Title: Characteristics of patients with persistent airflow obstruction from an asthma clinic

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Body: Objectives: To identify differences in clinical, functional and inflammatory characteristics between asthmatic patients with and without persistent airflow obstruction. Methods: 170 patients were recruited from two asthma clinics of the University of Athens. Patients’ demographics, pulmonary function tests, inflammatory cells in induced sputum, bronchial hyperresponsiveness to methacholine (PD15) and treatment were recorded. Persistent airflow obstruction was defined according to the criteria of Kaminska et al. (J All Clin Immunol 2009;124:45-51). Results: 60 patients (35.3%) had persistent airflow obstruction. Besides differences in simple spirometry values, those patients had decreased DLco, lower PD15 and exhaled NO, and higher sputum eosinophil and neutrophil counts. 71.7% of patients with persistent obstruction fulfilled ATS criteria for severe refractory asthma (SRA), in contrast to 4.5% in the group without persistent obstruction. A cluster analysis identified two clinically relevant clusters: Cluster 1 (n=89, not related to persistent airflow obstruction) included patients not receiving high doses of ICS or oral corticosteroids (CS), with higher PD15 to methacholine, no smoking history and no criteria for SRA; Cluster 2 (n=19, related to persistent airflow obstruction) included patients receiving high doses of ICS and oral CS, lower PD15, again no smoking history, but no criteria for SRA. Conclusions: Patients with persistent airflow limitation present different functional and inflammatory characteristics and may be classified in separate clusters.