Conclusions Blood eosinophils and IgE levels may be regarded more as global predictors but FEV1 and FeNO may be considered more accurate predictors in risk assessment of future adverse events.

670 EXHALED NITRIC OXIDE AS A PREDICTOR FOR EXACERBATION IN CHILDHOOD ASTHMA - IS IT USEFUL?

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Background and Aims Currently, the asthma control is based on symptoms and lung function indices. The inflammatory markers like exhaled nitric oxide (FeNO) may provide additional data for asthma management. We aimed to correlate the FeNO levels with asthma exacerbations in children admitted to our pediatric department.

Methods 104 children (57 boys), aged 5 to 11, were enrolled to our 12 month survey. The monthly follow up visits comprised in clinical exam, childhood asthma control test (C-ACT), spirometry and FeNO measurement (NioxMino, Sweden). The analysis was done using the chi squared test.

Results 66 children experienced a total of 114 exacerbations during the survey. Only 23 exacerbations were associated with positive FeNO values (over 25 ppb), compared to 67 C-ACT positive: p = 0.000; OR = 0.17 (0.09–0.31); 44 spirometry positive: p = 0.001; OR = 0.40 (0.22–0.72) and 34 clinical positive findings: p = 0.04; OR = 0.59 (0.32–1.09). 21 of the positive FeNO cases (91%) had high FeNO, compared to 230 children without exacerbations, compared to “classical tools”. High values may be useful as a predictor, but the sensitivity and specificity are still uncertain.

Conclusions Exhaled nitric oxide poorly correlates with asthma exacerbations, compared to “classical tools”. High values may be useful as a predictor, but the sensitivity and specificity are still uncertain.

671 EXHALED NITRIC OXIDE AND PULMONARY FUNCTION IN CHILDREN WITH ALLERGIC ASTHMA

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Background and Aims Nitric oxide (NO) is a marker of eosinophilic inflammation in airways and can be measured in exhaled air. Fractional exhaled nitric oxide (FeNO) is elevated in allergic asthma. Children with asthma and normal spirometry (FEV1%) can have an inflammation of airways. Inhaled steroid therapy decreases FeNO levels. The aims of this study is to analyze the values of FeNO and FEV1% in children with allergic asthma (steroid naïve and undertaking inhaled steroid therapy).

Methods Thirty steroid naïve children with asthma, aged 5–15 years (<10 years n=20, >10 years n=10) and thirty children with asthma, undertaking inhaled steroid therapy longer than 1 month, aged 5–15 years (<10 years 18, >10 years 12), were included. Recent respiratory infections were negative in all groups. On line technique was used. Spirometry was performed in measuring FeNO using a cheiloiluminescent analyzer Niox, Aerocrine-Sweden, according to ERS/ATS recommendations. Spirometry was performed by standardized procedure.

Results FeNO levels were significantly higher (Kruskal-Wallis test) in steroid naïve group (C=47.45) versus undertaking therapy group (C=11.15). Significant difference between these groups (Mann-Whitney test) was confirmed (Z = 6.56, p = 0.0001). 98% children in steroid naïve group had normal spirometry (FEV1% ≥80%). Significant difference in FEV1% (Mann-Whitney test), between steroid naïve and undertaking therapy group, was found (Z = −3.86; p = 0.0001).

Conclusions Steroid naïve children with asthma had significant higher values of FeNO vs children undertaking inhaled steroid therapy. Significant difference in FEV1% was found in these two groups. In our study, steroid naïve children with asthma and normal FEV1% had eosinophilic inflammation in airways.