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Prevalence of lower urinary tract symptoms in patients with fecal incontinence: an evaluation of double incontinence

Seiji Matsumoto and Tatsuya Abe*

Center for Advanced Research and Education, Asahikawa Medical University, Asahikawa, Japan
* Department of Proctology, Kunimoto Hospital, Asahikawa, Japan

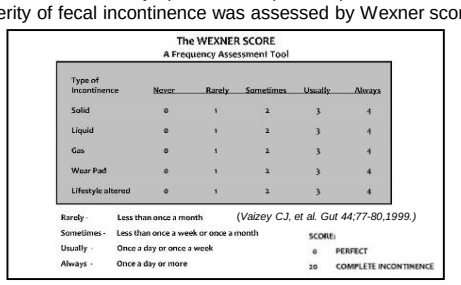
ASAHIKAWA MEDICAL UNIVERSITY
CENTER FOR ADVANCED RESEARCH AND EDUCATION
旭川医科大学

【Hypothesis / aims of study】

Incontinence, urinary and fecal, is a common health issue among elderly people. Double incontinence (DI) can be defined as the concomitant presence of urinary and fecal incontinence. To date, very few studies have investigated DI in Japan [1], and the detailed information on this condition still remains limited. There is some evidence to suggest a possible shared mechanism between urinary and anorectal symptoms [2]. Therefore, the aim of this study was to investigate the prevalence of DI through the assessment of lower urinary tract symptoms (LUTS) among patients with fecal incontinence, particularly in elderly people.

【Study design, materials and methods】

- A cross-sectional questionnaire survey
- 140 patients aged 20 years and older with a chief complaint of fecal incontinence, who visited our hospital between Sep. 2012 to Feb. 2014
- The urinary incontinence type was determined comprehensively based on the patient's response to the questionnaire and the clinical interview
- The questionnaire utilized the well validated tools to evaluate LUTS:
  - International Prostate Symptom Score (IPSS)
  - IPSS Quality of Life Score (IPSS-QOL)
  - Overactive Bladder Symptom Score (OABSS).
- The severity of fecal incontinence was assessed by Wexner score


The WEXNER SCORE
A Frequency Assessment Tool

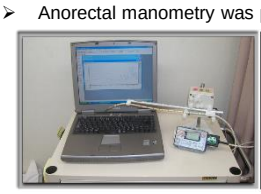
Type of Incontinence	Never	Rarely	Sometimes	Usually	Always
Solid	0	1	2	3	4
Liquid	0	1	2	3	4
Gas	0	1	2	3	4
Wear Pad	0	1	2	3	4
Lifestyle altered	0	1	2	3	4

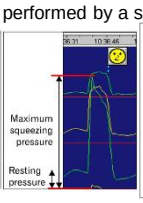
Rarely - Less than once a month
Sometimes - Less than once a week or once a month
Usually - Once a day or once a week
Always - Once a day or more

(Vaizey CJ, et al. Gut 44;77-80,1999.)

SCORE:
0 PERFECT
20 COMPLETE INCONTINENCE

- Anorectal manometry was performed by a single experienced examiner





A 5 mm diameter, 1-channel solid-state catheter with a microtipped transducer system (P-31, Star Medical Co., Tokyo, Japan). All subjects were examined in the left lateral position with the hips flexed to 90 degree, using a lubricated catheter [3].

  - **Maximal resting pressure (MRP)**: the difference between intrarectal pressure and the highest recorded anal sphincter pressure at rest [4]
  - **Maximum squeeze pressure (MSP)**: the difference between the intrarectal pressure and the highest pressure that is recorded at any level within the anal canal during the squeeze maneuver [4]
- This study was approved by the Asahikawa Medical University Ethical Committee (No. 1355).
- All values were expressed as the mean ± SD. Statistical analyses were performed using ANOVA. Differences were considered to be significant at a *p*-value < 0.05.

【References】

1. Nakanishi N, et al. *J Am Geriatr Soc*. 1997;45:215-9.
2. Matsumoto S, et al. *BJU Int*. 2013;111:647-52.
3. Abe T, et al. *Open Journal of Gastroenterology*. 2013;3:25-34.
4. Kim J. *J Neurogastroenterol Motil*. 2010;16:437-9.

【Results-1】

The overall mean age was 71.8 years (standard deviation; 12.0, range; 34-95). The younger group comprised of 10 males and 36 females, and the older group of 34 males and 60 females. The patient characteristics are compared with respect to sex, age, and both. **(Table 1, 2 and 3)**.

Table 1.
Male vs Female

	Male	Female	Total	*p*-value
Case (number)	44	96	140	
Age (mean, yrs.)	74.4	70.7	71.8	0.093
Type of fecal incontinence Passive / urge / mixed	32 / 4 / 8	59 / 3 / 34	91 / 7 / 42	0.136
MRP; maximal resting pressure (mean, mmHg)	50	37	41	0.001
MSP; maximal squeeze pressure (mean, mmHg)	220	133	160	<0.0001
Wexner score (mean, points)	7.7	9.6	9	0.019

Table 2.
Under vs Over 70 yrs old

	< 70 yrs old	≥ 70 yrs old	*p*-value
Case (number)	46	94	
Male / Female	10:36	34 : 60	0.084
Type of fecal incontinence Passive / urge / mixed	20 / 2 / 14	62 / 43 / 28	0.648
MRP; maximal resting pressure (mean, mmHg)	48	38	0.009
MSP; maximal squeeze pressure (mean, mmHg)	171	155	0.330
Wexner score (mean, points)	8.5	9.3	0.330

