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

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**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**
- 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**

**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 function. 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. Hence, faecal incontinence has to be considered the common final pathway symptom of multiple independent aetiologies. 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. 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”


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. Surgery often does not achieve a cure and carries a risk of worsening incontinence severity. 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. The evidence base of conservative management is variable and more research is needed since it is a cornerstone of therapy. 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

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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
Anatomy of the lower GI and pathophysiology of lower bowel dysfunction

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Funding for speaker to attend:

- Self-funded
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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 subject matter presented during your presentation.

Anatomy of the lower GI

Defaecation

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

Continence is the result of a balanced interaction between:
- Anal sphincter complex (internal and external anal sphincter)
- Stool consistency;
- Rectal reservoir function;
- Neurological function;


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);
- Congential disorders: imperforated anus, cloacal defect, spina bifida;


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;


- 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

Deficient colonic contractile activity
- slow stool transit

Problems with emptying evacuation disorders

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

Evacuation disorders might be further subdivided into:
- **Structural pelvic floor abnormalities**: as a consequence of pelvic floor injury or weakness, such as rectocele and/or intussusception;
- **Dynamic failure of evacuation without structural abnormalities**: functional defaecation disorders;


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

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

The defecation process and its disturbances

By Paula Igualada-Martinez
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Overview of the Defecation process

Colonic activity propels the stool
Rectal filling occurs (generates urge to defecate)
Induces RAIR
Relaxation of IAS
Allow anal sampling
Discrimination of the nature of rectal contents

Defecation convenient?

Yes
- Suitable posture assumed
- Relaxation of PF and AS
- Voluntary straining
- Defecation happens!!!

No
- Contraction of PF and EAS
- Defecation Postponed

The anorectal angle!


Normal evacuation proctogram images during defecation.

In rest (a), the posterior anorectal angle (closed 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 ARJ descends, and the anal canal opens. (Reproduced with permission from Elsevier.)

It all starts here!
Altered defecation patterns

- Floating
- Normal defecation
- Dyskinesia
- Incontinence

Factors influencing defecation

- Postbiomechanical factors and voluntary suppression of defecation
- Cognition, Motivation, Inhibition, Imitation, Hypertension
- Age and gender
- Diet and fluid intake
- Colonic transit, shape, and consistency of stool

Take Home Messages

- 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

Frequency of normal defecation

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.

Bristol Stool Chart

Type 1:
- Separated lumps
- Loose stool

Type 2:
- Semi-formed
- Soft stool

Type 3:
- Semi-formed
- Lumpy stool

Type 4:
- Firm stool
- Solid stool

Type 5:
- Hard stool
- Prolapse of faecal matter

Type 6:
- Fullness in lower abdomen
- Unstable bowel

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

I. Lifestyle Modifications

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

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:
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- Sponsored by: Empowering Evidence 2014

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

(Draper 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, capsules; 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; BMJ, 2014; incontinence 2017; Markland et al., Dia Colorec, 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

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

**After Bariatric Surgery**
- Mixed results
- FI ↓ 19.4% women at 12 mos. postop vs. 8.6% preop (Buergi et al. Obstet Gynecol. 2007)
- AI ↑ in 12.5% at 5.6 months postop (Scocozza et al. Obesity Surg. 2013)
- FI ↑ in 50% women and 30% men at 2 years post-op post-op (Roberson et al. http://www.continenceproductadvisor.org/)

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

**Combination therapy**
- Loperamide (1 mg) + biofeedback + fiber supplement (2g isphagula or stericulia) = ↓ FI more than BF or drugs + fiber alone
  (Spodlich et al. Scand J Gastroenterol 2015)
- Loperamide + psyllium + placebo + diet sheet = FI no different
  (Judd et al. Colorectal Dis. 2006)

Rectal Emptying

- Purpose: empty rectum, more complete elimination, prevent involuntary leakage
- Transanal irrigation systems
- Suppository, abdominal massage, digital stimulation, senna, prunes – less evidence

Resources about Absorbent Products

- Website for assisting with selecting products
  **Continence Products Advisor**
  http://www.continenceproductadvisor.org/
  - Types of products
    ▪ Pads, pantliners, 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

This document was developed as part of a study funded by the National Institute of Nursing Research, NIH, R03806M38261.
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/pelvalon-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

(Cottenden et al., Incontinence 2017)
Affiliations to disclose†:
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(Continence Advisory Board-Product Development)

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Trans-anal Irrigation Therapy (TAI)

By
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• 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.


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.
Benefits of TAI

- 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!


Indications of TAI

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

Contraindications

**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


When should TAI be considered?

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


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

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- 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
What does the literature say?

It’s safe!!

Global audit on bowel perforations related to transanal irrigation

P. Christensen1 · K. Krogh2 · B. Perrin-Voerbe3 · D. Leder4 · G. Bazzone5 · B. Petersen Jakobsen6 · A. V. Emmanuel7

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Abstract

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.


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 3 per million procedures. In 29 out of 45 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 48 (24 %) the perforation occurred inside of the anal canal itself.

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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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, fecal incontinence, anorectal bowel dysfunction, review, transanal irrigation

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RESEARCH ARTICLE

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

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

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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

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

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

• Qufora IrriSedo Mini Guide
  • [https://www.youtube.com/watch?v=Ar4BAwlBvUk](https://www.youtube.com/watch?v=Ar4BAwlBvUk)

• Qufora IrriSedo Cone Guide
  • [https://www.youtube.com/watch?v=4YLSg8RDE_I](https://www.youtube.com/watch?v=4YLSg8RDE_I)
• Peristeen – Coloplast
  • https://www.youtube.com/watch?v=M89WHE3TAZA

• Navina- New kid in town!
## Trouble-shooting

### Consensus review of best practice of transanal irrigation in adults


| 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°C
|                                  | 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

### 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!!