

European Respiratory Society Annual Congress 2013

Abstract Number: 3834

Publication Number: P4315

Abstract Group: 7.2. Paediatric Asthma and Allergy

Keyword 1: Asthma - management **Keyword 2:** Lung function testing **Keyword 3:** Children

Title: Computer bronchophonography (CBPG) – Method of assessment of respiratory function in asthmatic children

Dr. Svetlana 24817 Shatalina svetlanashatalina@mail.ru , Prof. Natalya 24818 Geppe geppe@mail.ru , Dr. Natalya 24819 Kolosova kolosovan@mail.ru and Mr. Vladimir 24820 Malishev geppe@mail.ru . ¹ University Children's Clinical Hospital, First Moscow State Medical University N.a. I. M. Sechenov, Moscow, Russian Federation ; ² University Children's Clinical Hospital, First Moscow State Medical University N.a. I. M. Sechenov, Moscow, Russian Federation and ³ University Children's Clinical Hospital, First Moscow State Medical University N.a. I. M. Sechenov, Moscow, Russian Federation .

Body: Background: Children with poorly controlled asthma have exacerbations and persistent airflow obstruction despite treatment with ICS and LABAs that requires regular assessment of lung function. Aim: To estimate lung function by CBPG during the first 20 minutes after the inhalation of BUD/FORM versus SABA and LABA in children with bronchial asthma. Materials and methods: 40 patients (age 6- 16 years) with poorly controlled asthma were divided in 2 parallel groups. On Day 1 children in Group 1 inhaled ICS/LABA (bud/form 80/4,5µg), on Day 2 – LABA (form 9µg) and on Day 3 - SABA (salbutamol 200µg). Children in Group 2 inhaled bronchodilators in reverse order: SABA, LABA, ICS/LABA. We evaluated CBPG data before and 20 minutes after inhalation of bronchodilators and compared these with spirometry data. Registration of respiratory sounds was recorded by high sensitivity transducer in wide range of frequencies during quiet breathing. Results: In both groups the results of spirometry were similar. FEV1 after BUD/FORM increased from 82,1%±2,1% to 92%±2,2% ($p \leq 0,002$), after LABA – from 79,1%±2,3% to 87,9%±3,4% ($p \leq 0,013$), after SABA from 72,5%±3,7% to 82,8%±4,6% ($p \leq 0,004$). ACBW decreased in high-frequency zone from 0,35±0,04mcJ to 0,15±0,02mcJ ($p = 0,001$) after BUD/FORM, from 0,33±0,05mcJ to 0,18±0,03mcJ ($p = 0,005$) after LABA, from 0,33±0,04mcJ to 0,15±0,04mcJ ($p = 0,001$) after SABA. Conclusions: The intensity of the acoustic component of breathing in the high frequency zone (ACBW, mcJ) correlated with bronchial obstruction. Due to the combined bronchodilator and anti-inflammatory actions BUD/FORM can treat both bronchoconstriction and inflammation at the early stages of exacerbations.