

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 864

**Publication Number:** P3866

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

**Keyword 1:** Asthma - diagnosis **Keyword 2:** Biomarkers **Keyword 3:** Monitoring

**Title:** Use of interleukin-1 $\beta$  (IL-1 $\beta$ ) and interleukin-1 receptor antagonist (IL-1Ra) contents in alveolar macrophages for estimation of inflammation activity in patients with different levels of asthma control

Svetlana 7313 Pospelova sun\_up2002@mail.ru <sup>1</sup>, Prof. Svetlana 7314 Sobchenko ssobchenko@yandex.ru MD <sup>1</sup> and Prof. Vyacheslav 7315 Kravtsov kvyspb@rambler.ru MD <sup>2</sup>. <sup>1</sup> Department of Pulmonology, State Budget Educational Institution for Higher Professional Education "North-Western State Medical University N.a. I.I. Mechnikov" under the Ministry of Healthcare of the Russian Federation, Saint-Petersburg, Russian Federation and <sup>2</sup> General Clinical and Cytology Laboratory, Nikiforov Russian Centre for Emergency and Radiation Medicine, St. Petersburg, Russian Federation, Saint-Petersburg, Russian Federation .

**Body:** The aim of the study was to estimate contents of IL-1 $\beta$  and IL-1Ra and IL-1Ra/ IL-1 $\beta$  ratio in alveolar macrophages of induced sputum in patients with different levels of asthma control according to GINA. 43 patients were included in the study: 10 with uncontrolled asthma, 12 with partially controlled and 21 - with well-controlled asthma. Results of immunocytochemical staining with IL-1 $\beta$  and IL-1Ra monoclonal antibodies of cell centrifugates obtained using liquid-based cytology method were evaluated via Histology Score method (HScore). Contents of IL-1 $\beta$  were 243,8 $\pm$ 9,3, 102,8 $\pm$ 18,7 and 29,4 $\pm$ 6,4 Hscore in patients with uncontrolled, partially controlled and well-controlled asthma, respectively ( $p < 0,05$  in all comparisons). Contents of IL-1Ra were 107,9 $\pm$ 11,9, 75,6 $\pm$ 21,1 and 92,7 $\pm$ 17,1 Hscore in patients with uncontrolled, partially controlled and well-controlled asthma, respectively ( $p > 0,05$ ). IL-1Ra/ IL-1 $\beta$  ratio comprised 0,5 $\pm$ 0,1, 1,8 $\pm$ 1,1 and 6,1 $\pm$ 1,7 in patients with uncontrolled, partially controlled and well-controlled asthma, respectively ( $p < 0,05$  in all comparisons). Our study has revealed statistically significant decrease of content of IL-1 $\beta$  and increase of IL-1Ra/ IL-1 $\beta$  ratio in alveolar macrophages of induced sputum samples as level of asthma control increased. These data indicates that estimation of IL-1 $\beta$  content and calculation of IL-1Ra/ IL-1 $\beta$  ratio can be considered to be impartial index of inflammation activity and used for estimation of inflammation activity in airways of patients with different levels of asthma control.