

## LOWER URINARY TRACT SYMPTOMS IN PARKINSON'S DISEASE: RESULTS OF A POPULATION-BASED SURVEY

### Aims of Study

To assess the prevalence of lower urinary tract symptoms (LUTS) in Parkinson's disease (PD) and their correlation with the degree of severity of PD.

### Methods

A questionnaire investigating the presence of LUTS was mailed to all the members of a Parkinson's Association in northern Italy. The stage of PD disease was evaluated by means of the Hoehn and Yahr (H&Y) scale of disability, considering scores 0-2.5 as moderate PD and 3-5 as severe. Severity of PD was correlated to the presence of LUTS and the use of incontinence pads or urine collecting devices. The time of onset of PD symptoms and the presence and the degree of bother (none, moderate, severe) of LUTS were specifically investigated. Regarding LUTS, the questions to be answered concerned storage symptoms (daytime frequency, nocturia, urgency, urge -UUI- and stress -SUI- urinary incontinence), voiding symptoms (hesitancy, slow stream, straining) and post-micturition symptoms (feeling of incomplete emptying) and their duration. Other questions regarded pad usage and the LUTS related drug use. A Chi-square test was used for statistical analysis and only  $p < 0.05$  was considered significant.

### Results

Three hundred and forty subjects completed the questionnaire and mailed it back (208 males and 131 females). Mean H&Y score was 2.3 (range 1-5). Mean age was 70 yrs  $\pm$  8.9 and median age 70 yrs. Table 1 shows LUTS-related data.

Findings	Frequency	Before PD	Concomitant PD	After PD
Daytime frequency (n=333)	215 (64.6%)	13/170* (7.6%)	15/170* (8.8%)	142/170* (83.6%)
Nocturia (n=330)	262 (79.4%)	24/197* (12.2%)	18/197* (9.1%)	155/197* (78.7%)
Urgency (n=329)	232 (70.5%)	10/184* (5.4%)	11/184* (6.0%)	163/184* (88.6%)
Urge urinary incontinence (n=333)	192 (57.7%)	6/143* (4.2%)	7/143* (4.9%)	130/143* (90.9%)
Stress urinary incontinence (n=332)	69 (20.8%)	2/50* (4%)	8/50* (16%)	40/50* (80%)
Hesitancy (n=328)	120 (36.6%)	2/89* (2.2%)	3/89* (3.4%)	84/89* (94.4%)
Slow stream (n=327)	156 (47.7%)	7/118* (6.0%)	9/118* (7.6%)	102/118* (86.4%)
Straining (n=327)	75 (22.9%)	2/56* (3.6%)	3/56* (5.3%)	51/56* (91.1%)
Incomplete emptying (n=332)	160 (48.2%)	3/125* (9.4%)	9/125* (7.2%)	113/125* (90.4%)
Use of pad (n=333)	126 (37.8%)	-	-	-

Table 1. Frequency of each LUTS and use of pads respectively overall, before, concomitantly and after the onset of PD.

\* n° of pts that answered questions on time of onset for each symptom.

Overall, at least one storage symptom was reported by 314/340 (92.4%) respondents, as well as voiding and post micturition symptoms by 242/340 (71.2%) subjects. Table 2 summarizes the degree of bother associated with each LUTS and with the use of pads.

LUTS and pad	No bother	Moderate bother	Severe bother
Increase daytime frequency (n=212)	25 (11.8%)	87 (41%)	100 (47.2%)
Nocturia (n=256)	36 (14.1%)	115 (44.9%)	105 (41%)
Urgency (n=227)	9 (4%)	88 (38.8%)	130 (57.3%)
Urge urinary incontinence (n=184)	5 (2.7%)	52 (28.3%)	127 (69%)
Stress urinary incontinence (n=63)	5 (7.9%)	22 (34.9%)	36 (57.2%)
Hesitancy (n=115)	13 (11.3%)	64 (55.7%)	38 (33%)
Slow stream (n=141)	28 (19.9%)	81 (57.4%)	32 (22.7%)
Straining (n=71)	6 (8.5%)	40 (56.3%)	25 (35.2%)
Incomplete emptying (n=145)	16 (11%)	86 (59.3%)	43 (29.7%)
Use of pad (n=116)	14 (12.1%)	37 (31.9%)	65 (56%)

Table 2.: degree of bother due to each LUTS and to pad usage.

The 82.4% of the subjects had reported their LUTS to one or more physicians: to the urologist in 113 cases, a neurologist in 91, a general practitioner in 104 and a gynaecologist 18. Moreover, 79/340 (23.2%) subjects were on medical therapy for their LUTS (or had been treated in the past), 40 with alfa-blockers and 25 with anticholinergic drugs.

As expected, a significant statistic correlation was found between a greater PD severity and the presence of LUTS. In particular, a positive correlation was found with urgency ( $p=0.004$ ), UUI ( $p=0.006$ ), hesitancy ( $p=0.001$ ), straining ( $p=0.000$ ), and incomplete emptying ( $p=0.002$ ). A positive correlation was also found with the use of pads ( $p=0.000$ ).

### **Conclusions**

This study showed a much higher prevalence of LUTS in patients affected by PD compared to that reported in literature (1). In fact, nearly all the subjects complained of storage symptoms (92.4%) and many more of voiding and post micturition symptoms (71.2%). Symptoms of overactive bladder were found in more than 70% of cases and UUI in more than 57%. Moreover, LUTS presented after the onset of the PD specific neurological symptoms in most of the subjects. UUI is the most bothersome symptom followed by urgency and SUI. Pad usage is also quite frequent (38%) and very troublesome. LUTS and pad use increase progressively in the more advanced stages of PD (stage  $\geq 3$  H&Y), in particular the main symptoms of overactive bladder -UUI, urgency- which are also the most bothersome. A striking finding is the low rate of medical treatment of LUTS compared to the high frequency and bother of LUTS. The latter evidence underlines the urgent need for more attentive urological care and greater cooperation among the various specialists and with the general practitioners.

### **References**

1. Hattori T., Yasuda K., Kita K., Hirayama K.: Voiding dysfunction in Parkinson's disease. *Jpn Psychiatry Neurol*, 1992; 46(1): 181-186