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P&T Date: 04/10/2025

Alpha – 1 Proteinase Inhibitors

Aralast NP® (alpha-1 proteinase inhibitor)

Glassia™ (alpha-1 proteinase inhibitor)

Prolastin®-C (alpha-1 proteinase inhibitor)

Prolastin®-C Liquid (alpha-1 proteinase inhibitor)

Zemaira® (alpha-1 proteinase inhibitor)

HCPCS: Aralast NP: J0256; Glassia: J0257; Prolastin-C: J0256; Prolastin-C Liquid: J0256; Zemaira: J0256

Policy:

Requests must be supported by submission of chart notes and patient specific documentation.

- A. Coverage of the requested drug is provided when all the following are met:
 - a. FDA approved age
 - b. Must be a nonsmoker
 - c. Member must have pre-treatment serum levels of alpha-1 antitrypsin (AAT) that are less than 11 micromol/L measured by ELISA (less than 80 mg/dL measured by radial immunodiffusion or less than 57 mg/dL measured by nephelometry) consistent with phenotypes PiZZ, PiZ (null), or Pi (null, null) of AAT
 - i. Phenotype/genotype testing may be requested for additional support of alpha-1 antitrypsin deficiency diagnosis
 - d. Member must have symptomatic emphysema
 - e. Member must have deteriorating pulmonary function, as demonstrated by a decline in the FEV₁ (35-60% of predictive value)
 - f. Trial and failure, contraindication, OR intolerance to the preferred drugs as listed in BCBSM/BCN's utilization management medical drug list and/or BCBSM/BCN's prior authorization and step therapy documents

- B. Quantity Limitations, Authorization Period and Renewal Criteria
 - a. Quantity Limits: Align with FDA recommended dosing
 - b. Authorization Period: One year at a time
 - c. Renewal Criteria: Clinical documentation must be provided to confirm that current criteria are met and that the medication is providing clinical benefit

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***Note: Coverage and approval duration may differ for Medicare Part B members based on any applicable criteria outlined in Local Coverage Determinations (LCD) or National Coverage Determinations (NCD) as determined by Center for Medicare and Medicaid Services (CMS). See the CMS website at <http://www.cms.hhs.gov/>. Determination of coverage of Part B drugs is based on medically accepted indications which have supported citations included or approved for inclusion determined by CMS approved compendia.

Background Information:

- Alpha-1 antitrypsin deficiency (AATD) is a rare autosomal recessive genetic disorder that results in decreased production of alpha-1 antitrypsin (AAT) protein (also referred to as alpha-1 proteinase inhibitor), or production of abnormal types of the protein that are functionally deficient. AAT inhibits the neutrophil elastase enzyme from degrading elastin tissues in the lung. Deficiency leads to early onset of severe pulmonary emphysema in adults, which leads to a decline in lung function (FEV₁), exacerbation of symptoms, decline in ability to function, and even death. Replacement therapies have not been shown to prevent or reverse emphysema in AATD; however, data has shown that treatment of symptomatic patients with low serum levels of AAT due to congenital deficiencies of this enzyme will slow the progression of disease.
- Intravenous augmentation therapy with AAT is the most direct and efficient means of elevating serum AAT levels, with the goal of slowing progression of emphysema. Guidelines from the Global Initiative for Chronic Obstructive Lung Disease (GOLD; 2025) and the Medical and Scientific Advisory Committee of the Alpha-1 Foundation (2016) recommend augmentation therapy as most suitable for never or ex-smokers with AATD, emphysema, and an FEV₁ of 35-60% predicted. Patients must have an AAT genetic variant consistent with severe AAT deficiency (Pi*ZZ, Pi*Z null, Pi* (null) (null)) and a low serum level of AAT below the protective threshold (ie <11 µmol/L via ELISA or <57 mg/dL via nephelometry or < 80 mg/dL via radial immunodiffusion). Though available literature on augmentation therapy primarily focuses on patients with the ZZ genotype, people with the Z/null or null/null genotypes are also usually assessed for augmentation therapy as they have even lower plasma AAT levels.
- Clinically evident emphysema may not be evident in AAT deficient patients with higher FEV₁ values, and evidence that augmentation therapy confers benefit (e.g., slowed rate of FEV₁ decline and decreased mortality) is stronger for individuals with moderate airflow obstruction (e.g., FEV₁ 35–60% predicted) than for those with severe (e.g., FEV₁ ≤ 35% predicted) or mild (e.g., FEV₁ ≥ 50–60% predicted) airflow obstruction. For those with lung disease related to AATD and an FEV₁ > 65% predicted, discussion with each individual regarding potential benefits of reducing lung function decline is recommended, with consideration of the cost of therapy and lack of evidence for such a benefit.
- The FDA has approved the use of four AAT products derived from human plasma: Glassia, Prolastin, Zemaira, and Aralast; available guidelines do not differentiate between products. These agents are administered intravenously at an FDA approved dose of 60 mg/kg once weekly. All products require administration by a healthcare professional; however, Glassia may be self-administered by the patient/caregiver after appropriate training. Studies support that weekly infusions at this dose maintain AAT levels in the serum and epithelial lining fluid above protective thresholds (i.e. >11 µmol/L via ELISA or >57 mg/dL via nephelometry or >80 mg/dL via radial immunodiffusion) throughout the week and over long-term. Minimal data is available describing improved clinical outcomes; therefore, outside of restoration of serum AAT levels, therapeutic response and efficacy can be evaluated via surrogate outcome measures including stability or improvement in FEV₁ and other pulmonary function testing, reductions in exacerbations, and reductions in daily symptoms.
- All AAT products appear to be similar in biologic activity for slowing emphysema progression in AATD. No evidence is available suggesting clinically meaningful differences in safety and/or efficacy between the available products. One trial is available comparing Prolastin and Aralast which showed equivalent results. No published trials comparing Zemaira to another alpha-1 proteinase inhibitor product are available. However, data within FDA product labeling describes a comparison of Zemaira and Prolastin which showed equivalent results. In one unpublished, randomized,

