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OBJECTIVE

- Females with spinal cord injury (SCI) have been collectively analyzed along with males with SCI, despite the fact that females have fundamentally different genitourinary anatomy.
- We hypothesized that females have different patient reported outcomes and quality of life (QoL) related to their neurogenic bladder dysfunction and management.

METHODS

- The Neurogenic Bladder Research Group (NBRG)-SCI registry is a multicenter prospective observational study designed to assess bladder-related QoL after SCI.
- Outcomes included the Neurogenic Bladder Symptom Score (NBSS), and a global satisfaction with urinary function question (QoL item), Neurogenic Bowel Dysfunction (NBD) Score
- Multivariate linear regression analysis was conducted controlling for age, obesity, years since injury, chronic pain, UTI burden (\geq 4 per year), severe bowel dysfunction (NBD ≥14), SCI-QoL bladder management difficulties and SCI-FI fine motor score.

COHORT

Table 1. Demographics and selected outcomes by gender and spinal cord injury classification

		Paraplegic	Tetraplegic		
	Male	Female	P-value	Male	Female
	N=470	N=373		N=424	N=212
Age (years), Mean (SD)	46.2 (13.4)	44.4 (13.0)	0.13	44.4 (12.8)	43.4 (13.3)
Years since injury, Mean (SD)	14.6 (11.8)	14.0 (11.5)	0.52	15.3 (12.1)	14.1 (11.3)
Obese (BMI≥30)	86 (23.8%)	93 (30.9%)	0.08	52 (17.0%)	41 (25.0%)
NBSS Total Score	24.3 (10.5)	28.4 (10.8)	<.001	20.5 (9.3)	24.1 (11.0)
NBSS Quality of Life	2.1 (1.2)	2.3 (1.2)	0.01	1.9 (1.2)	2.1 (1.3)
SCI-QoL Bladder Mgt Difficulties	58.3 (7.5)	60.5 (7.3)	<.001	55.8 (7.4)	57.9 (7.8)
Severe Bowel Dysfunction (NBD≥14)	153 (35.9%)	151 (44.2%)	0.02	164 (42.7%)	88 (44.4%)
SCI-FI Fine Motor Score	58.0 (5.1)	57.4 (5.0)	0.07	45.6 (7.3)	45.7 (7.1)
Bladder ranked highest concern	183 (38.9%)	158 (42.4%)		152 (35.8%)	82 (38.7%)

GENDER IMPACT ON BLADDER-RELATED OUTCOMES AND QUALITY OF LIFE AFTER PARAPLEGIC SPINAL CORD INJURY

RESULTS



Table 2. Multivariate linear regression analysis of bladder-relatedonoutcomes in paraplegic patients stratified by gender						
		Paraplegic M	ale	Paraplegic Female		
		Coefficient (95% CI)	P-value	Coefficient (95% CI)	P-value	
'e	NBSS Total Sc	ore (CIC is reference)				
	IDC	-4.22 (-7.19, -1.25)	0.005	-4.67 (-7.98, -1.35)	0.006	
	Surgery	1.77 (-2.01, 5.55)	0.36	-3.35 (-5.85, -0.85)	0.009	
g	Voiding	2.52 (0.25, 4.80)	0.03	5.35 (2.78, 7.93)	<.0001	
(IDC)	NBSS Quality	of Life Score (CIC is re	eference)			
	IDC	0.18 (-0.23, 0.59)	0.38	-0.04 (-0.47, 0.38)	0.85	
	Surgery	-0.59 (-1.11, -0.07)	0.03	-0.71 (-1.03, -0.39)	<.0001	
	Voiding	0.19 (-0.13, 0.50)	0.24	0.04 (-0.29, 0.37)	0.81	

	 To our knowledge, this is the first study t differences in neurogenic bladder sympt
P-value	 cord injury. Females with paraplegia experience wor have more opportunity for improvement Further studies and focus group-based responses
0.18	explore the complex relationship betwee
0.49	 strategy, physical ability and outcomes. Educational offerts to improve bladder r
0.07	tailored to address gender-specific conce
<.001	
0.14	
<.001	Funding: PCORI CER14092138 and NIH UL1
0.69	The University of Utah Study Design and Biostatistics Center
0.93	SDBC Center for Clinical and Translational Science http://www.ccts.utah.edu/biostats/

to demonstrate that there are coms based on gender after spinal

rse bladder-related symptoms and t with surgery. research are needed to further en gender, bladder management

related outcomes should be erns.

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Clinical Trial Registration: clinicaltrials.gov NCT02616081