imunological studies. Complex of im-
munological investigations comprised determi-
nation in dynamics of the level of antibodies
IgD, IgM to Chlamydia pneumoniae and
Mycoplasma pneumoniae.

Results: Obtained data have shown much
higher incidence of increased antibodies of
IgD and IgM classes in patients with
uncontrollable BA course (47.5% and
37.5% versus 30.0% and 22.5%, respec-
tively). On the basis of obtained results,
correction of therapeutic complex has been
conducted. In positive acute tests
(increased IgM to Chlamydia pneumoniae),
a 14-day course of treatment with antibiot-
cics of the macrolide group (Clarithromycin,
Spiramycin) was included into the basic
therapy. Antibacterial 7-day treatment with
a preparation of the same group was
repeated in 3-4 weeks after the course of
treatment. Therapeutic benefits were esti-
imated by the degree of achieved controlla-
bility of the disease with the use of
classical 5-score scale of the asthma-control
test. Positive dynamics of the indices of
disease controllability was achieved within
the 1st month of treatment. It has become
more considerable by the end of 1.5 month,
remained unaltered and improved during
the entire period of surveillance (3 months).
Terms of response to the ther-
apy were different for each of the indices,
at that night time symptoms of bronchial
asthma regressed most readily.

Conclusions: Obtained results allowed
determine interrelations between the Chla-
mydia pneumoniae infection and BA con-
trollability. Treatment of a concomitant
infection made it possible in as short as
6 weeks to achieve controllability of the
disease in the majority of patients with the
infection under study.

1153

Intervention to support adherence to
asthma self-management in children with
asthma

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Objective: To evaluate the importance of
educational interventions on adherence to
asthma self-management in children.

Methods: Randomised, controlled clinical
study performed by the Regional of antibodies
children with asthma. Forty-two children
with persistent asthma (age 9.2 ± 3.1 years; 28 boys) received a writ-
ten asthma plan and instruction on elec-
tronic PEF home-monitoring. The study
group received one-to-one educational
intervention on asthma self-management
delivered by Centre personnel. Adherence
to PEF home-monitoring was assessed
using Piko-1 devices and data were down-
loaded at each of the three monthly visits.

Results: There were no significant differ-
ences on the use of PEF-meters at home
during the first month between the inter-
vention group and the control group. Nev-
evertheless, at 3 months, the intervention
group presented a two-fold better adher-
ence than the controls. Overall, adherence
to home PEF monitoring in intervention
group was below the targeted adherence
(i.e. 61% versus 80%). Children in either
group who were less than 33% adherent to
PEF-monitoring were significantly prone to
asthma symptoms. Asthma exacerbations
were less likely in the intervention group
(0.92 versus 1.3, P = 0.0014).

Conclusion: Our data support the positive
impact of educational interventions on
adherence to asthma self-monitoring in
children.

1154

Sensitisation to pollen allergens in asth-
matic children

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Background: Allergy is one of the most
common causes of respiratory symptoms in
children and youth. Asthma is a common
problem in children and the causative pol-
len allergens vary according to the geo-
 graphical area.

Objective: The purpose of this study was
to evaluate the prevalence of atopy, and to
identify the frequency of allergic sensitiza-
tion to pollen allergens, among children who
have asthma, from Jaén (Spain).

Methods: A total of 407 consecutive chil-
dren, younger than 14 year old, 261 male
and 146 female, were recruited from our
outpatient allergy clinic of a general hospital
from Jaén. Patients were arbitrarily
divided into three groups (grs) according
to their age: group 1 = younger than
3 year old (63 patients), group 2 = 4–6
years (148 patients), and group 3 = 7–14
years (196 patients). Skin prick testing
was performed to relevant individual aero-
allergens (Lolium perenne, Cynodon dac-
ty-
lom, Cupressus arizonica, Platana
acerifolia, Olea europaea, Chenopodiu
album, Salsola kali, Plantago lanceolata,
Artemisia vulgaris and Parietaria judaica).
Testing for dust mites, cats, dogs, cock-
roach and molds were performed also.

