

## INTERNATIONAL EXPERT CONSENSUS ON BEST PRACTICE RECOMMENDATIONS FOR TRANS ANAL IRRIGATION IN CHILDREN

### Hypothesis / aims of study

Today, transanal irrigation (TAI) is a commonly accepted treatment for moderate and severe bowel dysfunction (BD) in both adults and in children. TAI use in adults is now well-defined in a step-wise pyramid of care, as a second-line treatment when conservative and medical treatments of bowel dysfunction have failed. Recent studies using TAI in children have reported high rates of success both in clinical outcomes and in improvement of Quality of Life (QoL). Because the experience on the use of TAI in adults cannot be directly translated to the paediatric patient population, the aim of this paper is to provide a best-practice consensus review in order to facilitate paediatric healthcare professionals to introduce TAI into their clinical practice and to perform it safely and effectively.

### Study design, materials and methods

A consensus group of specialists from different nations (France, Germany, United Kingdom, Italy, The Netherlands and USA) and various paediatric disciplines (gastroenterologist, colorectal surgeon, paediatric surgeons, paediatric urologists), all with a long-term experience of TAI and BD, worked together in order to produce this consensus review on the basis of existing published literature and their own accumulated clinical experience. Individual group members prepared a write-up each on a single section, and consensus was reached by several round-table discussions and common review of the overall article. The existing published evidence was reviewed in order to support (or contrast) the authors' clinical experience and opinions.

### Results

Consensus has been defined in the following topics and sections:

**Indications for TAI:** A review is made of the different therapeutic strategies for the management of constipation and fecal incontinence in children. Paediatric conditions where TAI is indicated for the management of bowel dysfunction are shown in Table 1. The table is based on both the existing published evidence and, where this is limited, on the clinical experience of the authors.

Table 1. Paediatric indications for TAI
Neurogenic bowel dysfunction due to spinal abnormalities, spinal cord injury or cerebral palsy
Patients with anorectal malformations or Hirschsprung's disease sequelae
Fecal incontinence due to iatrogenic injury (including tumor surgery sequelae)
Medical therapy-resistant Constipation or Fecal Incontinence (retentive or not) or for lifestyle preference of the patient
Medical Therapy-resistant functional constipation
Medical Therapy-resistant functional non retentive fecal incontinence (FNRFI)

In paediatric patients, TAI must be considered in a general bowel management programme. A pyramid for step-wise treatment of bowel dysfunction in children is suggested (Fig.1). This pyramid is an adaptation of the one suggested for the adult patient population in 2013 (1). TAI is placed as a second-line treatment, after conservative medical strategies such as diet and laxatives have failed, but before any surgical approach such as a MACE or stoma formation. This is based on the proven effectiveness of TAI in various studies to improve symptoms of bowel dysfunction and increase quality of life, while being a minimally invasive and non-surgical procedure.

