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CROSS-SECTIONAL PREVALENCE STUDY OF URINARY AND/OR ANAL INCONTINENCE AND ITS IMPACT ON QUALITY OF LIFE IN A COHORT OF INDIVIDUALS WITH PROGRESSIVE MULTIPLE SCLEROSIS

Hypothesis / aims of study
Bladder and bowel problems are commonly reported among individuals with Multiple Sclerosis (MS). Urinary incontinence (UI) affects between 19 and 80% of individuals with MS dependent on the definition and measurement methods used (1). Less is known about anal incontinence (AI, incontinence of flatus, liquid or solid stool) with reported prevalence ranging between 30% and 50% (2). These symptoms often occur together but very little is known about the prevalence and impact on quality of life (QoL) (3). The purpose of this study was to determine the prevalence of UI and AI in isolation and combination, and their impact on everyday life for the Progressive MS community experiencing continence difficulties.

Study design, materials and methods
Patients with a diagnosis of primary or secondary progressive MS and self-reported UI and/or AI were recruited to a Research Ethics Committee approved cross-sectional prospective survey study through eight neurology centres in the UK and national MS Society website advertisement, between June 2014 and December 2015. Validated self-report questionnaires were administered by post to consenting participants to provide evaluation of the characteristics indicated in Table 1. Stata 9.0 was used to conduct descriptive statistical analyses. 'Frequent' occurrence of events was defined as question responses, 'Daily', 'Often' to 'All of the time'. 'High' impact on quality of life was defined as the question response, 'A lot'.

Results
200 patients, 153 females and 47 males, (mean age 57 years, range 19 – 82 years) participated. The minimum completion rate for each question was 87.0%, excluding the sexual matters questions (80.9-95.7%). EQ-5D-3L and FAMS data indicated a broad sample in terms of health state.

Table 1: Questionnaires used to evaluate the population characteristics

Self-report questionnaire	Area of evaluation	Possible score range	Mean (SD)	Observed Range
ICIQ-UI SF*	UI symptoms	0-21	10.6 (5.4)	0-21
ICIQ-B*	AI symptoms and impact on QoL	Bowel pattern 1-18 Bowel control 0-28 QoL 0-26	5.0 (2.5) 10.4 (7.2) 11.4 (8.0)	1-18 0-28 0-26
FAMS	Functional assessment of MS	0-176	86 (29.5)	25-165
ICIQ-LUTSqol*	Impact on QoL from UI	19-86	54.3 (14.4)	24-85
ICIQ-FLUTSsex* ICIQ-MLUTSsex*	Gender specific sexual matters	0-14 0-12	5.5 (3.8) 4.9 (2.7)	0-13 0-10
EQ-5D-3L	Generic profile of health status	0-100	51.4 (20.3)	8-95

*Questionnaires from the International Consultation on Incontinence Modular Questionnaire.

Overall incontinence rates and the impact of incontinence were evaluated (Table 2).

Table 2 Reported levels of incontinence by type

Type of incontinence	n (%)	'High' Impact on QoL	n (%)
Any UI	184 (92.0)	Physical activity (UI)	59 (33.9)
Any AI	193 (96.5)	Travel restrictions (UI)	57 (30.8)
Faecal Incontinence (FI - flatus excluded)	157 (78.5)	Toilet location (AI)	85 (43.8)
Isolated UI	6 (3.0)	Embarrassment (AI)	41 (21.0)
Isolated AI	16 (8.0)		
UI and AI combined	162 (81.0)		
UI and FI combined	128 (64.0)		

Of the 69.2% that were sexually active a higher proportion of males than females reported 'high' impact on their sexual activities caused by UI (females 20.2%; males 45.5%) and approximately equal proportions reported restriction caused by AI (females 2.1%; males 1.5%).

Prevalence of each type of incontinence was explored further (Figure 1), which highlighted that 52.9% of the study population experienced 'frequent' difficulty with urine leakage and 65.0% with flatus control. 'Frequent' incontinence of liquid (42.4%) and solid stool (31.4%) were less prevalent. Reported levels of incontinence of each type were similar for both males and females (Figure 2). Urgency incontinence was reported as the most common type of both UI (66.0%) and AI (64.4%). Stress UI was reported by 31.0% of the population.

