

# Clinical course of neurogenic bladder dysfunction in human T-cell leukemia virus type-1-associated myelopathy: A nationwide registry study in Japan

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## Background:

Most patients with human T-cell leukemia virus type 1-associated myelopathy (HAM) develop neurogenic bladder dysfunction. However, longitudinal changes and treatment effects remain poorly understood. This study aimed to characterize the clinical course of urinary dysfunction and actual treatment using real-world data.

## Methods:

This prospective observational study included 547 patients enrolled in HAM-net, a nationwide registry for HAM in Japan. The symptom and severity of bladder dysfunction evaluated using HAM-bladder dysfunction symptom score (HAM-BDSS) and HAM-bladder dysfunction severity grade (HAM-BDSG), respectively. We analyzed longitudinal changes over a 6-year follow-up period, associations between urinary and gait dysfunction, and treatment efficacy of urinary catheterization and mirabegron (a  $\beta_3$ -adrenergic agonist).

## Results:

The mean (standard deviation [SD]) age and disease duration at enrollment were 61.9 (10.7) years and 16.6 (11.6) years, respectively. Only 8.0% were free from urinary symptoms (HAM-BDSG 0), 65.4% had urinary symptoms or were on medication (HAM-BDSG I), and 23.2% and 3.3% used intermittent and indwelling catheters (HAM-BDSG II and III), respectively. HAM-BDSG and BDSS were worse in patients with greater gait dysfunction ( $p < 0.001$  for both). During the 6-year follow-up, 66.7% of patients with HAM-BDSG 0 developed new urinary symptoms. Of those with HAM-BDSG I at enrollment, 10.8% started using urinary catheters. Importantly, HAM-BDSS significantly improved after initiating catheterization ( $p < 0.001$ ). The number of patients receiving mirabegron increased in the fourth year. Multivariable linear regression analysis demonstrated the association of mirabegron with improvement in HAM-BDSS ( $p = 0.001$ ).

## Conclusion:

Urinary symptoms were more severe in patients with poorer gait function. Urinary catheterization and mirabegron were effective in relieving symptoms.

## Disclosure of Interest Statement:

None.