

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 683

**Publication Number:** P4117

**Abstract Group:** 5.1. Airway Pharmacology and Treatment

**Keyword 1:** Biomarkers **Keyword 2:** Nitric oxide **Keyword 3:** Longitudinal study

**Title:** The dynamics of oxidative stress markers in patients with bronchial asthma (BA) during the course of liposome nanoparticle admission (a randomized placebo-controlled study)

Dr. Alexander 1465 Lisitsa afox03@mail.ru MD <sup>1</sup>, Dr. Igor 9028 Klimanov igorklimanov@yandex.ru MD <sup>2</sup>, Prof. Dr Svetlana 9029 Soodaeva soodaeva@mail.ru MD <sup>2</sup> and Prof. Dr Alexander 9030 Averyanov averyanovav@mail.ru MD <sup>1</sup>. <sup>1</sup> Clinical Trials Dept., Federal Research Clinical Center Under Federal Medical&Biological Agency of Russia, Moscow, Russian Federation, 115682 and <sup>2</sup> Clinical & Experimental Biophysics, Pulmonology Research Institute, Moscow, Russian Federation, 105077 .

**Body:** Background: It's well-known that a number of cells are damaged due to oxidative stress in inflammation processes. The aim of the study was to investigate the dynamics of oxidative stress markers in BA patients during the 24-week course of treatment by the liposome nanoparticle inhalation (LI). Materials and methods: The prospective, single-blind, randomized, placebo controlled, parallel-group study was performed. 58 patients (age 67.5±12.3; male 68.3%) with partly controlled and uncontrolled BA were enrolled (FEV1>50%). Group1 contains 30 patients who received a LI by compressor nebulizer once a day in addition to traditional therapy; group2 - 28 patients who received a traditional therapy only (control). Antioxidant activity was determined by the estimation of the total nitrite/nitrate (TNN) level in exhaled breath condensate (EBC) and in blood plasma before and after the investigation period (measured by Griess method). Results: It was shown the statistically significant decrease of the TNN level both in EBC and blood plasma in group1 compared with control (59.7±38.7 vs 20.1 ±9.2 μmol/l, p=0.01; 56.4.7±37.5 vs 31.6 ±15.3 μmol/l, p<0.03 respectively). The BPAA level statistically significant increased from 1.89±0.8 to 3.57±0.7 units in group 1 while in control group this factor was at the same border (2.1±0.4). Conclusion. It was shown the effectiveness of the inhalation of nanoliposome preparation in complex therapy of the BA patients; that was confirmed by statistical significantly decreasing of the inflammation markers levels compared to placebo.