Figures 1 and 2 Frequency and gender distribution of types of incontinence

Figure 1

Figure 2
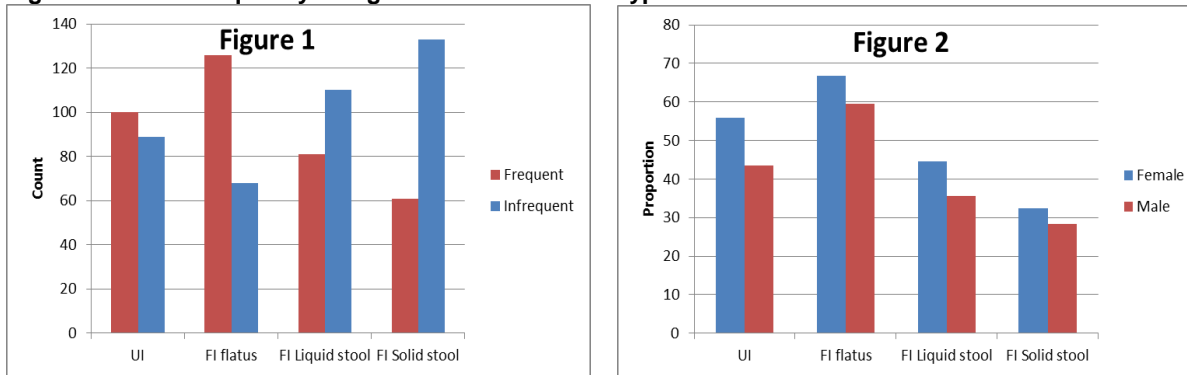
There was no evidence of correlation between the FAMS score and incontinence scores. UI scores were categorised demonstrating moderate (47.1%) and severe (34.3%) incontinence were reported most frequently (Table 3). Chi-squared analysis identified that increasing severity of UI was associated with more 'frequent' occurrence of each type of bowel incontinence (Table 4).

Table 3 UI categories of severity

UI Severity	n (%)
Slight UI	20 (11.6)
Moderate UI	81 (47.1)
Severe UI	59 (34.3)
Very severe	12 (6.7)

Table 4 Pearson χ^2 exact p-values for tests of association of UI severity with FI

UI Severity			
Present		**Frequent**	
Flatus AI	0.202	Flatus AI	0.042
Liquid FI	0.506	Liquid FI	<0.001
Solid FI	0.158	Solid FI	<0.001

Interpretation of results

The study population represented a broad health spectrum of individuals with primary or secondary progressive MS. The results suggest higher levels of AI than UI. Flatus incontinence occurred most frequently. AI occurs commonly in conjunction with UI and rarely in isolation, and is most commonly associated with urgency. All types of incontinence affect similar proportions of males and females. Most participants experienced moderate to severe UI and increasing severity was associated with increased frequency of all types of AI. Association between severity of MS and severity of incontinence was not observed. A high impact on daily life such as toilet mapping and activity restriction was identified by a third of the population.

Concluding message

UI and AI occur commonly in combination among men and women, with primary and secondary progressive MS of varying severity. The implications for practice are that it is important to proactively ask these individuals about their symptoms as UI is seldom isolated yet many are embarrassed to divulge AI. It is suggested that if either type of incontinence is present it is likely that the other will also be present and this is not related to MS disease severity. The accurate identification and appropriate treatment of these individuals is necessary to minimise the impact on everyday life caused by incontinence.

References

1. Wyndaele JJ, Kovindha A, Madersbacher H, Radziszewski P, Ruffion A, Schurch B. 2009. Neurologic urinary and faecal incontinence. In: Abrams P, Cardozo L, Khoury S, Wein A, eds. Incontinence: Proceedings of the Fourth International Consultation on Incontinence, July 5-8, 2008, Fourth ed. 793-960.
2. Norton C, Chelvanayagam S. 2010. Bowel problems and coping strategies in people with multiple sclerosis. British Journal of Nursing. 19(4): 220-226.
3. Khan F, Pallant JF, Shea TL, Whishaw M. 2009. Multiple sclerosis: prevalence and factors impacting bladder and bowel function in an Australian community cohort. Disability and Rehabilitation. 31(19):1567-76.

Disclosures