

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 757

**Publication Number:** P3150

**Abstract Group:** 5.3. Allergy and Immunology

**Keyword 1:** Asthma - management **Keyword 2:** Asthma - mechanism **Keyword 3:** Allergy

**Title:** Clinical characteristics, airway inflammation, and adipocytokines in overweight and obese asthmatics

Dr. Masanobu 8117 Ishii h13004@mail.goo.ne.jp MD <sup>1</sup>, Dr. Yukari 8118 Miyamoto yukarih@chi.twmu.ac.jp MD <sup>1</sup>, Dr. Katsunori 8119 Ochiai ochiai@chi.twmu.ac.jp MD <sup>1</sup>, Dr. Saori 8120 Kirishi kirishi@chi.twmu.ac.jp MD <sup>1</sup>, Dr. Etsuko 8121 Tagaya etagaya@chi.twmu.ac.jp MD <sup>1</sup>, Dr. Kiyoshi 8122 Takeyama ktake@chi.twmu.ac.jp MD <sup>1</sup> and Prof. Dr Jun 8123 Tamaoki jtamaoki@chi.twmu.ac.jp MD <sup>1</sup>. <sup>1</sup> First Department of Medicine, Tokyo Women's Medical University, Tokyo, Japan, 162-8666 .

**Body:** Rationale: Obesity affects asthma development, severity, and treatment response. Understanding how obesity influences symptoms, QOL and asthma characteristics is thus necessary to optimize management for this phenotype. Methods: 186 adult patients with mild-to-moderate persistent asthma were enrolled in this study, from which 25 patients whose BMI of > 25 kg/m<sup>2</sup> and 25 normal weight patients were randomly selected. Patients completed ACT and underwent comprehensive pulmonary function testing. Blood samples were collected to measure adipocytokines including IL-6, leptin, adiponectin, PAI-1 and TNF- $\alpha$ . Inflammatory cell counts in induced sputum and NO contents in exhaled air were measured. We also assessed the response to 12-week treatment with FBC. Results: Overweight patients were more likely to be women ( $p = 0.026$ ), and had older age of disease onset ( $p = 0.022$ ), lower ACT scores ( $p = 0.045$ ) and lower serum IgE ( $p = 0.042$ ). FRC and ERV were less in overweight patients than in normal weight patients (both  $p < 0.05$ ), but there were no differences in FVC, FEV<sub>1</sub>, TLC and RV between two groups. In overweight patients, IL-6, leptin and PAI-1 levels were lower (each  $p < 0.04$ ), and there were significant positive correlation between plasma leptin concentration and sputum eosinophil number and ECP contents. After the treatment, among asthma-related measures, the responses of FEV<sub>1</sub> and ACT scores were poorer in overweight patients (both  $p < 0.05$ ). Conclusion: Overweight is an important phenotypic determinant in asthma. The increased levels of leptin might play a role in eosinophilic airway inflammation, and the responses to inhaled corticosteroid are attenuated in overweight patients.