Lorazepam Injection Drug Shortage

Issue
A national supply disruption has caused an interruption in the dependable availability of lorazepam injection products – a benzodiazepine used for status epilepticus and as a pre-op medication for the relief of anxiety and tension.

Products Affected
All NDCs of lorazepam injection are being affected.

Estimated Resupply Date(s)
No definitive resupply date(s) have been provided.

Action Steps

PharMerica Pharmacies
- Monitor for availability of product and complete orders when possible.
- Notify serviced facilities when prescription orders are unable to be fulfilled due to the drug shortage(s).

Facilities
- Solicit recommendations from prescribers and obtain prescriptions for alternative therapy to switch patients to alternative agent(s) for their treated indication when notified by PharMerica pharmacies of drug shortage(s).
  - There are no direct dosage conversions between the benzodiazepines because each has a distinct pharmacokinetic profile that dictates the agent’s therapeutic use and dosing.

Pharmacokinetics of Injectable Benzodiazepines

<table>
<thead>
<tr>
<th>Agent</th>
<th>Onset of Action (min) Intravenous</th>
<th>Onset of Action (min) Intramuscular</th>
<th>Duration of Action (hours) Intravenous</th>
<th>Duration of Action (hours) Intramuscular</th>
<th>Half-life (hours)</th>
<th>Active Metabolites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazepam</td>
<td>1 to 5</td>
<td>slow and erratic absorption</td>
<td>0.3 to 0.5</td>
<td>slow and erratic absorption</td>
<td>20 to 120</td>
<td>Yes</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>5 to 20</td>
<td>15 to 30</td>
<td>6 to 8</td>
<td>6 to 8</td>
<td>8 to 15</td>
<td>No</td>
</tr>
<tr>
<td>Midazolam</td>
<td>1 to 5</td>
<td>5 to 15</td>
<td>≤ 2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3 to 11</td>
<td>Yes</td>
</tr>
</tbody>
</table>

If Lorazepam Injection ordered for STATUS EPILEPTICUS is unavailable, consider this UpToDate Summary

- Benzodiazepines — 1<sup>st</sup> line treatment for convulsive status epilepticus because they control seizures rapidly.
- 3 most commonly used benzodiazepines for status epilepticus are diazepam, lorazepam, and midazolam.
- In adults, choice of benzodiazepine medication varies by route of administration:
  - Diazepam is preferred for rectal administration.
    - Rectal diazepam is given in doses of 0.2 mg/kg up to 20 mg for an adult.
    - Intranasal diazepam given at 0.2 mg/kg is an alternative.
  - Lorazepam is preferred for the intravenous (IV) route.
    - 4 mg IV is the best-studied dose in this setting.
  - Midazolam is preferred for intramuscular (IM), intranasal, or buccal administration.
    - 10 mg IM is the best studied dose in this setting.
    - The typical dose of buccal midazolam is 0.2 mg/kg, or 10 mg in adolescents and adults. The dose of intranasal midazolam using the nasal spray formulation (5 mg/0.1 mL) is one spray (5 mg) in each nostril to give 10 mg.