



Prior Authorization Approval Criteria

Alpha-1 proteinase inhibitor

Generic name:	Alpha-1 proteinase inhibitor
Brand names:	Aralast, Glassia, Prolastin, Zemaira
Medication class:	Alpha-1 proteinase inhibitor
FDA-approved uses:	Aralast, Glassia, Prolastin, Zemaira: Chronic augmentation and maintenance therapy in individuals with emphysema due to congenital alpha-1 proteinase inhibitor (A1PI) deficiency
Available dosage forms:	400 mg, 500 mg, 1000 mg lyophilized powder for reconstitution for IV administration Glassia: a single use vial containing 1 gram of functional Alpha-1-PI in 50 mL of solution.
Usual dose:	Aralast, Prolastin, Zemaira: 60 mg/kg IV over 15 minutes once weekly. Glassia: 60 mg/kg IV over 60-80 minutes once weekly. Use within 3 hours after reconstituted product is warmed to room temperature.
Duration of therapy:	Chronic, indefinite.

Approximate cost:
(based on AWP 2011)

Aralast:	1000 mg or 500mg	Cost/dose = \$2,100	Annual cost = \$109,200
Prolastin:	1000 mg	Cost/dose = \$1,932	Annual cost = \$100,464
Zemaira:	1000 mg	Cost/dose = \$1,806	Annual cost = \$93,912
Glassia:	1000mg	Cost/dose = \$2,310	Annual cost = \$120,120

Criteria for use (*bullet points below are all inclusive unless otherwise noted*):

- The indicated diagnosis (including any applicable labs and /or tests) and medication usage must be supported by documentation from the patient's medical records.
- Must have clinically documented alpha-1 antitrypsin (AAT) deficiency
 - Serum concentration of alpha 1-antitrypsin (AAT) less than 11 uM/L (corresponds to 50 mg/dl (nephelometry) or 80 mg/dl (radial immunodiffusion))
- Must have a high-risk AAT deficiency phenotype (PiZZ, PiZ(null) or Pi(null)(null) or other phenotypes associated with serum AAT concentrations of less than 11 uM/L.)
- Must have documented progressive emphysema
 - Must have an established airflow obstruction* (See Augmentation Therapy note below)
 - There must be a documented rate of decline in forced expiratory volume in 1 second (FEV1)
- Patient must not be a current smoker
 - If patient is a current smoker, expectation is that the patient will stop smoking. Patient must be actively receiving a smoking cessation treatment.
- Must be on optimal supportive therapy for obstructive lung disease

- Inhaled bronchodilators, inhaled steroids
- Oral corticosteroids (for asthmatic components or acute exacerbations)
- Early treatment with antibiotics if there is evidence of purulent exacerbations, bronchitis, or respiratory infections
- Preventive vaccines (influenza, pneumococcus)
- Supplemental oxygen, when indicated
- Pulmonary rehabilitation (cardiovascular fitness, self-confidence, and stress control)
- Treatment, when necessary, of depression, panic disorder, weight loss, and malnutrition

Criteria for continuation of therapy:

- Clinical evidence of efficacy:
 - elevation of AAT levels (above protective threshold)
 - reduction in rate of deterioration of lung function
 - reduction in FEV1 rate of decline
- Patient is a non-smoker
- Continues supportive therapy for obstructive lung disease

Caution:

- Use caution in patients at risk for fluid overload
- May carry the risk of transmission of infectious agents

Monitoring:

- A1PI serum levels, is suggested
- vital signs during infusion
- annual PFTs

Contraindications:

- Hypersensitivity to alpha-1 proteinase inhibitor
- Patients with selective IgA deficiencies (IgA less than 15 mg/dL) who have known antibody against IgA (anti-IgA antibody)

Not approved if:

- Above criteria are not met
- Emphysema is due to environmental triggers
- Emphysema is caused by tobacco use
- Patient does not have emphysema
- Patient has any contraindications to the use of alpha-1 proteinase inhibitors
- Patient had a lung transplant
- Being used to treat liver disease

Special considerations:

All studies to date have included a small number of patients for a period not exceeding 6 months. AAT augmentation therapy has been shown to increase AAT levels, but the ability to alter/halt progression to emphysema has not been demonstrated. Long-term studies are needed to determine the long term effects of AAT therapy.

Notes:

- Treatment recommendations based on The American Thoracic Society/European Respiratory Society Statement: Standards for the Diagnosis and Management of Individuals with Alpha-1 Antitrypsin Deficiency, 2003.

- Emphysema associated with AAT deficiency usually does not develop until the after the 3^d decade of life.
- Normal AAT levels range from 20 to 48 uM/L (which corresponds to 80 to 220 mg/dl by nephelometry or 150 to 350 mg/dl by radial immunodiffusion)
- Protective threshold level is 11 uM/L (corresponds to 50 mg/dl (nephelometry) or 80 mg/dl (radial immunodiffusion). Levels below this threshold are associated with an increased risk for emphysema.
- Annual decline in FEV1:
 - Normal adult – 30ml
 - AAT-deficient – 60ml (130ml decline if smoker, 70ml decline if ex-smoker)
 - Note: standard error in spirometry is 100ml with 1 year of data; with 10 years of data, the standard error is 10ml.
- Expected PFTs in an AAT-deficient emphysema patient:
 - FEV1 – reduced
 - FVC – normal or reduced
 - FEV1/FVC – reduced
 - RV – increased
 - TLC – increased
 - Diffusing capacity - reduced
- *Augmentation Therapy: Stronger evidence of slower rate of FEV1 decline and decreased mortality exists for patients with moderate airflow obstruction (FEV1 35-65 % predicted). For patients with severe (FEV1 less than or equal to 35% predicted) and mild (FEV1 greater than or equal to 50-60% predicted) the benefits are less clear.

FCHP Pharmacy and Therapeutics Committee approval: _____

Date: _____

Adopted: 04/13/05

revisions: 12/12/07, 03/09/11, 12/2011