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UROLOGICAL SYMPTOMS WERE NOT RARE IN PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS

Hypothesis / aims of study

Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disorders involving both upper and lower motor neurons. Patients with ALS would inevitably lose all somatic nerve function, but autonomic nerve function is relatively preserved. Clinically we observed that these patients might have variable lower urinary tract symptoms, which hasn't been reported in the medical literature. Therefore, we conducted a retrospective observational study to investigate the prevalence of urinary symptoms in one of the largest ALS referral centers in Taiwan.

Study design, materials and methods

We retrospectively reviewed patients with ALS in our institute from January 1st 2014 to March 15th 2016. Those with urinary symptoms that needed referral to an urologist were included. Age, sex, comorbidities, initial presentation and duration of ALS, muscle power of lower extremities, and urinalysis at the time of referral were obtained from chart review or telephone interview. These data were analyzed with descriptive statistics. Fisher's exact test and Mann-Whitney U test were used to compare possible associated factors between ALS patients with urinary retention and those without. P value less than 0.05 was viewed as statistical significance.

Results

Sixteen patients have been included, accounting for 12.4% of all ALS patients in our institute during the study period. Twelve were males (75%) and four were females (25%). Median age at referral was 61 (39 – 79) years of age. Median duration of ALS was 5 (0.5 – 29) years. Three (18.8%) patients had type 2 diabetes, and 15 (93.8%) patients needed respiratory support. Five (41.7%) patients presented initially with dysarthria, while seven (58.3%) patients were diagnosed with ALS due to weakness of extremities. Ten (62.5%) patients had residual muscle power at the time of urological referral (Table 1).

Interpretation of results

Refractory lower urinary tract symptoms were the main chief complaints, including voiding symptom predominance in six (37.5%), storage symptom predominance in four (25.0%), and dysuria in six patients (37.5%). Pyuria was only presented in two patients with dysuria. Nine (56.3%) patients were diagnosed with urinary retention after evaluation by urologists. Median postvoid residual urine amount was 820 (550 – 2100) ml. Factors including age, sex, disease duration, residual muscle power, or initial presentations were failed to show association with the development of urinary retention in patients with ALS. (Table 2)

Concluding message

Urinary symptoms, including voiding and storage symptoms, as well as dysuria were not rare in patients with ALS. Urinary retention was the most common urological conditions, but associated factors were failed to be identified in the present study. A prospective study recruiting more patients and completion of urodynamic study would be helpful to predict the development of urinary retention in patients with ALS.

Table 1 Demographic data of ALS patients with urinary symptoms

Parameters	Median (min – max) or Numbers (%)
Age (years)	61 (39 – 79)
Sex	
Female	4 (25%)
Male	12 (75%)
Type 2 diabetes	3 (18.8%)
ALS disease duration	5 (0.5 – 29)
Initial ALS symptoms	
Dysarthria	5 (31.2%)
Weakness of extremities	7 (43.7%)
Residual muscle power	
0	6 (37.5%)
1	6 (37.5%)
2	4 (25.0%)
Respiratory support	

No	1 (6.25%)
BiPAP	6 (37.5%)
Tracheostomy + Ventilator	9 (56.3%)
Urinary symptoms	
Voiding symptoms predominance	6 (37.5%)
Storage symptoms predominance	4 (25.0%)
Dysuria	6 (37.5%)
Hematuria	2 (12.5%)
Suspicious warts growth	1 (6.25%)
Pyuria on urinalysis	6 (37.5%)
Urinary retention	9 (56.3%)
Postvoid residual urine (ml)	820 (550 – 2100)

Table 2. Associated factors of urinary retention in patients with ALS

Urinary retention	Yes	No	P value
Age≧50	3	1	0.5846
Male patients	6	6	0.5846
Respiratory support	8	7	1.0000
Type 2 diabetes	1	2	0.5500
No residual muscle power	4	2	0.6329
ALS disease duration	6.6 ± 4.6	7.6 ± 10.0	0.8124
Dysarthria as initial ALS symptoms	4	1	0.2929
Voiding symptoms predominance	5	1	0.1451
Storage symptoms predominance	1	3	0.2615
Dysuria	3	3	1.0000
Pyuria	5	1	0.1451

Disclosures
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