Quick Facts: Eosinophilic Asthma (EA)

Asthma is a chronic, inflammatory respiratory disease. Eosinophilic asthma is a subtype of asthma that is often severe. It is commonly seen in people who develop asthma in adulthood, although it may occur in children and young adults. In eosinophilic asthma, the numbers of eosinophils are increased in blood, lung tissue, and in mucus coughed up from the respiratory tract (known as sputum). The whole respiratory tract is involved in airflow obstruction from the sinuses to the small or distal airways. Patients with eosinophilic asthma frequently suffer from chronic sinus disease and nasal polyposis.

Symptoms:

People with eosinophilic asthma typically have the following symptoms:

- Wheezing
- Coughing
- Shortness of breath/difficulty breathing
- Chest tightness
- Lung function abnormalities (airflow obstruction)
- Chronic rhinosinusitis with nasal polyps
- Inflamed nasal mucous membrane

Symptoms are often severe and can be persistent.

Causes:

- Unknown

Associations:

- Increased asthma severity
- Late-onset disease
- Persistent symptoms despite steroids
- Less likely to have allergic phenotype with adult onset disease
- Sensitivity to NSAIDs
- Atypical presentation (e.g., more pronounced dyspnea upon exertion vs. wheezing, dynamic hyperinflation)
- Systemic steroid dependency
**Diagnosis:**

The diagnosis of eosinophilic asthma is made by measuring the number of eosinophils in blood. Elevated eosinophils may also be found in sputum samples and bronchial biopsy. Eosinophilic asthma may be misdiagnosed as chronic obstructive pulmonary disease (COPD).

**Findings:**

- Blood or sputum samples show elevated numbers of eosinophils.
- Biopsy: Eosinophils found in bronchial biopsy. Biopsy may show chronic inflammation. No consensus recommendations on definition or diagnosis.

**Treatment:**

- Inhaled and/or oral corticosteroids
- Long-acting bronchodilators
- Mepolizumab, an anti-IL-5 agent, approved for use in the U.S. to treat patients aged 12 years or older. It is used in combination with other asthma medications.
- Reslizumab, an anti-IL-5 agent, approved for use in the U.S. to treat patients aged 18 years or older.
- Omalizumab, an anti-IgE therapy, may also benefit patients that have IgE-mediated allergy, approved for use in the U.S. to treat patients aged 6 years or older with a positive skin test or in vitro reactivity to a perennial aeroallergen and symptoms that are inadequately controlled with corticosteroids. However, most eosinophilic asthma patients will not benefit from omalizumab.
- Other novel biologic treatments such as anti-IL-5 (benralizumab), anti-IL-4, and anti-IL-13 (e.g., dupilumab, lebrikizumab, tralokinumab) are being researched, but are not yet approved for use.

Note: Treatments other than inhaled steroids are used as add-ons to inhaled steroids.

**Prognosis:**

- Patients may experience a decline in lung function faster than people who do not have asthma, more so if asthma is not controlled and/or if the patient smokes.
- Death from asthma is rare, especially if a person is receiving proper treatment. Most asthma fatalities are preventable.
- Asthma can be debilitating and asthma-related episodes can be frightening. Uncontrolled asthma may interfere with daily activities, such as school and work.
- As with other subsets of asthma, patients who have eosinophilic asthma should receive ongoing medical care to maintain optimum health.

APFED is proud to have partnered with PVI, PeerView Institute for Medical Education, and Icahn School of Medicine at Mount Sinai to educate patients and providers about eosinophilic asthma. Support for the development of these resources was provided by an unrestricted educational grant to PVI, PeerView Institute for Medical Education, and Icahn School of Medicine at Mount Sinai from Teva Pharmaceuticals.

**Eosinophilic Asthma Digital Education For Providers**