

**P0149 Basophil activation test in the diagnosis of allergic bronchopulmonary aspergillosis in cystic fibrosis patients**

Yana Kozlova<sup>1</sup>, Ekaterina Frolova<sup>1</sup>, Aleksandra Uchevatkina<sup>1</sup>, Larisa Fillipova<sup>1</sup>, Yuliya Borzova<sup>1</sup>, Oleg Aak<sup>1</sup>, Makhmutova Victoria<sup>2</sup>, Tatyana Stepanenko<sup>3</sup>, Burygina Ekaterina<sup>1</sup>, Ivanova Lidia<sup>1</sup>, Valeriy Kuznetsov<sup>1</sup>, Natalya Vasilyeva<sup>1</sup>, Nikolai Klimko\*<sup>1</sup>

<sup>1</sup> North-Western State Medical University n.a. I.I. Mechnikov, Russian Federation, <sup>2</sup> City General Hospital №2, St. Petersburg, Russian Federation, <sup>3</sup> Head of Department, City General Hospital №2, St. Petersburg, Russian Federation

**Background:** *Aspergillus fumigatus* colonization in cystic fibrosis (CF) patients can cause sensitization to *A.fumigatus* and/or allergic bronchopulmonary aspergillosis (ABPA), which significantly worsens the course of the underlying disease. Currently new diagnostic tests that can detect fungal sensitization in this category of patients are searched. The aim: to study the possibility of applying the basophil activation test (BAT) with *Aspergillus fumigatus* allergens in vitro using flow cytometry for identification of fungal sensitization in CF patients

**Materials/methods:** In prospective study included 10 CF patients with ABPA between 10 and 21 years old (median age – 17), males – 6, females – 4. The control group included 10 CF patients without ABPA between 23 and 29 years old (median age – 26), males – 7, females – 3. All patients underwent allergy (total IgE level and specific IgE to fungal allergens in serum) and mycology (microscopy and culture of BAL or sputum) examinations. Chest CT scan was performed. BAT with *Aspergillus fumigatus* allergens ("AlcorBio", Russia) was performed in all patients. Diagnostic criteria of ABPA 2003 [Stevens et al] were used.

**Results:** CF patients with ABPA had higher levels of total IgE and specific IgE to *Aspergillus*, and number of peripheral blood eosinophils. In blood of CF patients with ABPA were identified from 6.2 to 94.1% of basophils activated by *A.fumigatus* allergen, the stimulation index (SI) ranged from 3.9 to 39.4. In the control group, the SI did not exceed 1.5. Direct positive correlation between the number of basophils activated by *A. fumigatus* allergens and the level of sIgE to *A. fumigatus* ( $r=0,95$ ;  $p<0,05$ ) was established.

**Conclusions:** In all patients with ABPA BAT confirmed sensitization to *Aspergillus fumigatus*. BAT is a perspective method for diagnostic algorithm of fungal allergy.

