647

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ESTIMATED COST OF BOWEL MANAGEMENT IN PEOPLE WITH SPINAL CORD INJURY

Hypothesis / aims of study

Neurogenic bowel dysfunction has a major impact on patient quality of life due to constipation, faecal incontinence, the extended time spent on defecation, and the social restrictions that bowel dysfunction imposes on the patient. It affects around 80% of all spinal cord injured patients to some degree. Current management of neurogenic bowel dysfunction is largely empirical with limited evidence base. There is also a lack of evidence on the costs of current management, both to the health care system and to society as a whole.

Assessing the cost-effectiveness of new interventions is of major importance in policy decisions. However, part of this process is to establish the cost of current management solutions, to give an indication of the potential implications of introducing new methods from an economic perspective. The aim of this study was to estimate the costs to society of current bowel management for neurogenic bowel dysfunction caused by spinal cord injury (SCI).

Study design, materials and methods

A structured literature search was conducted to identify studies reporting on costs of bowel management for neurogenic bowel dysfunction as well as studies reporting management methods and their frequency of use for people with SCI.

This health economic analysis is a cost of illness (COI) analysis. It estimates the costs to society of bowel management in people with spinal cord injury based on the identified literature studies. The cost estimates were made for one year for the US spinal cord injury population. The analysis follows international guidelines for health economic studies.

Variables included were: use of bowel medication, dependency on help for bowel management, time spent on bowel management, complications, and bowel-related surgical procedures. The variables were obtained from three main references [1-3], and validated by comparison with the remaining studies identified in the literature search. Health-care costs were estimated by using reimbursement rates. Salary cost data were primarily obtained from various official national statistics, where the costs were summarized from several sources and adjusted to 2009 US dollars. Drug Topics Red Book was consulted for drug costs.

Results

The results of the health economic analysis are given in Table 1 by cost category.

Interpretation of results

This study revealed that the largest costs in bowel management for SCI were associated with management of faecal incontinence, help for individuals dependent on help for bowel management, and the time spent on bowel management by the spinal cord injured individual. Medication for bowel care was also estimated to represent a large cost to society. Overall, the estimated costs for management of neurogenic bowel dysfunction in the SCI population show that it is expensive to society in addition to its great impact on patient quality of life.

The study is limited by the fact that it highlights some of the main costs associated with bowel management in SCI, but is not exhaustive with respect to the costs. As an example, the study does not include costs of supplies for manual evacuation and digital stimulation or costs of ostomy pouches or irrigation kits for antegrade continence enemas.

It must be stressed that the costs are estimates based on literature findings. However, the results give an indication of the size of the problem and show that solutions that can bring down these costs have the potential to significantly reduce the cost to society of bowel management in this population. New bowel management options should therefore demonstrate cost-effectiveness from the societal perspective.

Concluding message

The study shows that current bowel management for neurogenic bowel dysfunction caused by spinal cord injury entails large costs to society.

Table 1. Estimated annual costs of bowel management in the US spinal cord injury population (US dollars)

Variable	Estimated Cost
Bowel medication	
- Rectal suppositories	11,302,911
- Enemas	5,837,783
- Oral laxatives	21,458,380
- **Total**	**38,599,074**
Faecal incontinence	
- Patient time spent on incontinence episodes	23,756,250
- Help for taking baths & changing clothes/linen	5,612,946
- Supplies (pads, soap, detergent, etc.)	88,221,036
- **Total**	**117,490,232**
Help with bowel management	
- Nurse	84,187,613
- Personal carer	29,645,280
- Partner	39,027,139

- **Total**	**152,860,032**
Patient time spent on bowel management	**308,637,000**
Complications	
- Impaction	9,652,500
- Hospitalisation due to bowel-related problem	695,250
- **Total**	**10,347,750**
Bowel-related surgical procedures	
- Sacral anterior root stimulator	807,403
- Antegrade continence enema	1,185
- Colostomy	459,205
- **Total**	**1,267,793**

Cost of bowel medication is listed under 3 subcategories. Rectal suppositories cover bisacodyl and glycerin suppositories. Oral laxatives cover peristaltic stimulants, osmotic laxatives, bulk forming agents and stool softeners.

References

1. Coggrave M et al. Spinal Cord. 2008 Nov 18. Epub ahead of print
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