

URINARY SYMPTOMS AND ASSOCIATED FACTORS IN PARKINSON'S DISEASE

Hypothesis / aims of study

Urinary dysfunction, primarily in the form of detrusor overactivity (DO), are highly prevalent in patients with idiopathic Parkinson's disease (IPD). Lower urinary tract symptoms (LUTS) usually become more pronounced in PD due to the bradykinesia, thus leading to a decrease in patient's quality of life (QoL). Aim of the study was to analyze the prevalence of LUTS and their impact on QoL in patients with IPD. We analyzed the possible association between these symptoms and patients' age, disease duration and severity, non-motor symptoms such as depression and cognitive involvement. In addition, we aimed to investigate whether LUTS differ among clinical subtypes of PD.

Study design, materials and methods

Thirty IPD patients have been investigated using the unified Parkinson's disease rating scale (UPDRS) motor section part III and Hoehn-Yahr (H&Y) scale to assess motor symptoms and the stage of disease severity. Cognitive function was assessed using Mini Mental State examination (MMSE) and Montreal Cognitive Assessment (MOCA). Patients were divided into tremor-dominant type (TDT), akinetic-rigid type (ART), and mixed type (MXT) PD subgroups using part III of the Unified Parkinson's Disease Rating Scale. Urinary symptoms have been investigated in by 3- day voiding diary, uroflowmetry and standardized questionnaires "Incontinence Quality of Life" (I-QoL); psychological status by "Hamilton Anxiety Scale" (HAM-A) and "Hamilton Depression Scale" (HAM-D).

Results

21 men and 9 women were enrolled; mean age was 66.6 ± 10.1 years. Mean \pm SD values of H&Y and UPDRS stage was 2.4 ± 0.7 and 23.5 ± 4.6 respectively. All patients were affected by urinary symptoms: 24 patients had increased day-time and night-time urinary frequency, respectively; 27 complained of urinary urgency. The increase in age, disease duration and H&Y stage were significantly related with reduction in HAM-A (mean \pm SD: 16.3 ± 5.8 ; $p < 0.002$); incontinence was significantly associated with increased H&Y stage ($p < 0.005$) and also post-void residual volume was related with an increase in HAM-D ($p < 0.005$). The I-QoL scores (mean \pm SD: 62.4 ± 26.2) were significantly associated with the MMSE scores (mean \pm SD: 2.4 ± 0.7 ; $p < 0.01$). Nicturia was correlated positively with the UPDRS scores (mean \pm SD: 30.5 ± 13 ; $p < 0.003$). The UPDRS and H&Y scores related with the MMSE and MOCA scores. We did not show significant differences between the three clinical subtypes of PD patients.

Interpretation of results

There are few studies correlating PD clinical aspects with this autonomic feature. Some researchers have observed that 93% of urinary symptoms correlates with the extent of motor symptoms. This high rate could be attributed also to other associated factors such as age, sex or grade of disability of the population examined. In fact many of these patients are elderly, females and with reduced level of independence. In these cases neurologic deficits and functional disability more easily impair the function of bladder, urethral sphincter and pelvic floor.

Concluding message

Our findings suggest that the presence of LUTS correlated with the severity of motor impairment and non-motor symptoms. To our knowledge, this study is one of the few showing a positive correlation between urinary incontinence with the cognitive involvement possibly reflecting the known role of the decline in nigrostriatal dopaminergic function.

References

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Disclosures

Funding: No funding **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** CEAS Italy (Umbria) **Helsinki:** Yes **Informed Consent:** Yes