**Mepolizumab as Treatment for Chronic Eosinophilic Pneumonia**

A. Saeed¹, M. Reid¹, P. A. Chung², K. Warrior³, B. Bemiss⁴; ¹Loyola University Medical Center, Maywood, IL, United States, ²Pulmonary and Critical Care, Loyola University Medical Center, Maywood, IL, United States, ³Loyola University Medical Center, MAYWOOD, IL, United States, ⁴Division of Pulmonary and Critical Care Medicine, Loyola University Medical Center, Maywood, IL, United States.

**Corresponding author's email: alisaeed1@gmail.com**

Introduction Chronic eosinophilic pneumonia (CEP) is a rare condition characterized by pulmonary eosinophilia, chest imaging abnormalities and steroid responsiveness. Often a clinical diagnosis, lung biopsy is only reserved for cases when the diagnosis is unclear. Here we present a case of CEP that was partially responsive to steroids, that completely reversed after initiation of mepolizumab therapy. Case A 67 year old man, with past medical history of asthma and smoking was evaluated by a pulmonologist at an outside hospital for progressively worsening dyspnea for the past 2 years. Pulmonary function tests showed a decreased forced vital capacity consistent with a restrictive defect and decreased diffusion capacity. Inhaler therapy initiated due to history of asthma yielded minimal benefit. High resolution computed tomography remained non-diagnostic showing subpleural reticular densities in the upper lobes and lung bases alone. Laboratory evaluation showed marked eosinophilia. Rest of the auto-immune workup was negative. He subsequently had a bronchoscopy with bronchoalevolarlavage (BAL) showing elevated eosinophils of 22%. Patients condition continued to deteriorate requiring continuous oxygen supplementation. He was diagnosed with CEP and was started on prednisone therapy with reported improvement in his symptoms, however, with continued decline in spirometry. A surgical lung biopsy was subsequently performed which showed presence of honeycombing, patient was diagnosed with idiopathic pulmonary fibrosis and started on Pirfenidone therapy and referred to us for a lung transplant evaluation. A review of the case with the multidisciplinary board and repeat evaluation of the pathology showed subpleural fibrosis with changes consistent with organizing pneumonia and small airways disease. With presumed diagnosis of chronic eosinophilic pneumonia, pirfenidone was discontinued and patient was maintained on steroid therapy eventually tapered off with addition mepolizumab. The addition of mepolizumab corresponded with significant improvement and normalization of patients spirometry and diffusion capacity. Patients symptoms resolved and he no longer required continuous oxygen supplementation. Discussion CEP is an inflammatory disease marked by significant eosinophilia and is steroid responsive. However, since the adverse effects of steroid therapy are well described, alternative targeted modalities of treatment need to be explored in patients with both steroid responsive and steroid refractory disease. Interleukin (IL) 5 released by lymphocytes plays an essential role in the pathogenesis of CEP resulting in the accumulation of eosinophils. Mepolizumab is an IL-5 inhibitor resulting in the suppression of eosinophils. The case noted above supports the use of Mepolizumab as a primary steroid sparing therapy in the treatment of CEP.
This abstract is funded by: None

Am J Respir Crit Care Med 2020;201:A1356
Internet address: www.atsjournals.org