

COST-EFFECTIVENESS OF TRANSANAL IRRIGATION VERSUS CONSERVATIVE BOWEL MANAGEMENT FOR SPINAL CORD INJURY PATIENTS

Hypothesis / aims of study

Neurogenic bowel dysfunction in patients with spinal cord injury (SCI-patients) has been documented in several studies and results in constipation and/or faecal incontinence with a great impact on quality of life. The aim of this study was to calculate the cost-effectiveness of two different bowel management methods: transanal irrigation and conservative bowel management.

Study design, materials and methods

The study was a comparative cost-effectiveness analysis of the cost and patient benefits in Germany done according to international guidelines for Health Economics (1).

Effect variables were drawn from a prospective, randomised, controlled multicentre trial conducted in 2003-2005 (2). The study included 87 SCI-patients with faecal incontinence and/or constipation, from spinal cord centres in 5 EU countries, and compared transanal irrigation using Peristeen Anal Irrigation (Coloplast A/S) with conservative bowel management according to clinical practical guidelines (3) using methods such as laxatives, suppositories, digital stimulation and manual evacuation. The effect of each bowel management method was measured before and after 10 weeks using the Cleveland Clinic Constipation Scoring System, St Mark's Faecal Incontinence Grading System, and the Neurogenic Bowel Dysfunction score.

Cost variables (i.e. cost of constipation medication, treatment for urinary tract infections, products, labour of carer helping with bowel management and lost productivity of patients) were based on the clinical study results. Prices for products were based on average list prices and wages were obtained from the Federal Statistical Office, Germany. Estimates of time spent on bowel management, changes/washing due to soiling, use of constipation medicine and urinary tract infections were from the clinical study where possible and supplemented with expert opinion derived from 21 interviews.

Results

Table 1 summarises the effects of conservative bowel management and transanal irrigation obtained in the clinical study (2). When comparing outcome measures at termination, significant results in favour of transanal irrigation were found for all three scoring systems. Conservative bowel management resulted in a slight improvement in faecal incontinence symptoms, whereas symptoms of constipation and neurogenic bowel dysfunction were slightly worse after 10 weeks. Transanal irrigation resulted in an improvement of symptoms for all three scoring systems.

Table 2 lists the costs calculated for each bowel management method. Although product-related costs were higher for transanal irrigation, the lower costs of labour, treatment of urinary tract infections and loss of productivity results in a lower total cost to society when using transanal irrigation compared to conservative bowel management.

The robustness of the analyses was investigated in a sensitivity analysis. Worst and best case scenarios did not alter the conclusions.

Table 1. Effect of the two bowel management methods. For all three scoring systems, a higher score indicates more severe symptoms. Effects with negative values are improvements, i.e. reductions in symptom severity. *P* values are given for differences between groups at termination (student's *t* test).

		Cleveland constipation scoring system	Clinic St. Mark's faecal incontinence grading system	Neurogenic bowel dysfunction score
Conservative Bowel Management	Baseline	12.8	8.4	13.0
	Termination	13.2	7.3	13.3
	Effect	0.4	-1.1	0.3
Transanal Irrigation	Baseline	13.7	8.8	14.8
	Termination	10.3	5.0	10.4
	Effect	-3.4	-3.8	-4.4
<i>P</i> value		0.0016	0.015	0.048

Table 2. Costs of the two bowel management methods. Costs reported for 2-day period, corresponding to average interval between bowel management procedures.

	Conservative Bowel Management	Transanal Irrigation
Labour Cost		
Cost of carer helping with bowel management and changes/baths due to soiling	€9	€7
Product-Related Cost		
Cost related to products used for changes/baths due to soiling,	€5	€16

products for transanal irrigation, and constipation medicine		
Urinary Tract Infection Cost		
Cost for general practitioner visit, urine test, antibiotics	€ 3	€ 1
Patient Indirect Expenditure		
Patient productivity loss due to time spent on bowel management	€ 23	€ 15
Total Cost to Society	€ 40	€ 38

Interpretation of results

For the management of neurogenic bowel dysfunction, transanal irrigation was shown to be more effective than conservative bowel management measured by the three scoring systems. Furthermore, the total cost to society was lower for patients managed with transanal irrigation.

Concluding message

The cost-effectiveness analysis shows that transanal irrigation is dominant for all three effect parameters, meaning that transanal irrigation is cheaper and more effective than conservative bowel management.

References

- (1) Methods for the Economic Evaluation of Health Care Programmes, Oxford, Oxford Medical Publications (2000)
- (2) Gastroenterology (2006) 131; 738-747.
- (3) J Spinal Cord Med (1998) 21; 248-293.

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HUMAN SUBJECTS: This study was approved by the The ethics committees of Aarhus County and followed the Declaration of Helsinki Informed consent was obtained from the patients.