

PRIOR AUTHORIZATION POLICY

POLICY: Enzyme Replacement Therapy – Strensiq Prior Authorization Policy

- Strensiq® (asfotase alfa subcutaneous injection – Alexion)

REVIEW DATE: 07/20/2022

OVERVIEW

Strensiq, a tissue non-specific alkaline phosphatase (TNSALP), is indicated for the treatment of patients with **perinatal/infantile- and juvenile-onset hypophosphatasia (HPP)**.¹ Strensiq is an enzyme replacement therapy which replaces human TNSALP.

Disease Overview

HPP is an inherited metabolic disease caused by a loss-of-function mutation in the gene which codes for TNSALP.² TNSALP is tissue bound and expressed in high concentrations in the liver, kidney, neurons, neutrophils, bone, and teeth.^{2,3} In HPP, inorganic pyrophosphate and pyridoxal 5'-phosphate, substrates for TNSALP, are increased and lead to disease manifestations. Inorganic pyrophosphate is an inhibitor of bone mineralization, and its accumulation leads to rickets and osteomalacia. Pyridoxal 5'-phosphate, a derivative of vitamin B₆, is necessary for the synthesis of gamma aminobutyric acid (GABA). However, for pyridoxal 5'-phosphate to enter the neuron, it must be dephosphorylated to allow pyridoxal to enter the neuron where it is rephosphorylated. The decreased synthesis of GABA in HPP leads to seizures.

HPP is a rare disease, with an estimated live-birth incidence, for the severe forms of HPP, of 1:100,000 in Canada and approximately 1:300,000 in Europe.^{2,4} Prevalence in certain populations, such as Canadian Mennonites, may be as high as 1:2,500 births. Disease severity can range from neonatal death with almost no skeletal mineralization to dental problems in adults without any bone symptoms.^{2,4} In patients most severely affected by HPP, mortality ranges from 50% to nearly 100% during infancy.²

POLICY STATEMENT

Prior Authorization is recommended for prescription benefit coverage of Strensiq. All approvals are provided for the duration noted below. Because of the specialized skills required for evaluation and diagnosis of patients treated with Strensiq as well as the monitoring required for adverse events and long-term efficacy, approval requires Strensiq to be prescribed by or in consultation with a physician who specializes in the condition being treated.

Automation: None.

RECOMMENDED AUTHORIZATION CRITERIA

Coverage of Strensiq is recommended in those who meet the following criteria:

FDA-Approved Indication

- 1. Hypophosphatasia – Perinatal/Infantile- and Juvenile-Onset.** Approve for 1 year if the patient meets all of the following criteria (A, B, C, and D):
 - A) Diagnosis is supported by one of the following (i, ii, or iii):**
 - i. Molecular genetic testing documenting tissue non-specific alkaline phosphatase (*ALPL*) gene mutation; OR**

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- ii. Low baseline serum alkaline phosphatase activity; OR
 - iii. An elevated level of a tissue non-specific alkaline phosphatase substrate (i.e., serum pyridoxal 5'-phosphate, serum or urinary inorganic pyrophosphate, urinary phosphoethanolamine); AND
- B)** Patient meets one of the following (i or ii):
- i. Patient currently has, or has a history of clinical manifestations consistent with hypophosphatasia; OR
Note: Examples of clinical manifestations include skeletal abnormalities, premature tooth loss, muscle weakness, poor feeding, failure to thrive, respiratory problems, vitamin B₆-dependent seizures.
 - ii. Patient has a family (parent or sibling) of hypophosphatasia without current clinical manifestations of hypophosphatasia; AND
- C)** Disease onset \leq 18 years of age; AND
- D)** Strensiq is prescribed by or in consultation with a geneticist, endocrinologist, a metabolic disorder sub-specialist, or a physician who specializes in the treatment of hypophosphatasia or related disorders.

CONDITIONS NOT RECOMMENDED FOR APPROVAL

Coverage of Strensiq is not recommended in the following situations:

1. Coverage is not recommended for circumstances not listed in the Recommended Authorization Criteria. Criteria will be updated as new published data are available.

REFERENCES

1. Strensiq® subcutaneous injection [prescribing information]. Cheshire, CT: Alexion; April 2021.
2. Whyte MP. Hypophosphatasia: Enzyme Replacement Therapy Brings New Opportunities and New Challenges. *J Bone Miner Res.* 2017;32:667-675.
3. Orima H. Pathophysiology of Hypophosphatasia and the Potential Role of Asfotase Alfa. *Ther Clin Risk Manag.* 2016;12:777-786.
4. Millan JL, Plotkin H. Hypophosphatasia – Pathophysiology and Treatment. *Actual Osteol.* 2012;8:164-182.