controlled study comparing Glassia to Prolastin in fifty patients with congenital AATD and clinical signs and symptoms of emphysema, Glassia met pre-specified criteria for non-inferiority; however, no clinical endpoints were assessed.

- The administration of alpha-1 proteinase inhibitors (human) increases plasma levels of alpha-1 proteinase inhibitors, and levels of functionally active alpha-1 proteinase inhibitors in the lung are increased proportionately. However, long-term controlled clinical trials that evaluate the effect of chronic replacement therapy with alpha-1 proteinase inhibitor on the development or progression of emphysema in patients with congenital AATD have not yet been performed. The slow and progressive nature of the disease, as well as estimates of the sample size required of this rare disorder render the ability to conduct such trials very challenging. Nonetheless, studies to monitor the long-term effects are continuing as part of the post-approval process. FDA-required Phase IV clinical trials are currently being conducted

References:

1. Prolastin-C Liquid package insert. Research Triangle Park, NC: Grifols Therapeutics; September 2017. Available at: <https://www.fda.gov/downloads/BiologicsBloodVaccines/UCM209676.pdf>. Accessed January 4, 2018.
2. Aralast package insert. Westlake Village, CA: Baxalta US Inc.; March 2017. Available at: http://www.shirecontent.com/PI/PDFs/ARALASTNP_USA_ENG.pdf. Accessed February 14, 2018.
3. Zemaira package insert. Kankakee, IL: CSL Behring LLC; September 2015. Available at: <http://labeling.cslbehring.com/PI/US/Zemaira/EN/Zemaira-Prescribing-Information.pdf>. Accessed February 14, 2018.
4. Glassia package insert. Beit Kama, Negev, Israel: Kamada, Ltd. June 2017. Available at: http://www.shirecontent.com/PI/PDFs/GLASSIA_USA_ENG.pdf. Accessed February 14, 2018.
5. Abboud RT, Ford GT, Chapman KR. Emphysema in alpha-1 antitrypsin deficiency: does replacement therapy affect outcome? *Treat Respir Med*, 2005; 4(1):1-8.
6. American Thoracic Society/European Respiratory Society Statement: Standards for the diagnosis and management of individuals with alpha-1 antitrypsin deficiency. *Am J Respir Crit Care Med*, 2003; 168:818-900.
7. Louie SG, Sclar DA, Gill MA. Aralast: a new alpha1-protease inhibitor for treatment of alpha-antitrypsin deficiency. *Ann Pharmacother*. 2005 Nov; 39(11):1861-9.
8. Sandhaus RA, Turino G, et al. A1-Antitrypsin augmentation therapy for PI**MZ* heterozygotes. *Chest*, 2008; 134:831-4.
9. Wencker M et al. Longitudinal follow-up of patients with alpha-1 protease inhibitor deficiency before and during therapy with IV alpha-1 protease inhibitor. *Chest*. March 2001; 119: 737-44.
10. Janciauskiene S, Ferrarotti I, Laenger F, Jonigk D, and Luisetti M. Clinical utility gene card for: α -1 antitrypsin deficiency. *European Journal of Human Genetics*.2011; 19. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3083625/>. Accessed January 22, 2014.
11. Brantly, ML, Campos M, Cross C, Goodman K, et al. The Diagnosis and Management of Alpha-1 Antitrypsin Deficiency in the Adult. *Chronic Obstr Pulm Dis*. 2016; 3(3); 668-682. Available at: <https://journal.copdfoundation.org/jcopdf/id/1115/The-Diagnosis-and-Management-of-Alpha-1-Antitrypsin-Deficiency-in-the-Adult>. Accessed 3/6/2019.
12. Brantly ML, Lascano JE, Shahmohammadi A. Intravenous Alpha-1 Antitrypsin Therapy for Alpha-1 Antitrypsin Deficiency: The current State of Evidence. *Chronic Obstr Pulm Dis*. 2019; 6(1): 100-114. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6373587/>. Accessed 3/6/2019.
13. Stoller JK, Aboussouan LS. A review of Alpha-1 Antitrypsin Deficiency. *Am J Respir Crit Care Med*. 2012; 185(3): 246-59. Available at: https://www.atsjournals.org/doi/full/10.1164/rccm.201108-1428CI?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Aacrossref.org&rfr_dat=cr_pub%3Dpubmed. Accessed on 3/6/2019.
14. Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for the Diagnosis, Management and Prevention of Chronic Obstructive Pulmonary Disease: 2025 Report. www.goldcopd.org (Accessed on January 31, 2025).
15. Stoller JK. Treatment of alpha-1 antitrypsin deficiency. In: *UpToDate*, Post, TW (Ed), Waltham, MA, 2023.

