

European Respiratory Society Annual Congress 2013

Abstract Number: 5286

Publication Number: P4160

Abstract Group: 5.2. Monitoring Airway Disease

Keyword 1: Pneumonia **Keyword 2:** Biomarkers **Keyword 3:** Nitric oxide

Title: Exhaled NO levels – A new tool in decision-making about antibiotic treatment

Dr. Natalja 32431 Voskresenska nataljavoskresenska@gmail.com MD ¹, Dr. Julija 32432 Voicehovska dr.julia.v@gmail.com MD ² and Prof. Dr Grigorij 32433 Orlikov grigorij.orlikovs@stradini.lv MD ³. ¹ Pulmonology Department, Pauls Stradins Clinical University Hospital, Riga, Latvia, LV1002 ; ² Internal Diseases Department, Riga Stradins University, Riga, Latvia, LV1002 and ³ Internal Diseases Department, Riga Stradins University, Riga, Latvia, LV1002 .

Body: Exhaled Nitric oxide (eNO) appears to have a role in the inflammatory process. The pilot data show that there is increased NO production in pneumonia patient, being compared to lung infiltrate of congestion origin. Objective. To measure and monitor eNO in the exhaled breath air in pneumonia patients beyond antibacterial treatment. Materials and methods. Patients with lung infiltrate of inflammatory origin (pneumonia) are involved into the study. Exhaled NO is being processed on the 1-st and on the 10-th and 14-th days from the beginning of the antibiotic treatment. The eNO level was measured by analyzer (Aerocrine). Results. Pilot results concerns 25 clinically confirmed cases of pneumonia. Average baseline eNO was 19.86 ppb ($p < 0.05$). All 7 patients with infectious pneumonia was assigned prolonged antibiotic therapy. After the appropriate antibiotic therapy (7 days) measurement of nitric oxide has been repeated - revealed declines in nitric oxide in 5 patients (from 45 ppb before treatment to 6 ppb after treatment). Clinical improvement was accompanied by a later positive radiological and clinical dynamics (resolution of infiltrates on X-ray, the normalization of the blood test). In 2 patients with infectious pneumonia high levels of nitric oxide maintained (average 30 ppb). These patients course of antibiotic therapy was extended to 14 days. Decrease rate of nitric oxide in these two patients (average 30 ppb before treatment to 6 ppb after treatment, $p < 0.05$). Conclusion. Exhaled Nitric oxide might be helpful to decide about duration of antibiotic therapy. Measurement and monitoring of eNO could be considered as a noninvasive marker, and may be a useful alternative for the assessment of pneumonia.