

European Respiratory Society Annual Congress 2013

Abstract Number: 503

Publication Number: P4174

Abstract Group: 5.2. Monitoring Airway Disease

Keyword 1: Asthma - diagnosis **Keyword 2:** Asthma - management **Keyword 3:** Smoking

Title: Value of HRCT in assessment of airway wall thickness in uncontrolled asthmatic: Five years follow-up study

Prof. Aliae 4629 Mohamed-Hussein massah_99@yahoo.com and Prof. Samy 4630 Ahmed sabdelaziz@yahoo.com . ¹ Chest Dept., Assiut University Hospitals, Assiut, Egypt, 71111 and ² Radiology, Assiut University Hospitals, Assiut, Egypt, 71111 .

Body: Recently, high resolution CT (HRCT) has been used to indirectly assess airway remodeling in vivo, on the basis of findings such as airway wall thickening. Objectives:1) To assess airway wall thickness by HRCT in uncontrolled asthmatics, 2) to investigate the association between patients characteristics, disease severity and prognosis with airway wall thickness parameters before and after 5 years of follow-up. Subjects and methods:Fifty -two patients with asthma and 23 healthy controls were recruited in the study. We measured airway luminal area (Ai) corrected by body surface area (Ai/BSA), airway wall area (WA) corrected by body surface area (WA/BSA), the percentage of wall area (WA %), absolute wall thickness (T)/BSA, and thickness to diameter ratio (TDR) by HRCT in 2007 and 2012. Spirometric tests were also performed. Results:In uncontrolled asthmatics, Ai/ BSA, WA/BSA, WA%, and T/BSA were all significantly greater than those in controlled and healthy control subjects. No significant difference in airway wall thickness parameters were found between controlled asthmatics and healthy controls. The degree of airway wall thickness increased after 5 years in: older patients, male gender, persistent smokers, irregular users of ICS, and anti- leukotreines and those with lower post- bronchodilator reversibility. Conclusions:Airway wall thickness can be reliably followed by HRCT in uncontrolled asthmatics to assess airway remodeling. Smoking, age, male gender, lack of adherence to anti inflammatory drugs and irreversibility of airflow obstruction may be important factors in determining the airway wall thickness and hence the prognosis in this group of patients.