Results: The prevalence of atopy at the
whole sample was of 94.58% (385
patients). 167 of atopic children (43.37%)
showed a positive skin test, only to at least
one of tested pollens. The most common
allergens were Olea europaea (93.5%), fol-
lowed by: Loli um perenne (60.5%) Che-
nonodium (52.2%) and Plantago (43.6%).
The percentage of allergic patients to pol-
len increased with age for all tested aller-
gens, but the differences were not signifi-
cative, except for sensitized to Loli-
um perenne (P = 0.03). Only 30 children
were monosensitized to Olea europaea.

Conclusions: In children with bronchial
asthma from Jaén (Spain), the pollens are
the most frequent cause of respiratory
allergy, Olea europaea is the pollen which
sensitizes more children in our geographical
area.

1155

Results of a school-based asthma assess-
ment from the upKids questionnaire vali-
dation study

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Background: There is a need for simple
reliable tools to assess allergic asthma in
children. In this work, we compare the
parents responses of the upKids-asthma
questionnaire with objective measures used
in daily practice.

Participants and methods: The study sam-
ple was formed by 173 Portuguese school-
children aged 8 to 12 from the urban area
of Porto (51.4% girls). Children’s parents
completed a self-administered question-
naire reporting asthma, physician diagnosis
of asthma and asthma medication. The
questionnaire was based on ISAAC ques-
tionnaire and was developed for assessing
allergic asthma in schoolchildren. Skin
prick tests (SPT) to common aeroallergens
and measurement of exhaled nitric oxide
(FeNO) using NIOX MINO (Aerocrine,
Sweden) were performed. We defined two
groups in the validation analysis: 1) ato-
ics (positive SPT) with FeNO ≥ 25 ppb and
2) all the others.

Results: Twelve percent and 15% of the
parents reported physician diagnosis of
asthma and asthma medication use in the
previous year, respectively, however no dif-
fences in FeNO were observed between
subjects reporting doctor diagnosis or ever
having had asthma. FeNO was signifi-
cantly increased in atopes (mean ± SD
ppb) (34 ± 27 versus 13 ± 8; P < 0.001),
carried ever had wheezing (27 ± 25
versus 17 ± 15; P = 0.002), wheezing
with exercise in the last 12 months
(34 ± 28 versus 19 ± 19; P = 0.005), and

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in children using asthma medication in the last 12 months (31 ± 24 vs 19 ± 15; P = 0.01). All the questions had low sensitivity, from 16% (ever had asthma) to 73% (ever had wheezing). The questions specificity ranged between 60% (ever had wheezing) and 88% (physician diagnosis of asthma and wheezing with exercise in the last 12 months). Computing a score with three questions (ever had asthma, ever had wheezing and wheezing with exercise in the last 12 months) no differences were observed.

Conclusions: FeNO values were significantly increased in atopics, children ever had wheezing or wheezing with exercise and who did asthma medication in the previous year. Parents’ individual answers had poor ability to identify atopic children with high FeNO values. Questionnaires and objective measures may complement each other in this assessment.

**1156**
**Omalizumab in adolescents with persistent allergic asthma**

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**Background:** This open-label study analyzed the first 1-year experience of anti-IgE-treatment in childhood asthma in Russia.

**Methods:** Efficacy and tolerability of omalizumab in 15 adolescents (12–17 years; 8 males) with severe persistent allergic asthma inadequately controlled on high-dose inhaled corticosteroids has been established. Omalizumab (225–375 mg) was administered subcutaneously once every 2 or 4 weeks. Dose was individualized for each patient based on the body weight and total serum IgE level at the first visit.

