

BLADDER SYMPTOMS IN PARKINSON'S DISEASE: A STUDY WITH THE OVERACTIVE BLADDER QUESTIONNAIRE IN A LARGE COHORT OF PATIENTS.

Hypothesis / aims of study

Urinary disorders frequently affect Parkinson's disease (PD) patients. These symptoms are expression of overactive bladder (OAB) as the consequence of neurogenic detrusor overactivity (NDO). Subjects experiencing OAB present a severe deterioration of quality of life; this aspect has determined a strong increase of interest and research on this argument to better understand pathophysiology of NDO and develop more efficient therapies. The decline of nigrostriatal dopaminergic function has been proposed as the cause of OAB in PD by several studies. Aim of this investigation was to correlate urinary and neurologic symptoms in PD patients to achieve a clinical evidence of this hypothesis.

Study design, materials and methods

303 PD patients have been enrolled; urinary symptoms were assessed by the OAB questionnaire (OAB-q), a condition specific measure designed to evaluate OAB symptoms impact on health-related quality of life. Possible correlation between urinary scores and sex, age, Unified Parkinson's Disease Rating Scale (UPDRS III motor section), disease duration and treatment were evaluated. Data were compared with those obtained from the same number of case controls.

Results

The results show that OAB-q scores are significantly higher in PD patients and that they strongly correlate with the UPDRS III, not with age, disease duration and drug therapy. OAB-q scores resulted significantly higher in PD patients than in controls and there was a significant correlation, at the multivariate analysis, between OAB-q median values with disease severity. No correlation resulted with age, sex, disease onset and drug therapy. The first statistical analysis showed a significant correlation between the OAB-scores, the UPDRS III, disease duration and age in the PD group. The r-values in the Pearson's correlation could be influenced by the large cohort of patients considered, but the bivariate analysis and multivariate logistic regression allowed to report that the OAB-q scores significantly correlate only with the UPDRS III.

Interpretation of results

The relevant pathogenetic role of bladder symptoms in PD patients has been attributed to the loss of cortical inputs from the basal ganglia, even if some evidence supports the involvement of cortical and sub-cortical integrated circuits alterations. The results of the present study would stress this etiopathogenetic aspect. These data mean that urinary symptoms are not related to age and disease duration but only to motor dysfunction severity. These evidences agree with experimental outcomes coming from Literature: Sakakibara et al reported that PD with bladder symptoms had a reduced striatum uptake of 2-carbomethoxy-3-(4-iodophenyl)-tropane, suggesting a correlation between the nigrostriatal dopaminergic cell degeneration and urinary disorders [1]; furthermore, Winge and colleagues related bladder symptoms and their severity to the decrease of striatum-dopaminergic neurons and the caudate relative degeneration [2]. Particularly in consideration of these experimental data, the analysis of the correlation between drug therapy and questionnaire's outcomes appears of great interest. In this investigation no correlations between OAB-q scores and drug/therapy of L-Dopa were found. The large patient cohort considered in this study allows to confirm the relevance of urinary disorders in PD subjects and their severe impact on quality of life. The results collected confirm the high reliability of OAB-q in the evaluation of bladder symptoms in PD.

Concluding message

The Authors conclude that urinary symptoms, assessed by the OAB-q, correlate with motor dysfunction investigated by the UPDRS III. This evidence suggests a significant role of the nigrostriatal dopaminergic function decline on the bladder function of PD patients. Moreover this study confirms data reported in Literature about the OAB-q reliability in this condition.

References

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2. Winge K, Friberg L, Werdelin L, Nielsen KK, Stimpel H. Relationship between nigrostriatal dopaminergic degeneration, urinary symptoms, and bladder control in Parkinson's disease. *Eur J Neurol* 2005;12:842-850

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Was informed consent obtained from the patients?	Yes