between uses of transanal irrigation	**Increase volume of water by small increments (100 ml) until satisfactory evacuation achieved with no faecal incontinence Split the irrigation into two consecutive episodes, 10–15 min between episodes, using half the irrigant each time Increase frequency of transanal irrigation Consider laxative use**
Leakage of water between irrigations	Ensure patient allows sufficient time on toilet following transanal irrigation Encourage use of adjunctive measures to encourage emptying Reduce or decrease amount of water instilled Split the irrigation into two consecutive episodes, 10–15 min between episodes, using half the irrigant each time An Anal Plug (Coloplast) can be tried if problem persists

Conclusion – Take Home messages

- TAI is a beneficial and effective intervention for patients with lower bowel dysfunction
- Escalation of the appropriate treatment and an appropriate assessment (QoL/Symptoms) pre TAI is essential in order to adhere with clinical guidelines/ governance
- Patient selection is the number 1 factor for a successful intervention!
- Patient's support is the key for the success of the intervention in the short and the long term
- Ongoing liaison with the rest of the multidisciplinary team is essential for the ultimate benefit of the patient!!