Erwinaze

**Description**

Erwinaze (asparaginase *Erwinia chrysanthemi*)

**Background**

Erwinaze (asparaginase *Erwinia chrysanthemi*) is an asparagine-specific enzyme. L-asparaginase is a tetrameric enzyme consisting of four identical subunits, each having a molecular weight of about 35 kDa. Asparaginase *Erwinia chrysanthemi* catalyzes the deamidation of asparagine to aspartic acid and ammonia, resulting in a reduction in circulating levels of asparagine. The mechanism of action of Erwinaze is thought to be based on the inability of leukemic cells to synthesize asparagine due to lack of asparagine synthetase activity, resulting in cytotoxicity specific for leukemic cells that depend on an exogenous source of the amino acid asparagine for their protein metabolism and survival (1).

Erwinaze (asparaginase *Erwinia chrysanthemi*) is indicated for the treatment of patients with acute lymphoblastic leukemia (ALL) who have developed hypersensitivity to *E. coli*-derived asparaginase as a component of a multi-agent chemotherapeutic regimen (1).

**Regulatory Status**

FDA-approved indication: Erwinaze is indicated as a component of a multi-agent chemotherapeutic regimen for the treatment of patients with acute lymphoblastic leukemia (ALL) who have developed hypersensitivity to *E. coli*-derived asparaginase (1).

Erwinaze is contraindicated in patients with a history of pancreatitis, thrombosis, hemorrhagic events or anaphylaxis reaction with prior L-asparaginase therapy. Discontinue Erwinaze in the event of serious hypersensitivity reactions, including anaphylaxis, and severe or hemorrhagic...
pancreatitis. Glucose intolerance can occur and, in some cases, may be irreversible. Perform appropriate monitoring and treat hyperglycemia with insulin, as necessary. If thrombosis or hemorrhage occurs discontinue Erwinaze until resolved. Use in pregnant women only if clearly needed. Do not use in lactating women (1).

Related policies
Asparlas, Oncaspar

Policy

This policy statement applies to clinical review performed for pre-service (Prior Approval, Precertification, Advanced Benefit Determination, etc.) and/or post-service claims.

Erwinaze may be considered medically necessary for the treatment of patients with acute lymphoblastic leukemia (ALL) who have developed hypersensitivity to E. coli-derived asparaginase.

Erwinaze is considered investigational for all other indications.

Prior-Approval Requirements

Diagnosis

Patient must have the following:

1. Acute lymphoblastic leukemia (ALL)
   a. Hypersensitivity to E. coli-derived asparaginase
   b. Prescriber agrees to monitor bilirubin, liver function tests (LFTs), and glucose

Prior – Approval Renewal Requirements
Same as above

Policy Guidelines

Pre - PA Allowance
None
Prior - Approval Limits
Duration 12 months

Prior – Approval Renewal Limits
Duration 12 months

Rationale

Summary

Erwinaze (asparaginase Erwinia chrysanthemi) can be used as a component of a multi-agent chemotherapeutic regimen for the treatment of pediatric and adult patients with acute lymphoblastic leukemia (ALL) who have developed hypersensitivity to native or pegylated Escherichia coli (E. coli)-derived asparaginase. Erwinaze is contraindicated in patients with a history of pancreatitis, thrombosis, hemorrhagic events or anaphylaxis reaction with prior L-asparaginase therapy. Erwinaze therapy should be discontinued if the above conditions occur during therapy. Glucose intolerance could occur and may be irreversible (1).

Prior approval is required to ensure the safe, clinically appropriate and cost effective use of Erwinaze while maintaining optimal therapeutic outcomes.

References

Policy History

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 2012</td>
<td>New Policy</td>
</tr>
<tr>
<td>March 2013</td>
<td>Annual editorial and reference update</td>
</tr>
<tr>
<td>March 2014</td>
<td>Annual review</td>
</tr>
<tr>
<td>March 2015</td>
<td>Annual editorial review and reference update</td>
</tr>
<tr>
<td>June 2016</td>
<td>Annual editorial review and reference update</td>
</tr>
<tr>
<td></td>
<td>Policy number changed from 5.04.17 to 5.21.17</td>
</tr>
<tr>
<td>June 2017</td>
<td>Annual review</td>
</tr>
<tr>
<td>June 2018</td>
<td>Annual editorial review</td>
</tr>
<tr>
<td>June 2019</td>
<td>Annual review</td>
</tr>
<tr>
<td>September 2019</td>
<td>Annual review. Added requirement to monitor bilirubin, LFTs, and glucose per FEP</td>
</tr>
</tbody>
</table>

Keywords
This policy was approved by the FEP® Pharmacy and Medical Policy Committee on September 13, 2019 and is effective on October 1, 2019.