

BUKOVINIAN STATE  
MEDICAL UNIVERSITY

# BIMCO JOURNAL

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ABSTRACTS BOOK

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Педіатрія

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Pediatrics

Arora G.

## **COMPARATIVE ANALYSIS OF THE ASTHMA PHENOTYPES WITH AND WITHOUT EXERCISE INDUCED BRONCHOCONSTRICTION IN SCHOOL AGE CHILDREN (RESULTS OF CLUSTER ANALYSIS)**

Bukovinian State Medical University, Chernivtsi, Ukraine  
Department of Pediatrics and children infectious diseases  
(scientific advisor - Ph.D. Bogutska N.)

Well known association between bronchial asthma (BA) and exercise induced bronchoconstriction (EIB) was revealed long ago, but the exact mechanisms of this association are not fully defined.

Patients with persistent moderate and severe BA were included in alternative clinical groups: in particular, 30 children with EIB BA phenotype and 30 patients without EIB BA were examined. EIB was diagnosed in case of the presence of bronchospasm after exercise in the patient's history and spirometric index of bronchospasm after a dosed physical activity of at least 15%. According to the main characteristics (sex, age and place of residence) the groups were comparable. Hierarchical probabilistic approach and cluster analysis (CA) with the K-means method were used for statistical analysis.

While analyzing the clinical and paraclinical characteristics of the phenotypes of BA with and without EIB in school-age children, it was found that a severe variant of the disease, allergic burden only after father's pedigree, the total number of points of clinical manifestations of exacerbation of BA higher than 15 before treatment, complaints of chest tightness during the last exacerbation, higher than 4% eosinophil count and more than 1.0 G/l absolute T lymphocyte content in the peripheral blood, and the need for constant use of short-acting beta-agonists in the remission period statistically significantly increased the chances of diagnosing BA with EIB. The bronchial lability index more than 25% most significantly increased the chances of detecting the BA phenotype with EIB, this diagnostic marker was characterized by significant reproducibility and validity (80%), while bronchial nonspecific hyperresponsiveness test to histamine (PC20H) of inhalation less than 0.8 mg/ml histamine concentration, which caused 20% FEV1 fall, also most significantly increased the chances of diagnosing of BA with EIB in children of school age. CA of a whole cohort of patients indicated a significant clinical similarity of BA phenotypes with and without EIB in children, because the first and second clusters were formed of 56% and 44% and 43% and 57% of children with phenotypes with and without EIB correspondingly.

Thus, the results of CA of the cohort of pediatric patients with alternative phenotypes of the disease due to exercise induced bronchoconstriction showed a significant similarity between two clinical subclusters and the difference existed mainly due to markers of atopic reactivity.

Brar J.

## **ANXIETY, ALEXITHYMIA AND ATTITUDE TO THE DISEASE IN CHILDREN WITH SEVERE BRONCHIAL ASTHMA**

Bukovinian State Medical University, Chernivtsi, Ukraine  
Department of Pediatrics and children infectious diseases  
(scientific advisor - Ph.D. Bogutska N.)

The study of psychological characteristics of the children with bronchial asthma (BA) is extremely relevant in determining the severity of the course of the disease. The purpose of the study was to examine associations between BA severity and personal psychological characteristics.

Levels of state (SA), trait (TA) and school anxiety (ScA) with self-reported State Trait Anxiety Inventory (Spielberger and Hanin), School Anxiety Inventory (Phillips) were examined, a Bekhterev institute personality questionnaire (LOBI) was used in order to diagnose the types of attitudes to BA, an adapted Toronto Alexithymia Scale (by G. Taylor) was used to detect alexithymia. The first clinical group was formed by 32 children with severe BA, and the II group of comparison included 30 children with moderate BA (GINA).

High TA scores were observed in 26.6±1.7% of patients with severe BA versus 9.1±6.1% of children in control group (OR=4.0; 95%CI:0.75-21.2). High SA scores were revealed in 25±8.2% versus 22.7±8.3% of patients with severe and non-severe BA correspondingly ( $p>0.05$ ). The patients' TA levels were associated with more severe children's fears ( $r=0.3$ ;  $p<0.03$ ) and the presence of early warning signs of the BA attack ( $r=0.3$ ;  $p<0.04$ ). The experience of child's social stress was associated with night attacks ( $r = 0.27$ ;  $p <0.04$ ). The higher level of ScA correlated with a child's negative attitude to the need of daily medicines use ( $r=0.3$ ;  $p<0.03$ ) and higher scores of the bronchial lability ( $r=0.36$ ;  $p<0.01$ ). The high level of SA was a predictor of the lower efficacy of control treatment with inhaled corticosteroids ( $r=-0.6$ ;  $p<0.02$ ). The mean scores of the Toronto Alexithymia Scale were 71.2±2.1 versus 70.3±2.7 in groups of comparison ( $p>0.05$ ), however, the presence of alexithymia correlated with the number of asthma attacks per year ( $r=0.36$ ;  $p<0.05$ ), the negative attitude toward hospitalization ( $r=0.37$ ;  $p<0.04$ ) and the need of daily intake of drugs ( $r=0.26$ ;  $p<0.05$ ). The neurasthenic and / or sensitized type of attitude to the disease was more often noted in children with severe asthma (OR=5.3; 95% CI:1.3-24.7), and euphoric / anosognosic types of attitudes were associated with lower levels of disease control and non-compliance to basic therapy.

Thus, there was a tendency to higher TA, ScA and presence of the neurasthenic and / or sensitized type of attitude to the disease in children with severe BA.