Policy History												
#	Date	Change Description										
2.6	Effective Date: 04/10/2025	Annual review of criteria was performed, no changes were made										
2.5	Effective Date: 04/11/2024	Annual review of criteria was performed, no changes were made										
2.4	Effective Date: 04/06/2023	Annual review of criteria was performed, no changes were made										
2.3	Effective Date: 04/14/2022	Annual review of criteria was performed, no changes were made.										
2.2	Effective Date: 04/08/2021	Criteria updates as follows: <ol style="list-style-type: none"> 1. Clarified serum AAT levels to account for different methods of measurement 2. Removed criteria stating Glassia can be self-administered and added to background information 3. Updated trial and failure of preferred language to standard verbiage 4. Updated quantity limit language 5. Changed authorization period from 6 months initial/1 year renewal to 1 year 6. Changed renewal criteria to standard verbiage 										
2.1	Effective Date: 04/16/2020	Annual Review										
2.0	Effective Date: 05/09/2019	Added documentation of PFT, reduction in exacerbations, or reduction of daily symptoms to renewal criteria										
1.9	Effective Date: 05/03/2018	New dosage form for Prolastin-C Liquid added										
1.8	Effective Date: 02/08/2018	Annual review of Medical Policy										
1.7	Effective Date: 07/05/2017	UM medical management system update for BCNA and MAPPO for Aralast, Glassia, and Prolastin-C <table border="1" data-bbox="483 1163 1365 1371" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Line of Business</th> <th>PA Required in Medical Management System (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>BCBS</td> <td>Yes</td> </tr> <tr> <td>BCN</td> <td>Yes</td> </tr> <tr> <td>MAPPO</td> <td>Yes</td> </tr> <tr> <td>BCNA</td> <td>Yes</td> </tr> </tbody> </table>	Line of Business	PA Required in Medical Management System (Yes/No)	BCBS	Yes	BCN	Yes	MAPPO	Yes	BCNA	Yes
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1.6	Effective Date: 02/09/2017	Criteria Update for Glassia Self-Administration										
1.5	Effective Date: 11/05/2015	Criteria Update										

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1.4	Effective Date: 04/01/2015	UM medical management system update for Aralast, Glassia, Prolastin-C, and Zemaira <table border="1"> <thead> <tr> <th>Line of Business</th> <th>PA Required in Medical Management System (Yes/No)</th> </tr> </thead> <tbody> <tr> <td>BCBS</td> <td>Yes</td> </tr> <tr> <td>BCN</td> <td>Yes</td> </tr> <tr> <td>MAPPO</td> <td>No</td> </tr> <tr> <td>BCNA</td> <td>No</td> </tr> </tbody> </table>	Line of Business	PA Required in Medical Management System (Yes/No)	BCBS	Yes	BCN	Yes	MAPPO	No	BCNA	No
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1.2	Effective Date: 05/08/2014	Criteria Update										
1.1	Effective Date: 08/09/2012	Criteria Update										
1.0	Effective Date: 10/2010	New Policy										

* The prescribing information for a drug is subject to change. To ensure you are reading the most current information it is advised that you reference the most updated prescribing information by visiting the drug or manufacturer website or <http://dailymed.nlm.nih.gov/dailymed/index.cfm>.