A Refractory Case of Severely Uncontrolled Eosinophilic Asthma on Maximal Therapy

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LEARNING OBJECTIVES

- Identify biologic treatments for asthma refractory to traditional treatments
- Recognize the health care burden of severe, persistent asthma to patients and the U.S. health care system

INTRODUCTION

- Severe, persistent asthma represents a significant portion of morbidity and health care expenditure in the United States due to frequent emergency department visits for asthma exacerbation
- Treatment for asthma exacerbation includes oral steroids, which may have deleterious long-term effects on patients
- Biologic agents such as Mepolizumab or Benralizumab may be considered for improved daily control of severe, persistent asthma

CASE PRESENTATION

66-year-old female with a history of severe persistent asthma, GERD, and hypothyroidism presents with persistent wheezing and dyspnea on exertion.

- Uses albuterol multiple times daily with frequent night time awakenings
- Daily asthma medications include fluticasone-salmeterol, tiotropium, montelukast, theophylline, fluticasone propionate, cetirizine
- FEV1/FVC ratio of 68% pre-bronchodilator and 71% post-bronchodilator
- Eosinophils 14%,
  Absolute eosinophils 1.2 thou/cmm
- Bronchial thermoplasty was denied by insurance
- Mepolizumab or benralizumab are being considered after patient qualifies for Medicare

MECHANISM OF ACTION

- Benralizumab binds IL5 receptors on eosinophils and recruits natural killer cells to destroy the eosinophils

FOLLOW UP

- Patient has started Benralizumab 30 mg/ml injections every 3 months with significant improvement in symptoms
- Less wheezing, less chest tightness, no nocturnal symptoms, improved exercise tolerance
- No need for oral prednisone
- Considering weaning of theophylline and fluticasone propionate

TAKE HOME POINTS

- Biologic treatments such as benralizumab may be helpful in lowering the burden of severe, persistent asthma for patients and the health care system
- Insurance coverage of biologic agents may influence the decision making process for patients and physicians

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