Table 3.
Under vs
Over 70 yrs old
in Male and Female

	Male			Female		
	< 70 yrs old	≥ 70 yrs old	*p*-value	< 70 yrs old	≥ 70 yrs old	*p*-value
Case (number)	10	34		36	60	
IPSS Total (mean, points)	12.1	11.9	0.955	6.8	8.0	0.492
IPSS-QOL (mean, points)	2.8	3.6	0.153	2.5	3.0	0.207
OABSS Total (mean, points)	2.0	3.6	0.028	2.4	4.7	0.00026
Urge incontinence* (number (%))	0 (0)	5 (15)	0.523	1 (3)	8 (13)	0.013
Stress incontinence* (number (%))	2 (20)	6 (18)	0.100	10 (28)	12 (20)	0.38
Mixed incontinence* (number (%))	0 (0)	4 (12)	0.559	10 (28)	20 (33)	0.57

【Results-2】

- The presence of urinary incontinence (urge, stress, or both types) was observed in 20% of males in younger group, 44% of males in older group, 58% of females in younger group, and 67% of females in older group. In total, 78 out of 140 patients (56%) were cases with DI.
- There was no significant age-dependent difference in the average scores of IPSS and IPSS-QOL in both sexes. However, the average score of OABSS was significantly higher in both sexes of older group compared to younger group. **(Table 3)**
- There was a significant positive correlation between IPSS total score and Wexner score in females (p=0.012), but not in males. (**Fig.1)**
- The frequency of moderately severe LUTS (IPSS≥8, IPSS≥4,OABSS≥6) in males had no significant age-dependent difference, whereas females in older group had significantly higher proportion of cases with OABSS of at least 6 when compared with females in younger group (35% vs. 9%; p<0.001). **(Fig. 2)**
- With respect to stress urinary incontinence, there was no significant age- and sex-dependent difference. In female, the frequency of urge urinary incontinence were significantly higher in older group than in younger group (females 13% vs. 3%; p=0.013; males 15% vs. 0%; p=0.523). (**Fig.3)**

Figure 1. Correlation between IPSS total score and Wexner score

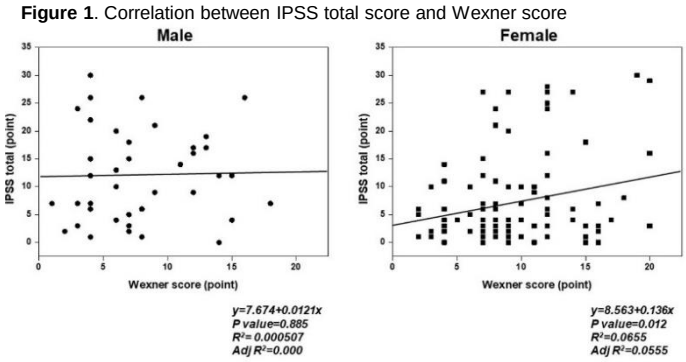


Figure 2. LUTS (IPSS/QOL/OABSS) in patients with fecal incontinence

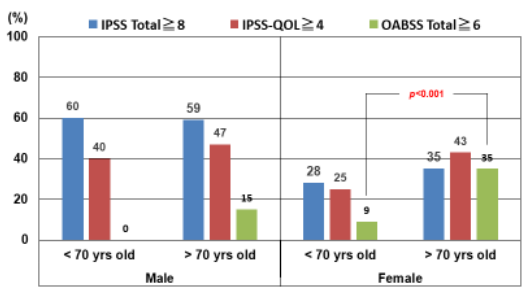
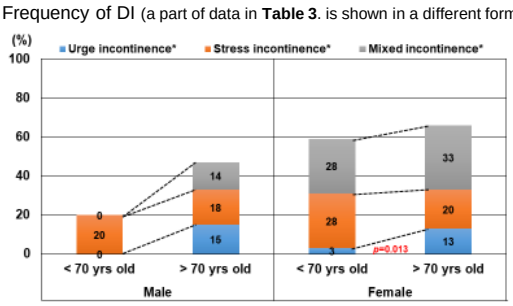


Figure 3. Frequency of DI (a part of data in **Table 3**. is shown in a different format)



【Interpretation of results】

Nearly 60% of all fecal incontinence patients seen at our hospital had DI. The older patients with fecal incontinence were more likely to have concomitant urge urinary incontinence and were more likely to have lower QOL. These suggest that the diagnosis and treatment of LUTS, especially urinary incontinence, should be considered in conjunction with fecal incontinence. The strength of the study lies in the prospective recruitment of patients, while limitations include self-reported nature of the questionnaire and a small sample size.

【Limitations and Future tasks】

- Based primarily on data obtained from a questionnaire survey.
- Degree of stress urinary incontinence remains unclear.
- Changes in LUTS from pre- to post-treatment for fecal incontinence should be investigated.

【Conclusions】

The present study revealed that more than half of the fecal incontinence cases were accompanied with urinary incontinence. The presence of fecal incontinence alone has a negative impact on patients. The concomitant condition of urinary incontinence can further reduce QOL. Our findings necessitate that practicing physicians be alert to clinical signs of LUTS when seeing patients with fecal incontinence. Early detection of DI is essential to maximize treatment for both urinary and anorectal symptoms at a manageable stage. The precise mechanism that triggers DI should also be explored in future research.

【Disclosures Statement】

The authors declare no conflicts of interest associated with this paper.