LETTER

Isolated bladder dysfunction in human T lymphotropic virus type 1 infection: 10 years of follow-up

Dear Editor,

Human T lymphotropic virus type 1 (HTLV-1) is the aetiological agent of HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM/TSP), a neurological disease characterised by a slowly progressive paraparesis and bladder dysfunction. Most HTLV-1-infected individuals remain asymptomatic throughout their lives, and the factors that play a role to conversion from asymptomatic to symptomatic status are still a matter of discussion. It is believed that <1% of HTLV-1-infected individuals will develop HAM/TSP. Host genetic factors and the immunological response against HTLV-1 are pivotal to HTLV-1 proviral load (PVL), and there are evidences that a high PVL is associated with HAM/TSP and with other HTLV-1-associated diseases such as peripheral neuropathy and amyotrophic lateral sclerosis. In addition, some aspects of clinical features in HAM/TSP could be determined by the mode of HTLV-1 transmission and age of onset.

In the past, we published on a cohort of HTLV-1-infected individuals with conditions other than HAM/TSP. We demonstrated that the PVL was higher in these cases when compared with asymptomatic carriers being more alike to that found in patients with HAM/TSP. Now, 10 years later, we describe the follow-up of 10 HTLV-1-infected individuals with isolated bladder dysfunction (IBD).

During that period, patients with IBD were followed at regular outpatient visits every 3–6 months. HTLV-1 PVL was determined at least once a year and was performed as previously described. Of the original cohort, one patient died due to myocardial infarction. The remaining nine patients with IBD were followed for 10 years (table 1). During this time, two patients developed HAM/TSP: patient number 19 428 fulfilled the HAM/TSP diagnostic criteria 81 months after the onset of her bladder dysfunction. The same happened to patient number 17 045, 97 months later. The other seven patients remained free of neurological symptoms/signals until now. Patient number 17 045 progressed slowly to HAM/TSP, being able to walk without assistance. Otherwise, patient number 19 428 progressed rapidly to HAM/TSP. She underwent intravenous methylprednisolone (1 g/day) treatment for five consecutive days followed by 1 g once a month for 4 months. Currently, she is able to walk with unilateral assistance. Although we observed a decrease in HTLV-1 PVL after corticosteroid therapy in patient number 19 428, we could not affirm that this was a drug effect. A significant fluctuation in PVL has been observed in other patients and this was not correlated with worsening or improvement in their clinical state (figure 1). PVL is usually stable over time within a certain level of fluctuation. It is still unknown if the magnitude of such PVL fluctuations over time has any importance in the process of conversion from an asymptomatic to a symptomatic status.

In summary, we emphasise that HTLV-1-infected individuals with IBD should be carefully followed up since they usually have a higher PVL and can develop HAM/TSP in the future.

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Figure 1 HTLV-1 proviral load from isolated bladder dysfunction patients during a follow-up of 10 years. HAM/TSP onset time for patients 17 045 and 19 428 is indicated by a black and white arrow, respectively. HAM/TSP, HTLV-1 associated myelopathy/tropical spastic paraparesis.

Table 1 Characteristics of patients with isolated neurogenic bladder dysfunction associated with human T lymphotropic virus type 1 (HTLV-1)

<table>
<thead>
<tr>
<th>Patient number</th>
<th>Sex</th>
<th>Age 1</th>
<th>PVL 2</th>
<th>Transmission</th>
<th>Urodynamic study</th>
<th>Onset age HTLV-1 3</th>
<th>Onset age IBD 4</th>
<th>Onset age HAM/TSP 5</th>
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</thead>
<tbody>
<tr>
<td>13 141</td>
<td>F</td>
<td>47</td>
<td>12.81</td>
<td>Breastfeeding</td>
<td>Detrussor sphincter dyssynergia</td>
<td>30</td>
<td>31</td>
<td>–</td>
</tr>
<tr>
<td>15 354</td>
<td>F</td>
<td>65</td>
<td>6.76</td>
<td>Sexual</td>
<td>Underactive detrusor</td>
<td>52</td>
<td>52</td>
<td>–</td>
</tr>
<tr>
<td>17 045</td>
<td>F</td>
<td>30</td>
<td>10.47</td>
<td>Breastfeeding</td>
<td>Detrussor sphincter dyssynergia</td>
<td>18</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td>20 639</td>
<td>F</td>
<td>58</td>
<td>15.34</td>
<td>Sexual</td>
<td>Underactive detrusor</td>
<td>50</td>
<td>39</td>
<td>–</td>
</tr>
<tr>
<td>18 235</td>
<td>M</td>
<td>46</td>
<td>0.19</td>
<td>Sexual</td>
<td>Detrussor sphincter dyssynergia</td>
<td>35</td>
<td>34</td>
<td>–</td>
</tr>
<tr>
<td>19 428</td>
<td>F</td>
<td>47</td>
<td>7.10</td>
<td>Sexual</td>
<td>Detrussor sphincter dyssynergia</td>
<td>37</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>17 477</td>
<td>F</td>
<td>51</td>
<td>8.58</td>
<td>Blood transfusion</td>
<td>Underactive detrusor</td>
<td>40</td>
<td>40</td>
<td>–</td>
</tr>
<tr>
<td>20 546</td>
<td>M</td>
<td>67</td>
<td>1.11</td>
<td>Sexual</td>
<td>Detrussor sphincter dyssynergia</td>
<td>59</td>
<td>55</td>
<td>–</td>
</tr>
<tr>
<td>18 032</td>
<td>F</td>
<td>59</td>
<td>8.88</td>
<td>Sexual</td>
<td>Underactive detrusor</td>
<td>47</td>
<td>47</td>
<td>–</td>
</tr>
</tbody>
</table>

1—age in years; 2—HTLV-1 proviral load, copies per 100 leucocytes; 3—duration in months of confirmed HTLV-1 infection from data of first positive ELISA and western blot test results; 4—duration in months of urinary symptoms; 5—duration in months of HAM/TSP symptoms/signals.

HAM/TSP, HTLV-1 associated myelopathy/tropical spastic paraparesis; HTLV-1, human T lymphotropic virus type 1.
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