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ADVANCED TRANS ANAL IRRIGATION IN PAEDIATRIC PATIENTS WITH NEUROGENIC BOWEL DYSFUNCTIONS RELATED TO SPINAL CORD LESIONS

Hypothesis / aims of study

Transanal Irrigation (TAI) with an enema continence catheter was reintroduced into clinical practice in children with neurogenic bowel dysfunctions (NBD) related to spina bifida (SB). On the basis of reported these promising results TAI, using advanced device for controlled irrigation, was then applied to adults with NBD and to children for whom conservative treatment had failed, and successful different single centre experience have been reported. The aim of this multicentric study is to present the results of TAI in a cohort of paediatric patients with congenital or acquired spinal cord lesions (SCL).

Study design, materials and methods

Eight nation spina bifida centres participated in the study. Inclusion criteria were age between 6-17 years, weight above 20 kg, and unsatisfactory bowel management, defined by spending more than half an hour attempting to defecate daily or every other day, pain or bleeding during defecations, faecal incontinence occurring once or more per month or autonomic dysreflexia before or during evacuation. Patients with chronic inflammatory bowel diseases, mental disabilities, and surgery within the previous three months were excluded. Patients and their parents were exhaustively informed about the study and enrolled after written consent had been obtained. At the beginning of treatment (T0) and after three months (T1), the Bristol scale, a questionnaire assessing bowel function, and two questionnaires on quality of life for patients aged 6-11 years (CHQ pf50) and 12-17 years (SF36) were administered. The Peristeen® Anal Irrigation System (Coloplast A/S Kokkedal, Denmark) was used for an advanced TAI treatment. Patients were trained to use the self-administered transanal irrigation system by specialised nurses and a medical doctor at T0. The volume of water used was 10/20 ml/kg every day for the first week and then three times a week, increasing the amount of water as needed to a maximum of 1 litre. Statistical analysis was performed on different items at the beginning of the study (T0) and at 3 months (T1) using a paired sample t-test. The data were analysed using SPSS (Statistical Package for the Social Sciences) version 22.0 (Windows, Microsoft, USA), and P <0,05 was considered to be statistically significant.

Results

40 patients were enrolled, and 37 completed the study. Mean age, 14,2 years, 24 female and 13 males. Bowel function results are reported in Table 1. Regarding the Bristol scale, at T0, types 1-2 of stool consistency were observed in 77,5% of SCL patients, whereas at T1 they were present in only 2,5% of SCL patients. QoL improved in all groups.

Tab.1. Bowel function and symptoms

	T0 (%)	T1 (%)
CONSTIPATION	92,7	41,5
FAECAL INCONTINENCE	39,0	9,8
SYMPTOMS DURING EVACUATION	73,2	31,7
DAILY INCONTINENCE TO GAS	39,0	10,0
USE OF LAXATIVE	48,8	5,1
EVACUATION ON TOILET	72,5	80,5
CAREGIVER HELP	95,0	76,2

Interpretation of results

Many different empirical treatments and procedures have been used to treat bowel dysfunctions, including laxatives, suppositories, manual extractions, anorectal biofeedback and enemas. These results are often disappointing and inconsistent over time in terms of QoL and for this reason more invasive solutions have been proposed in the past as Malone surgical procedure to perform Antegrade Colonic Enema. This is a multicentric national study that considered the use of advanced TAI using irrigation device in a large paediatric populations with NBD. Because no validated questionnaire assessing NBD in children is available, a targeted questionnaire was designed by a multidisciplinary group of experts for this study. Our results confirmed that advanced TAI is significantly effective in reducing constipation (from 92,7% to 41,5%), as well as faecal incontinence (from 39% to 9,8%) and gas incontinence (from 31,7% to 10). To evaluate the QoL in our cohorts, two validated questionnaires for the paediatric population were selected, based on the experience of participating centres with these types of patients. The questionnaires are distinguished based on the targeted age groups. The CHQ-pf50 was administered to parents of patients 6 to 11 years old, whereas the SF36 was self-administered to patients aged between 12 and 17 years. QoL was shown to improve in all groups. In the younger group, a significant improvement of QoL was recorded for 7 out of 9 variables. In the older group, a significant improvement in QoL was observed for all variables but one (bodily pain). During the training period and initial follow-up, the support of a dedicated team is strongly advised to manage those technical aspects, such as balloon burst and leakage, which otherwise might discourage beginners. In our experience, TAI was associated with excellent safety margins, and patient

satisfaction was related to only secondarily reported problems, such as catheter manipulation, that never led them to drop out of the study.

Concluding message

Advanced TAI improves bowel function and QoL in SCL children with constipation and/or incontinence. According to our results, TAI has to be considered a simple, safe, and useful therapeutic method for managing chronic constipation and faecal incontinence that has positive effects on the self-esteem and independence of patients, improving their QoL. Then TAI is a valid alternative tool within the progressive steps of treatment to avoid more invasive procedures as Malone. Tai has to be considered in all patients with NBD as well as clean intermittent catheterization is considered in children with neurogenic bladder.

References

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Disclosures

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