**Results:** Omalizumab significantly reduced the rate of severe asthma exacerbation by 65% and the rate of hospitalisation by 78% after 6 months of treatment. Omalizumab significantly improved asthma-related quality of life and asthma symptom scores. In two of 3 of patients achieved a ≥50% reduction in inhaled corticosteroids dose. Fluticasone dose reduction to ≤500 µg/day occurred in 1/5 patients. No serious adverse events on omalizumab was shown. The tolerability of anti-IgE-treatment was good in all adolescents.

**Conclusions:** Omalizumab treatment improves asthma control in severely young allergic asthmatics, reduces the rate of clinically significant exacerbations and asthma-related hospitalisations, and reduces inhaled corticosteroids and rescue medication requirements. Omalizumab is effective and should be considered as add-on therapy for adolescents with inadequately controlled severe persistent asthma despite therapy with high-dose inhaled corticosteroids.

**1157**
**Association between body mass index and bronchial hyperresponsiveness in children**

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**Aim:** We intend to evaluate relationship between body mass index (BMI) and bronchial hyperresponsiveness (BHR) degree in children with bronchial asthma.

**Material and methods:** Retrospective study performed at the Department for asthma and allergic diseases at the Institute. This study involved 220 children with asthmatic diseases, at the age of 7 to 15 years (approximately 9.8 years); 149 male and 89 female. BMI was calculated as weight/height² (kg/m²).

In all children BHR degree was detected with broncho-provocation test with PD20 histamine chloride: I. children with manifested mild BHR degree who reacted on PD20–2000 µg histamine chloride; 2. children with moderate BHR degree with reaction on PD20–500 µg histamine chloride; 3. children with intensive BHR degree reaction on PD20–125 µg histamine chloride.

**Results:** Our patients were divided in three groups: I. BMI < 20 in 93 (40.6%) children; II. BMI = 20–24 in 88 (38.4%); III. BMI ≥ 24 in 48 (20.9%). We had results as follows: I. group: 6.7% children with BHR mild degree, 39% with moderate degree = 39% and with intensive BHR degree = 49.5%; in second group P = 13.6% with mild, 36.6% with moderate and 51.1% with intensive BHR degree; in third group P = 12.5% children were with mild, 37.5% with moderate and 50% with intensive BHR degree.

**Conclusion:** We had no confirmed difference in all three groups of our patients, association between BMI and BHR was not verified, respectively.

**1158**
**Translation and adaptation of a pediatric asthma quality of life questionnaire into Macedonian – a pilot study**

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**Background:** Quality of life in children with asthma correlates closely and is a result of the diseases control. Pediatric Asthma Quality of Life Questionnaire-PAQLQ by Juniper has been developed to measure asthma specific quality of life in children. The aim of the study was to translate and adapt the PAQLQ into Macedonian.

**Methods:** The investigation included 15 asthma children aged between 7–17 years, with Macedonian as a native language. PAQLQ self/interviewer-administered forms were translated into Macedonian by Mapi research institute. Lyon, France. 10 children completed the interviewer-administered form, 5 of them aged 10 years and older completed the self-administered form too, and 5 children only the self-administered form.

**Results:** The younger age group completed the questionnaire in 15 min, and the older one in 10 min. Generally, the questionnaire was clear and easy to understand, and children didn’t have difficulties in selecting answers at the response scale. Three children added ‘dancing in folklore group’ into the offered activities. The word ‘irritated’ most of the children changed into ‘nervous’, and ‘different’ into ‘other’.

**Conclusion:** The Macedonian version of the PAQLQ was acceptable with a few changes which were implemented in the questionnaire by MAPI. Validation of PAQLQ in The Republic of Macedonia is in progress.

**Key words:** Pediatric asthma, quality of life, questionnaire.

**1159**
**Predicting short term response to anti-inflammatory therapy in children with pre-school asthma**

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**Background:** Currently available anti-inflammatory therapy for first line therapy in pre-school asthma includes inhaled corticosteroids (ICS) and the leukotriene receptor antagonist (LTRA) montelukast.