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 Alpha1-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

The criteria listed above applies to Fallon Health Plan and its subsidiaries.
• 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:
  o elevation of AAT levels (above protective threshold)
  o 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 3rd 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.

Fallon Health Pharmacy and Therapeutics Committee approval: _______________________________

Date: ______________________

Adopted: 04/13/05
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