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LOWER URINARY TRACT DYSFUNCTION PRECEDE THE CLASSICAL MOTOR SYMPTOMS OF PARKINSON'S DISEASE?

Hypothesis / aims of study

There is growing evidence that some symptoms can precede the classical motor features of Parkinson's disease. Premotor symptoms in Parkinson's disease include constipation, loss of smell, sleep disturbances such as daytime sleepiness and REM sleep behaviour disorder (RBD), and mood disturbances like depression. As autonomic dysfunction, lower urinary tract dysfunction (LUTD) in Parkinson's disease is also a well-known non-motor feature. A recent report of one case with long standing lower urinary tract dysfunction (LUTD) and orthostatic hypotension diagnosed as pure autonomic failure (PAF) but evolving into Parkinson's disease later on, suggest that lower urinary tract dysfunction (LUTD) may occasionally precede motor symptoms of Parkinson's disease. However the preceding symptom and duration of lower urinary tract dysfunction (LUTD) were not investigated in detail. Therefore, we investigate whether lower urinary tract dysfunction (LUTD) precede the classical motor symptoms of Parkinson's disease, and the duration of a prodromal phase.

Study design, materials and methods

Forty-nine de-novo Parkinson's disease patients were recruited (mean age, 68 years; male 31, female 18). We questioned the existence and duration of their lower urinary tract and classical motor symptoms (parkinsonism). The questionnaire for lower urinary tract dysfunction (LUTD) concerned the storage symptoms such as daytime frequency (eight or more times to void), nocturia (two or more times to void), urinary urgency and urge urinary incontinence, and the voiding symptoms such as hesitancy, slow stream, intermittent stream, straining and feeling of incomplete emptying.

Results

Forty-three patients out of 49 (88%) complained of lower urinary tract symptoms (LUTS) (daytime frequency, 17 (35%); nocturia, 19 (39%); urinary urgency 18 (37%)). These incidence rates were significantly higher than the previous similar studied rates in healthy subjects (daytime frequency, 0%; nocturia, 6%; urinary urgency, 18%). Their initial symptoms were daytime frequency (n = 8, 19%), nocturia (n = 14, 33%), urinary urgency (n = 6, 14%), daytime frequency + urinary urgency (n = 9, 21%), nocturia + urinary urgency (n = 3, 7%), and nocturia + voiding difficulty (n = 2 (hesitancy 1, slow stream 1), 5%). One (1%) had nocturia long time before, and which was considered not to be related with Parkinson's disease. In 15 patients out of 49 (31%), onset of lower urinary tract symptoms (LUTS) preceded classical motor symptoms by an average time of 35 months (6 - 120 months). Their preceding symptoms were daytime frequency (n = 2, 13%), nocturia (n = 7, 47%), urinary urgency (n = 3, 20%), daytime frequency + urinary urgency (n = 2, 13%), and nocturia + voiding difficulty (n = 1, 7%).

Interpretation of results

Lower urinary tract symptoms (LUTS) preceded the classical motor symptoms of Parkinson's disease. Nocturia, one of the storage symptoms, was the most frequent preceding symptom. In addition, voiding symptom along with the storage symptom was possible to be preceding symptom.

Concluding message

Lower urinary tract dysfunction (LUTD) may precede the motor disturbances of Parkinson's disease, and which, in particular storage symptoms, may be one of symptom of prodromal phase in Parkinson's disease. These findings might reflect particular brain pathology relevant to the lower urinary tract function which precedes nigrostriatal degeneration.

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<i>Was the Declaration of Helsinki followed?</i>	Yes
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