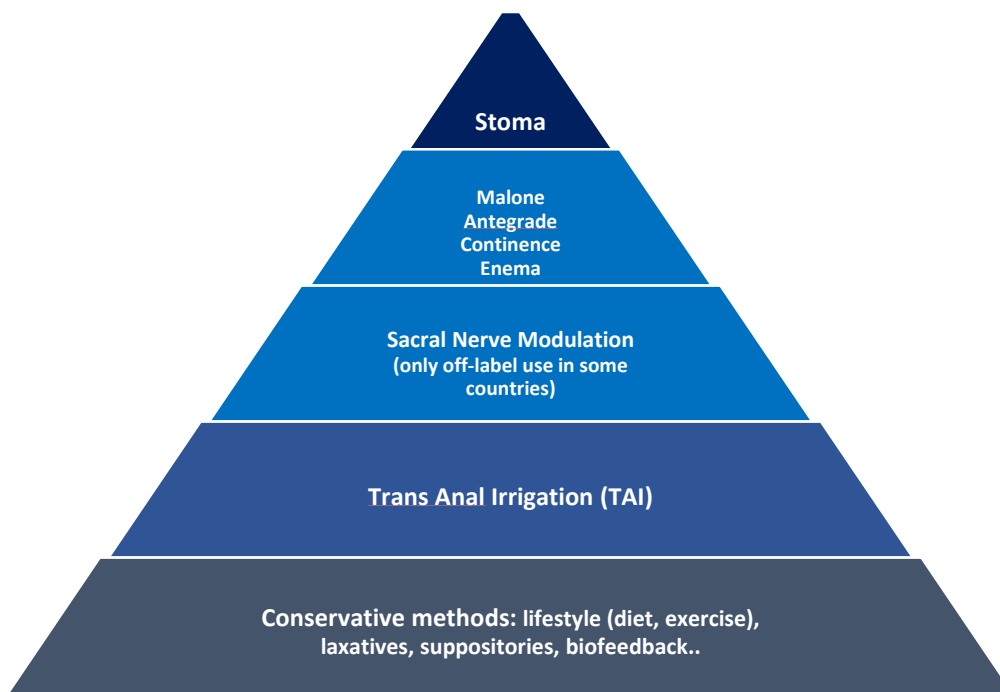


Figure 1:

**Patient Selection and Training:** The differences between TAI in adults and children need to be understood and appreciated before this technique can be translated to paediatric use. Age and maturity of the child can dictate independent use, which the authors encourage, but this may also be related to the underlying pathology. Explanation of the technique is required in a positive child-friendly way, for example with picture books, films, websites, or toy-models. In any case, the approach needs to be tailored towards the cognitive, educational and psychological status, maturity and motivation of the individual child and family, on whom the ultimate success of TAI is so dependent. Practical advice regarding volume, temperature and tonicity of the irrigant water, use of laxatives and frequency of TAI is given. A troubleshooting table is proposed with practical advice for healthcare professionals about the most common problems faced when TAI is performed, and how to address them, including:

*Child motivation*

*Difficulty inserting catheter/cone or instilling irrigant*

*Expulsion of the catheter*

*Leakage of irrigant around the catheter/cone*

*Pain (rectal and/or abdominal)*

*Bleeding*

*Risk of autonomic dysreflexia (AD), TAI-induced autonomic symptoms*

*Irrigant is not expelled after TAI*

*No stool is evacuated after TAI*

*Fecal incontinence between sessions of TAI*

**Predictors of success and complications of TAI:** A review of the effectiveness of TAI in children is made based on existing literature. Despite the differences in success criteria and assessment methods, the existing literature shows significant improvements in frequency and severity of fecal incontinence, improvements in constipation, QoL and time spent addressing the bowels by the child and/or family. As for adult patients, the most severe complication of TAI in children is bowel perforation. Based on the available data, the incidence of bowel perforation in children is estimated to be in the order of 1 ppm (1 in one million procedures). This seems to be half the estimated overall incidence for all patients (adults and children combined) in a paper from 2015 (2). Other minor complications are described more frequently such as pain on insertion (in 24% of patients) or catheter expulsions (in 17% of patients), but these do not affect safety or effectiveness.

#### Interpretation of results

On the basis of literature data and professional experience, TAI is a well-documented, safe and effective therapeutic approach for treating paediatric BD. In children, TAI has been used mainly on neurogenic bowel dysfunction (NBD) and anorectal malformations (ARM), safely and effectively but without a standardized approach.

#### Concluding message

TAI can be used for various neurogenic, anatomical and/or functional pathologies as a second-level treatment after conservative methods have failed, but prior to surgical approaches. Our best-practice suggestions based on professional shared experiences as well as data from the literature define indications and provide practical advice on using TAI, in order to facilitate effective clinical practice by paediatric healthcare professionals.

#### References

1. Emmanuel AV et al. Consensus review of best practice of transanal irrigation in adults. *Spinal Cord* (2013) 51 , 732-738
2. Christensen P et al. Global audit on bowel perforations related to transanal irrigation. *Tech Coloproctol*, February 2016 Volume 20, Issue 2, pp 109-115

Disclosures

**Funding:** The work was financially supported by Coloplast A/S. The authors of this work have received compensation from Coloplast A/S as members of an advisory board. **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** This is a best practice consensus review based on existing and published literature (for which ethics committee approvals exists when needed) and professional regular practice experience without interventional or investigational setting. **Helsinki:** Yes **Informed Consent:** Yes