BURDEN OF ILLNESS DUE TO BOWEL DYSFUNCTION IN SPINAL CORD INJURED SUBJECTS WITH BLADDER DYSFUNCTION OR URINARY RETENTION: A DANISH REGISTER STUDY

Sternhufvud C[1], Kjellberg J[2], Ibsen R[3], Petersen B[4], Lynge Buchter M[5]

1. Coloplast AB, Kungsbacka, Sweden. 2. VIVE, København, Denmark. 3. I2Minds, Aarhus, Denmark. 4. MedDevHealth, Holte, Denmark. 5. Coloplast A/S, Humlebæk, Denmark

Objectives

People suffering from spinal cord injury (SCI) are likely to experience a lack of bladder and bowel control due to neurogenic damages acquired. Bowel dysfunction often causes constipation, fecal incontinence or both with a significant impact on the quality of life of the patient. The objective of this study was to describe the burden of illness derived from bowel dysfunction (BD) in subjects with SCI and concomitant bladder dysfunction.

Methods

Data were extracted from Danish national registers using ICD-10 codes to identify subjects with SCI and concomitant bladder dysfunction or urinary retention. Cases were matched 1:4 to controls on age, gender, marital status, municipality, educational level, and index year. Inclusion period was 2002-2016 and follow-up 1 year from index date.

Results

2.132 people with SCI and bladder dysfunction were identified, with an average age of 57 and 70%/30% male/female ratio. Age, gender and marital status where similar for cases and controls due to the matching.

Compared to controls the SCI population experienced a 20-fold increase in bowel related hospitalisations, 23-fold increase in bowel related days in hospital, and 17-fold increase in bowel related outpatient visits. Likewise, bowel related hospitalisation costs were significantly higher for SCI cases compared to controls, as was costs of prescription drugs for constipation respectively corresponding to a 50- and 59-fold increase in costs.

When looking at overall health care utilization this was also found to be significantly higher in the SCI population compared to the control group. This is seen as significantly more hospital admissions, a greater number of days in hospital, an increased amount of outpatient visits and readmissions and a high use of primary care services (Table 2).

Table 1: Health care encounters and costs related to bowel dysfunction

	SCI cases	SCI controls
Bowel dysfunction related hospital admission, per person-year	0,04*	0,002
Days in hospital related to bowel dysfunction, per person-year	0,23*	0,01
Outpatient visits related to bowel dysfunction, per person-year	0,17*	0,01
Bowel dysfunction inpatient costs, per person-year, €	200*	4
Outpatient constipation medication costs, per person-year, €	178*	3

*Significantly different from control group

Table 2: Health care utilization

	SCI cases	SCI control
Hospital admissions, per person-year	2,6*	0,3
Number of days in hospital, per person-year	42,4*	1,5
Outpatient visits, per person-year	16,7*	2,8
30-day readmission rate, per person-year	0,8*	0,2
Primary care services	104,6*	22,3

*Significantly different from control group

Discussion

This study investigates the burden of illness related to bowel dysfunction in people with SCI. We have found a high health care utilization linked to bowel dysfunction both inpatient, outpatient and in the use of outpatient prescription drugs. It has not been possible to explore bowel dysfunction treated in primary care as diagnoses given by general practitioners are not linked to the national registers. This could mean that the actual burden of bowel dysfunction is underestimated in this study as it does not include primary care. Likewise, it is not possible to track over the counter medication which can be used to treat constipation or fecal incontinence.

Conclusion

This Danish register study shows that people with spinal cord injury and bladder dysfunction additionally suffer from significant bowel dysfunction. This is seen in frequent hospitalisations, a higher number of days in hospital, frequent outpatient visits, and frequent use of prescription drugs for constipation, all reflected in the related higher costs. Therefore, more focus on bowel management in people with SCI and bladder dysfunction is needed to reduce this additional burden of illness.

Further studies are needed to fully uncover the unmet needs related to bowel dysfunction and thereby to learn how to better support patients with both bladder and bowel dysfunction and raise the standard of care.

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