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AMANTADINE CAN IMPROVE NOT ONLY LOWER URINARY TRACT DYSFUNCTIONS BUT ALSO NOCTURNAL POLYURIA IN PARKINSON'S DISEASE.

Hypothesis / aims of study

Amantadine is a drug of choice in patients with neurological disease such as Parkinson disease (PD) and after effect of stroke in Japan.

In patients with these neurological diseases, lower urinary tract dysfunction is common.

Additionally, we report that nocturnal polyuria occur and is a cause of night-time frequency in the patients with PD and stroke.

Recently, amantadine is used for not only motor symptom but also various symptoms such as depressive state, dyskinegia as complication following long-term anti-parkinsonian medication and pathological gambling.

In clinical experience, amantadine ameliorated storage symptoms such as urgency and urinary frequency in PD patients.

However, there are few reports to evaluate the effect of amantadine on lower urinary tract symptoms and no reports to evaluate the effect of nocturnal polyuria in PD patients.

We therefore investigate the effect of amantadine on lower urinary tract symptoms and nocturnal polyuria in PD patients.

Study design, materials and methods

Twelve PD patients with lower urinary tract symptom were recruited. We performed detailed urinary questionnaire and 2-3 days frequency volume chart / bladder diary before and one month after taking daily 150 mg amantadine. In addition, one month after taking daily 300mg amantadine, we repeated the questionnaire and the chart / diary. Mean number of day-time frequency, night-time frequency, urinary urgency episode per week, and urge incontinence per month, mean urine volume per void (including daytime urine volume and night-time urine volume), and residual urine volume by echography were measured. We also observed nocturnal polyuria and any side effect, or changes of neurological and mental manifestations.

Results

Before amantadine administration, mean number of daytime frequency ± standard error was 9.6 ± 0.9, night-time frequency 2.6 ± 0.5, urinary urgency per week 24.3 ± 13.5, urge incontinence per month 6.7 ± 3.8, urine volume per void 135.1 ± 16.8 ml (daytime urine volume per void 128.8 ± 13.2 ml, night-time urine volume per void 185.4 ± 28.2 ml), and residual urine volume 17.2 ± 10.1 ml. And 8 patients had nocturnal polyuria. After daily 150 mg amantadine administration, lower urinary tract dysfunctions improved; mean number of daytime frequency (7.1 ± 0.5), night-time frequency (1.6 ± 0.4), urinary urgency per week (9.23 ± 3.3), urge incontinence per month (5.7 ± 4.1), urine volume per void (155.8 ± 14.9 ml), daytime urine volume per void (148.4 ± 14.7 ml), night-time urine volume per void (181.2 ± 22.9 ml), and residual urine volume (10.1 ± 5.8 ml). And nocturnal polyuria was ameliorated in 4 patients with it. No patient had side effect. Further 1 month after taking daily 300mg amantadine, lower urinary tract dysfunctions more improved including mean number of daytime frequency (6.9 ± 0.7), night-time frequency (1.7 ± 0.3), urinary urgency per week (1.2 ± 0.8), urge incontinence per month (5.2 ± 3.6), urine volume per void (179.5 ± 28.5 ml), daytime urine volume per void (165.4 ± 27.3 ml) and night-time urine volume per void (204.4 ± 37.3 ml)], and residual urine volume (10.0 ±4.5 ml). And nocturnal polyuria was ameliorated in another one patient with it. However, 1 patients developed exacerbation of hallucination and 2 patients developed slight flashing sensation.

Interpretation of results

In patients with PD, amantadine lessened overactive bladder, increased urine volume per void (daytime and nighttime), lessened residual urine volume, and improved nocturnal polyuria.

Concluding message

Amantadine has benefical effect on not only lower urinary tract dysfunction, particularly in storage disorder but also nocturnal polyuria in PD patients. Amantadine can become a useful alternative for lower urinary tract dysfunction and nocturnal polyuria in PD patients, as well as for motor dysfunction.

Disclosures

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