The Safety of Teprotumumab Administration Including Repeat Courses of Therapy

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Background
Thyroid Eye Disease (TED) is a rare autoimmune condition found in patients with Graves' disease where the eye muscles, eyelids, and tear glands become inflamed. Teprotumumab is a novel treatment for TED. The typical course of therapy of teprotumumab consists of eight infusions.

The OPTIC study was a phase 3 randomized trial of teprotumumab vs placebo. The primary outcome was reduction of proptosis at week 24. The percentage of patients with reduced proptosis was higher with teprotumumab than placebo. This study was followed by OPTIC-X which studied retreatment in non-responders or patients who received placebo previously. OPTIC-X concluded that patients responded similarly to teprotumumab, and patients with flare ups may benefit from additional courses of therapy.

Purpose
The purpose of this study is to assess safety of teprotumumab, including safety data on additional courses of therapy.

Methods
A retrospective, multi-center chart review was performed evaluating patients who received teprotumumab. Electronic medical records and internal event reporting software were evaluated for adverse reactions. The primary outcome evaluated the safety profile with eight infusions of teprotumumab. The secondary outcome assessed the safety of additional courses of teprotumumab. Inclusion criteria were patients at least 18 years of age diagnosed with TED and receiving at least eight infusions of teprotumumab. The secondary outcome assessed the safety of additional courses of teprotumumab. Exclusion criteria were patients receiving eight infusions of teprotumumab and patients with flare ups who received additional courses of therapy.

Results
Between March 31, 2020 - February 23, 2022, two hundred fifty-seven patients received at least eight infusions of teprotumumab. The secondary outcome assessed the safety of additional courses of teprotumumab. Seven patients received more than eight infusions. Fifty-nine patients experienced ADRs; three of which received more than eight infusions of teprotumumab.

No ADRs were reported in 77% (198) patients that received 8 infusions. Common ADRs reported in patients receiving 8 infusions were headache, nausea/vomiting, diarrhea, fatigue, and hearing impairment. The incidence of ADRs was greater in the group of patients who received more than 8 infusions. Limitations of this study include the reliance on voluntary safety reporting and manual documentation in electronic medical records.

Adverse drug reactions (ADRs) documented with teprotumumab included infusion reactions, hyperglycemia, exacerbation of inflammatory bowel disease, nausea, diarrhea, and fatigue. Due to the potential ADRs, teprotumumab is suggested to infuse teprotumumab in a controlled setting with a healthcare provider.

Table 1: Summary of Baseline Patient Demographics for Patients Experiencing Adverse Events

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total Patients</th>
<th>Patients with ADRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, Average</td>
<td>53.4</td>
<td>53.3</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>67 (26%)</td>
<td>12 (20%)</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>190 (74%)</td>
<td>47 (80%)</td>
</tr>
</tbody>
</table>

Figure 1: TOTAL OCCURRENCE OF ADVERSE REACTION

Adverse Reaction Type (some patients may have experienced more than one type of reaction)

Figure 1 (continued)

Results (continued)
No ADRs were reported in 57% (9) patients that received more than 8 infusions. ADRs reported in patients with additional courses of teprotumumab included headache 14% (8), nausea/vomiting 29% (2), and dizziness 9% (6).

Discussion
The incidence of ADRs was greater in the group of patients who received more than 8 infusions. Limitations of this study include the reliance on voluntary safety reporting and manual documentation in electronic medical records.

Conclusion
This study demonstrated a higher incidence of adverse reactions compared to product labeling. The findings demonstrated higher incidence of muscle spasms and cramps, nausea, vomiting, diarrhea, fatigue, and hearing impairment compared to clinical trials noted in the prescribing information. The results from this study may be utilized in future studies to evaluate the safety of additional courses of teprotumumab.

References

TEPEZZA (teprotumumab) [prescribing information] Deerfield, IL: Horizon. 


Disclosures
Authors of this presentation have the following to disclose: possible financial or personal relationships with commercial entities that may have a direct or indirect influence on the subject matter of this presentation: Rubia Samara, Jessica Fiant, Maria Giannakos, Suzanne Kluge. Nothing to disclose.