

URODYNAMIC EVALUATION IN HTLV-1 PATIENTS WITH AND WITHOUT TROPICAL SPASTIC PARAPARESIS / HTLV-1 ASSOCIATED MIELOPATHY

Hypothesis / aims of study

HTLV-1 is a retrovirus that is associated with a large group of diseases, including tropical spastic paraparesis and HTLV-1 associated myelopathy (TSP / HAM). The affected patients often have urinary manifestations of this infection, but few information is known about the urodynamic findings in this group, because there is no studies gathering a considerable number of patients.

Study design, materials and methods

Forty-eight patients were included in this study. Seventeen were male (37.5%), and 31 were female (62.5%). Age ranged from 13 to 69 years (mean=44.66 years; SD=9.91; median=45 years). All patients had screening ELISA and confirmatory CSF and serum Western Blot positive laboratory diagnosis. An informed consent were obtained for all patients.

We performed a conventional urodynamic study including uroflow testing, cystometry with simultaneous abdominal, vesical and detrusor pressure recording, eletromyography (EMG) and leak point pressure determination. All patients were also evaluated by a multidisciplinary team including an urologist, neurologist and physical therapist. All data concerning urinary and neurologic manifestations of the disease were tabulated.

The urodynamic study was performed under standard International Continence Society (ICS) rules using a computerized system by "Polimed, Viotti and associados" (*Urosystem DS-5600*, Sao Paulo, Brazil). All patients received prophylactic antibiotics before the examination. A 4 Fr plastic urethral catheter were used for pressure recording and a 6 Fr catheter were used for infusion under standard conditions. For EMG recording transcutaneous electrodes were employed. Uroflow testing data were plotted in Liverpool nomograms.

Statistical analysis was made using Pearson's Chi-square test or Fisher exact test. The statistical software used was SPSS (SPSS Inc., Chicago, Illinois) and the data was stored in dBASE format.

Results

TSP / HAM was observed in 26 (54.2%) patients. Twenty-two (45.8%) patients were infected by HTLV-1, without presenting all the criteria necessary to be declared (TSP / HAM). Of these patients, 86.18 % were asymptomatic or oligosymptomatic, and 31.82% presented void urgency or urge incontinence.

Among TSP / HAM patients, 100% presented urinary symptoms; 4 (15.38%) presented normal cystometry, 21 (80.76%) had neurogenic detrusor overactivity and % (3.84%) had detrusor underactivity. We observed that 34.61% of TSP / HAM patients presented detrusor overactivity with associated detrusor sphincter dyssinergia

Among non-TSP / HAM patients, 14 (63.63%) had normal cystometry, 5 (22.72%) had detrusor overactivity and 3 (13.63%) had detrusor underactivity. Detrusor sphincter dyssinergia was not observed in this group.

Presence of detrusor overactivity in TSP / HAM subjects was significantly greater than in patients without myelopathy ($p=0.0001$). Detrusor sphincter dyssinergia observed in TSP / HAM subjects was not detected in non-TSP / HAM patients, and this difference was significative ($p=0.0022$).

Uroflow testing in the TSP / HAM group was normal in 4 patients (17.4%) and abnormal in 19 (82.6%). Three patients were excluded for which assessment was not possible. In the non-TSP / HAM group, 14 (70%) had normal uroflow rates and for 2 cases the assessment was not possible too. There was a statistically significance difference among these patients ($p=0.0005$)

Interpretation of results

The population in this study reflects the female preponderance previously reported in the literature. The urodynamic findings in the TSP / HAM subjects were more frequent and severe than in the non-TSH / HAM group, probable reflecting a more intense damage in the pathways and centers responsible for the micturition control. However, some patients may present with an underactive detrusor, generally associated with a more peripheral involvement by the disease. Detrusor dyssinergia were not observed in the non-TSP / HAM group.

A variable penetrance of the disease is also demonstrated by 15.38% normal cystometry in the TSP / HAM group, i.e., patients with great neurological impairment due to the disease, and gait disturbances, may present a normal pattern of vesical behaviour. The urological manifestations can also precede the neurologic findings, as had been demonstrated previously in the literature. Uroflow testing are in accordance with neurological and urodynamic findings.

Concluding message

The present work confirms that HTLV-1 infection is a disease with a wide spectrum of neurologic and urologic manifestations. In urodynamic testing, both TSP / HAM and non-TSP / HAM subjects present detrusor overactivity as the major finding. However, other alterations were also observed, indicating that this is a complex disease, deserving attention of specialists regarding possible upper urinary tract consequences.