PRIOR AUTHORIZATION POLICY

POLICY: Antibiotics (Inhaled) – Cayston Prior Authorization Policy
- Cayston® (aztreonam inhalation solution – Gilead Sciences)

REVIEW DATE: 04/07/2021

OVERVIEW

Cayston, a monobactam antibiotic, is indicated to improve respiratory symptoms in **cystic fibrosis** (CF) patients with *Pseudomonas aeruginosa*.[1] Safety and efficacy has not been established in pediatric patients below the age of 7 years, in patients with forced expiratory volume in 1 second (FEV_1) < 25% or > 75% predicted, or in patients colonized with *Burkholderia cepacia*.

To reduce the development of drug-resistant bacteria and maintain the effectiveness of Cayston and other antibiotics, Cayston should be used to treat patients with CF known to have *P. aeruginosa* in the lungs.[1]

Disease Overview

CF is a complex, chronic, multi-organ, inherited disorder.[2] Lung disease accounts for nearly 85% of mortality in patients with CF. Lung destruction in CF is caused by obstruction of the airways due to dehydrated and thickened secretions, resultant endobronchial infection, and an exaggerated inflammatory response leading to development of bronchiectasis and progressive obstructive airway diseases. In patients with CF, there are a number of maintenance treatments that may be prescribed, including inhaled antibiotics.

Aerosolized delivery of antimicrobial agents for pulmonary infections provides an ideal method for achieving high local drug concentration in the lungs while minimizing systemic exposure.[3] It has been estimated that by 18 years of age, 80% of patients with CF have *P. aeruginosa* infection. Once *P. aeruginosa* is established in the respiratory tract of a patient with CF, the clinical course of the disease can worsen. Although many organisms can be found in the lower respiratory tract of patients who have CF, infection with mucoid *P. aeruginosa* is common and is associated with poorer outcomes.[4] Infection with chronic mucoid *P. aeruginosa* is associated with poor growth, more rapid decline in lung function, increased need for antibiotic treatment and hospitalization, and earlier death. In addition, mucoid *P. aeruginosa* (characterized by its biofilm) is more resistant to antibiotics than non-mucoid *P. aeruginosa*. Therefore, effective antimicrobial therapies targeting *P. aeruginosa* are central to the management of CF.

Clinical Efficacy

An open-label study assessed inhaled aztreonam for the eradication of newly acquired *P. aeruginosa* in children aged 3 months to < 18 years of age (n = 105).[5] In total, 49 patients < 6 years of age were included in the study. Patients received inhaled aztreonam 75 mg three times daily for 28 days. At the end of treatment with inhaled aztreonam, 91.5% of the patients (n = 43/47) < 6 years of age were culture-negative for *P. aeruginosa* and 76.6% of patients (n = 36/47) < 6 years of age remained culture-negative 4 weeks after completing the course of therapy.

Guidelines

The Cystic Fibrosis Foundation (CFF) established a Pulmonary Therapeutics Committee which provided recommendations, based on available evidence (2007) for the use of medications intended to maintain lung health.[2] In 2013 the Committee published updated recommendations for the use of chronic medications in the management of CF lung disease.[6] In patients ≥ 6 years of age with CF and moderate-to-severe lung disease with *P. aeruginosa* persistently present in cultures of the airways, the chronic use of inhaled

aztreonam is strongly recommended to improve lung function and quality of life (QoL). For mild disease, the Committee recommends chronic use of inhaled aztreonam for patients with CF ≥ 6 years of age with *P. aeruginosa* persistently present in cultures of the airways, to improve lung function and QoL.

The CFF published a systematic review of the literature regarding eradication of initial *P. aeruginosa* infections to develop guidelines for effective prevention (2014).[7] The recommendations pertaining to inhaled antibiotics are as follows: 1) Inhaled antibiotic therapy is recommended for the treatment of initial or new growth of *P. aeruginosa* (the favored antibiotic regimen is tobramycin [300 mg BID] for 28 days); and 2) Prophylactic antipseudomonal antibiotics to prevent the acquisition of *P. aeruginosa* are not recommended.

POLICY STATEMENT

Prior authorization is recommended for prescription benefit coverage of Cayston. All approvals are provided for the duration noted below. In cases where the approval is authorized in months, 1 month is equal to 30 days. Because of the specialized skills required for evaluation and diagnosis of patients treated with Cayston as well as the monitoring required for adverse events and long-term efficacy, approval requires Cayston to be prescribed by or in consultation with a physician who specializes in the condition being treated.

Automation: None.

RECOMMENDED AUTHORIZATION CRITERIA

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

FDA-Approved Indications

1. **Cystic Fibrosis.** Approve for 1 year if the patient meets the following criteria (A and B):
   - **A)** Patient has *Pseudomonas aeruginosa* in culture of the airway (e.g., sputum culture, oropharyngeal culture, bronchoalveolar lavage culture); AND
   - **B)** Cayston is prescribed by or in consultation with a pulmonologist or a physician who specializes in the treatment of cystic fibrosis.

Other Uses with Supportive Evidence

2. **Continuation of Cayston**. Approve for 1 month if the patient was started on Cayston and is continuing course of therapy.

CONDITIONS NOT RECOMMENDED FOR APPROVAL

Coverage of Cayston is not recommended in the following situations:

1. **Nasal Rinse**. Cayston is not approvable for compounding of aztreonam nasal rinse.

2. 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. Cayston inhalation solution [prescribing information]. Foster City, CA: Gilead Sciences; November 2019.
2. Flume PK, O'Sullivan BP, Robinson KA, et al. Cystic fibrosis pulmonary guidelines. Chronic medications for maintenance of lung health. *Am J Respir Crit Care Med*. 2007;176:957-969.

3. Le J, Ashley ED, Neuhauser MM, et al and the Society of Infectious Diseases Pharmacists Aerosolized Antimicrobials Task Force. Consensus summary of aerosolized antimicrobial agents: application of guideline criteria. Insights from the Society of Infectious Diseases Pharmacists. *Pharmacotherapy*. 2010;30(6):562-584.
4. Geller DE. Aerosol antibiotics in cystic fibrosis. *Respir Care*. 2009;54(5):658-669.
5. Tiddens HAWM, De Boeck K, Clancy JP, et al. Open label study of inhaled aztreonam for *Pseudomonas* eradication in children with cystic fibrosis: The ALPINE study. *J Cyst Fibros*. 2015;14:111-119.
6. Mogayzel PJ, Naureckas ET, Robinson KA, et al. Cystic Fibrosis Pulmonary Guidelines. Chronic Medications for Maintenance of Lung Health. *Am J Respir Crit Care Med*. 2013;187:680-689.
7. Mogayzel PJ, Naureckas ET, Robinson KA, et al; and the Cystic Fibrosis Foundation Pulmonary Clinical Practice Guidelines Committee. Pharmacologic approaches to prevention and eradication of initial *Pseudomonas aeruginosa* infection. *Ann Am Thorac Soc*. 2014;11(10):1640-1650.