

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 489

**Publication Number:** P3898

**Abstract Group:** 3.2. Airway Cell Biology and Immunopathology

**Keyword 1:** COPD - mechanism **Keyword 2:** Molecular pathology **Keyword 3:** Inflammation

**Title:** Regulatory T-lymphocytes in peripheral blood of never smoking patients with COPD

Mr. Aliaksei 3683 Kadushkin kadushkyn@gmail.com<sup>1</sup>, Prof. Dr Anatoliy 3684 Tahanovich taganovich@bsmu.by MD<sup>1</sup> and Mrs. Tatiana 3685 Shman shman@oncology.by<sup>2</sup>. <sup>1</sup> Department of Biochemistry, Belarusian State Medical University, Minsk, Belarus and <sup>2</sup> Immunology Laboratory, National Research Center for Pediatric Oncology, Hematology and Immunology, Minsk, Belarus .

**Body:** Background. Regulatory T-lymphocytes (Treg) play an important role in systemic inflammation, however their role in chronic obstructive pulmonary disease (COPD) is uncertain. Objective. The objective of this study was the evaluation of Treg defined as CD4+CD25+CD127- cells in never smoking COPD patients, and their comparison with COPD smokers, asymptomatic smokers and healthy non-smokers. Methods. The analysis of lymphocytes subtypes was performed using three-colour flow cytometry method. We examined 21 non-smokers and 20 smokers with respiratory symptoms and moderate to severe airflow limitation, 20 healthy non-smokers, 21 healthy smokers. Results. The percentage of CD4+CD25+CD127- lymphocytes was significantly higher in non-smoking COPD subjects compared with non-smoking healthy control subjects (median value was 6.0% versus 4.5%, respectively,  $p < 0.05$ ). There was an increase in blood CD4+CD25+CD127- cells in smokers with COPD than in healthy smokers (median value was 7.1% versus 5.4%, respectively,  $p < 0.05$ ). COPD smokers had significantly higher proportion of Treg than non-smokers with COPD ( $p < 0.05$ ). No differences were found between healthy smokers and healthy non-smokers in regard to proportion of Treg. We also observed a significant negative correlation of proportion of Treg and the percentage of CD8+ T-lymphocytes ( $r = -0.47$ ,  $p < 0.05$ ) in non-smoking COPD subjects. Conclusion: The results of this study support the possible role of Treg not related to smoking in the systemic inflammation in COPD. Smoking aggravates changes in the percentage of Treg induced by disease in COPD smokers.