Introduction

- Chimeric antigen receptor T (CAR-T) cell therapies targeting CD19 antigen can yield durable remissions, and have expanded treatment options for relapsed refractory large B-cell lymphoma (r/r DLBCL).1,2
- Yet CAR-T use can involve potentially severe toxicities, such as cytokine release syndrome and neurologic toxicities.
- Management of neurologic toxicities requires vigilant monitoring and intensive supportive care.3,4
- We found no studies reporting healthcare costs associated with treatment-related neurotoxic events (NEs) in patients with r/r DLBCL.

Objectives

- To develop an evidence-based list of r/r DLBCL treatment-related NEs, including the most recently approved CAR-Ts, and to estimate the healthcare costs associated with the NEs in a real-world setting.

Methods

- **Identification of NEs (Figure 1)**
  - 4.7 (2.9) [4]
  - 60.2 (14.2) [60]
  - 68 (28.6)
  N=31,065
  ICD
  - 3.6 (2.3) [3]
  - 4.5 (3.0) [3]
  - 79 (33.2)
  N=3,839 (34.6)
  - r
  Current drug labels (US prescribing information)
  - r
  Grade 3 or higher NEs that occurred in ≥2% of patients
  - 2 NEs were identified based on drug PI, clinical trials, and ICANS
  - 218 years; had DLBCL diagnosis before or on index date; no use of index treatment before index date; and continuously enrolled 6 months before index date
  - No potential duplicates (having the same age, gender, index date and index treatment) in the databases

**Table 1. Patient demographics and Charlson comorbidity index score**

<table>
<thead>
<tr>
<th>Age, year, mean (SD) [median]</th>
<th>CAR-T (N=146)</th>
<th>High-intensity (N=17)</th>
<th>Low-intensity (N=129)</th>
<th>Targeted (N=28)</th>
<th>All (N=164)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50.4 (14.3) [58]</td>
<td>58.5 (10.5) [65]</td>
<td>61.2 (11.3) [62]</td>
<td>68.5 (13.5) [80]</td>
<td>60.2 (14.2) [60]</td>
<td>61.7 (17.7) [80]</td>
</tr>
<tr>
<td>55-64</td>
<td>34 (28.8)</td>
<td>2.55 (26.7)</td>
<td>241 (17.8)</td>
<td>66 (23.6)</td>
<td>2.881 (25.8)</td>
</tr>
<tr>
<td>65+</td>
<td>32 (27.1)</td>
<td>3.63 (38.3)</td>
<td>657 (52.2)</td>
<td>79 (23.2)</td>
<td>4.389 (39.6)</td>
</tr>
</tbody>
</table>

**Figure 3. Treatment hierarchy**

- **Results**
  - 16 NEs were identified based on drug PI, clinical trials, and ICANS
  - 13 from CAR-T, 5 from conventional immunochemotherapy, and 2 from both
  - 11 included in the claims analysis based on availability of ICD-9-10-CM codes: encephalopathy, somnolence, mental status changes/disorientation, disturbances in attention, seizure, cerebral edema, speech disorder, aphasia, delirium, agitation/restlessness, abnormal motor activity
  - 11,098 patients with r/r DLBCL were identified from claims data (Table 1)