

## THE LACK OF IMPACT OF BLADDER MANAGEMENT STRATEGIES IN HEALTH-RELATED QUALITY OF LIFE OF SPINAL CORD INJURY PATIENTS

### Hypothesis / aims of study

Traumatic spinal cord injury (SCI) can result in a wide variety of voiding dysfunctions which may have a negative impact on health-related quality of life (HRQL) in these patients. Our aims were to assess the relationship between bladder management methods and HRQL and identify any correlation between a general and a urinary disorder-specific questionnaire in patients with SCI.

### Study design, materials and methods

A cross-sectional study was performed between March and December 2010 in two institutions. Patients attending either the Urology or the Physical Medicine and Rehabilitation outpatient clinic that had sustained a traumatic SCI more than 12 months before were asked to participate. Patients were asked to fill in the Short-Form 8-Item Health Survey (SF-8) (higher score representing better HRQL) and the Qualiveen Short Form (SF-Qualiveen) (higher score representing lower HRQL), each composed of eight questions. Demographic and clinical data were also collected. Results are presented as median and interquartile range (IQR). The relationship between bladder management methods and HRQL measured by the SF-8 (both Physical (PCS-8) and Mental (MCS-8) summary measures) and SF-Qualiveen was evaluated by the Kruskal-Wallis test. Additionally, the scores obtained for both questionnaires were compared for continent versus incontinent patients (defined as the need for at least one pad/day, diaper or condom catheter) using the Mann-Whitney test. Finally, the correlation between the two questionnaires was assessed using Spearman's *rho* ( $\rho$ ).

### Results

Ninety-five patients completed the two questionnaires and had all necessary demographic and clinical data available for analysis. Briefly, 77% were male (73/95); median age at SCI event was 27 years old (IQR: 20-38); and median time elapsed from SCI and date of questionnaire completion was 13 years (IQR: 7-20). The following table shows the bladder management methods and corresponding scores in the two HRQL questionnaires. Differences between PCS-8, MCS-8 and SF-Qualiveen scores among the various bladder emptying method groups did not reach statistical significance ( $p = 0.21$ ,  $0.41$  and  $0.38$ , respectively). Continent patients reported a significantly lower SF-Qualiveen score compared to incontinent patients (median score of 2.1 vs. 2.6,  $p = 0.04$ ) but did not report significantly higher scores in PCS-8 (median score of 43.4 vs. 38.8,  $p = 0.44$ ) or MCS-8 (median score of 47.2 vs. 45.6,  $p = 0.27$ ). Correlations between SF-Qualiveen score and PCS-8 ( $\rho = -0.40$ ) and between SF-Qualiveen and MCS-8 ( $\rho = -0.41$ ) were weak but statistically significant ( $p < 0.01$ ).

Bladder management method	N (%)	PCS-8 score	MCS-8 score	SF-Qualiveen score
Normal voiding	16 (16.8)	33.4 (29.3-46.3)	42.1 (32.3-47.7)	1.9 (1.4-2.3)
Valsalva / Credé maneuver	10 (10.5)	36.3 (30.4-52.1)	48 (45.6-51.3)	2.1 (1.8-2.8)
Clean intermittent self-catheterization	50 (52.6)	43 (32.2-50.3)	47.8 (38.3-52.3)	2.4 (1.5-3)
Clean intermittent catheterization by attendant	7 (7.4)	27.1 (23.3-31.1)	34.3 (31.7-52.3)	2.6 (2-2.8)
Indwelling transurethral catheterization	8 (8.4)	44.5 (32.4-45.8)	43.3 (40.7-47.4)	2.3 (1.5-3.3)
Indwelling suprapubic catheterization	4 (4.2)	43.2 (34-50.1)	41.2 (30.2-50.2)	1.8 (2.6-2)

### Interpretation of results

Bladder management method may not have a decisive impact on HRQL measured either by a general or a urinary disorder-specific questionnaire in patients with SCI. Interestingly, urinary problems such as incontinence events may not significantly diminish HRQL as a whole in SCI patients; possibly other issues play a more significant role. Nevertheless, SF-Qualiveen may be an invaluable instrument to evaluate the impact of interventions aimed at diminishing urinary events in SCI patients. These results may be hampered by the relatively small sample size.

### Concluding message

HRQL may not be affected by bladder management method in SCI patients, as measured by general and urinary disorder-specific questionnaires. The occurrence of urinary incontinence has more impact on HRQL than the method used for bladder emptying. Specific questionnaires such as SF-Qualiveen are required to study the effect of interventions in urinary-related events.

<i>Specify source of funding or grant</i>	None
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	No
<i>This study did not require ethics committee approval because</i>	It was based on anonymous questionnaires; confidentiality was guaranteed.
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes