



Management of Neurogenic Lower Urinary Tract Dysfunction and Impact on Quality of Life in Spinal Cord Injuries in Canada

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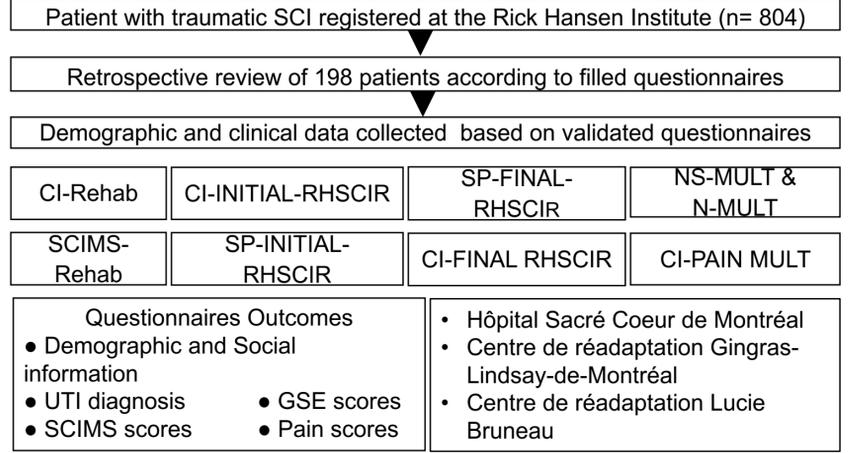
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INTRODUCTION & OBJECTIVES

Management of **Neurogenic lower urinary tract dysfunction (NLUTD)** represents an incredible economic burden on health care system and quality of life.

The aim is to describe **bladder management methods used with longstanding SCI**, and to address the **impact of NLUTD and related management strategies on quality of life**.

METHODS



RESULTS

Table 1: Functional status and pain scores comparisons with or without UTI

Variable	UTI Mean (± SD.)	No UTI Mean (± SD.)
N (%)	81 (42)	113 (58)
SCIM – Spinal Cord Independence Measure (0-100)		
Self-Care subtotal score (0-20)**	5.8 (5.6)	9.2 (6.1)
Respiration and Sphincter management subtotal score (0-40)**	17.6 (6.4)	23.7 (13.0)
Mobility subtotal score (0-40)**	7.3 (8.4)	13.4 (10.7)
Total SCIM score (0-100)**	30.3 (17.5)	46.3 (24.9)
Pain Questionnaire		
Pain Management Satisfaction (0-10)	7.9 (2.1)	8.2 (1.7)
Pain Interference with Daily Activities (0-10)	3.8 (2.9)	3.5 (3.1)
Pain Interference with Mood (0-10)	2.6 (2.6)	3.2 (2.9)
Pain Interference with Sleep (0-10)	3.3 (2.8)	3.5 (2.9)
The General Self-Efficacy Scale (10- 40)	34.1 (4.7)	34.3 (4.5)

Values are expressed as mean (SD) **p<0.001, *p<0.05, t-test between patients with UTI vs without UTI

Table 2: Quality of Life related variables in relation to Disability Scale (ASIA)

Questionnaire	Variable	ASIA Impairment Scale				P value
		A	B	C	D	
N (%)		36 (25%)	24 (17%)	24 (17%)	58 (41%)	
SCIM – Spinal Cord Independence Measure (0-100)						
	Self-Care subtotal score (0-20)	7.42 (5.3)	8.0 (6.3)	6.46 (5.5)	8.55 (6.6)	0.523
	Respiration and Sphincter management subtotal score (0-40)	18.42 (6.5)	22.29 (20.6)	17.96 (5.7)	23.85 (9.7)	0.057
	Mobility subtotal score (0-40)**1	7.14 (7.3)	8.54 (8.5)	6.79 (5.9)	16.21 (11.6)	0.000
	Total SCIM score (0-100)*2	32.97 (15.5)	38.83 (29.3)	31.21 (14.6)	47.78 (25.0)	0.003
The General Self-Efficacy Scale (10-40)		35.07 (4.6)	34.2 (4.5)	33.5 (4.1)	34.26 (4.4)	0.675

Data presented as mean (SD) or number (%) from total population, **p<0.001, *p<0.05, one-way ANOVA, Post Hoc (Tukey):

1: significant difference between A, B and C vs D

2: significant difference between A and C vs D

Abbreviations: AIS, American Spinal Injury Association Impairment Scale; SCIM, Spinal Cord Independence Measure

Table 3: Bladder management strategies

Questionnaire	Variable	Normal Voiding	Intermittent self-catheterization (ISC)	Intermittent catheterization by attendant	Indwelling Urethral (UC)	Indwelling Suprapubic (SPC)
N (%)		73 (49%)	52 (35%)	4 (3%)	12 (8%)	7 (5%)
SCIM – Spinal Cord Independence Measure (0-100)						
	Self-Care subtotal score (0-20)**1	9 (6.4)	11 (4.6)	0.66 (0.57)	2.5 (3.7)	2.8 (3.3)
	Respiration and Sphincter management subtotal score (0-40)**2	24 (9.6)	22 (15.5)	15(4.2)	16 (3.9)	12 (6.3)
	Mobility subtotal score (0-40)**3	15 (11.6)	11.2 (6.8)	1.3 (2.3)	3.5 (3.4)	1.5 (1.7)
	Total SCIM score (0-100)**1	48 (25)	44 (20)	17 (2.1)	22 (8.3)	17 (9.6)
Pain Questionnaire						
	Pain Management Satisfaction (0-10)	8 (1.6)	8 (1.8)	9 (1.4)	7 (3.1)	9 (1.5)
	Pain Interference with Daily Activities (0-10)*4	4 (3.2)	3 (2.7)	5 (4.5)	1.4 (2.1)	4 (3.3)
	Pain Interference with Mood (0-10)	3 (2.9)	3 (2.5)	3 (1.3)	3 (3.4)	4 (2.8)
	Pain Interference with Sleep (0-10)	3.4 (2.8)	3 (2.9)	2.3 (4.0)	3.4 (2.9)	5 (3.1)
	Average Neuropathic Pain Intensity (0-10)	4.5 (2.5)	4 (2.5)	5 (3.5)	4 (3.3)	5 (1.9)
The General Self-Efficacy Scale (10-40)*2		35 (3.7)	34.4 (3.8)	29 (10.1)	32 (5.4)	31 (9.7)
UTI diagnosis (yes)#		20 (27.4%)	22 (42.3%)	2 (50%)	7 (58.3%)	3 (42.9%)

Data presented as mean (SD) or percentage (%) from total population, **p<0.001, *p<0.05, one-way ANOVA, Post Hoc (Tukey)

1: significant difference (Normal voiding and ISC vs UC and SPC),

2: significant difference (Normal voiding vs SPC),

3: significant difference (Normal voiding vs UC and SPC),

4: significant difference (Normal voiding vs UC)

chi-square test (P-value = 0.07)

DISCUSSION

- Overall rate of **UTI** in SCI patients is **42%**
- ISC (35%) and normal voiding (49%)** were the most common modalities
- UTI diminishes patients QoL** and reduces independence
- Normal micturition provides **higher self-esteem and a better QoL**
- UC and IC-A lead to **poorer QoL** than normal voiding
- Indwelling urethral catheter** is associated with higher risk for **UTI (58%)**
- UTI risk** between **SPC** and **ISC** patients appears comparable

CONCLUSIONS

- The most common bladder management methods were **normal voiding and intermittent self-catheterization**
- Bladder management strategy and UTI had substantial impact on Functional Independence Measure
- ISC provide optimal management and better long-term quality of life in selected traumatic SCI patients

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