Methods Spirometry measurements were performed and DLCO was measured. The final data analysis was conducted on 57 diabetic (mean age 14.4 ± 3.09 years, 31 males) and 40 healthy controls (mean age 13.6 ± 2.2 years, 19 males).

Results Although FVC, FEV1, FEV1/FVC of diabetics were lower than in control, significant statistical analysis was found only for FEF25–75. Statistically significant differences between diabetic and control girls was noted with lower FEV1, lower FEV1/FVC, lower FEF25–75 and reduced DLCO/VA values in diabetic girls. Almost no correlation was found for diabetes duration, HbA1c, HRV indices and pulmonary function variables.

Conclusions In conclusion, the results of our study indicate subclinical lung impairment in children with T1DM, with significantly reduced FEF25–75 compared to control subjects, indicating early small airway obstructive pattern. In this study, statistically significant differences between diabetic and control girls was noted, suggesting obstructive airway disease, according to the spirometric evaluation, but restrictive derangement indicated by reduced DLCO/VA. Since total lung capacity was not measured in our study, we can not talk about a restrictive pattern according to reduced DLCO/VA, but gender appeared a significant determinant for pulmonary dysfunction.

Background Gastroesophageal acidity (GE pH) could be related to lung function and airway response to exercise in children with lower airways disease.

Aims To compare GE pH with lung function before and after exercise in asthmatic and non-asthmatic outpatients with recurrent respiratory symptoms.

Methods 16 asthmatic and 15 non-asthmatic patients (aged 4.5–15.7 yr; M/F 23/8) did lung function before and after 24-h GE pH monitoring (GE pH24). Subjects also undergone exercise-testing 5–15.7 yr; M/F 23/8) did lung function before and after 24-h GE pH monitoring (GE pH24). Subjects also undergone exercise-testing (treadmill) 1 hour before GE catheter removal. GE pH was also analysed for 6-minute intervals each (before, during and after exercise).

Results GE pH24 levels did not correlate with exercise outcomes, nor yielded statistical differences between patient groups. Instead, GE pH24 correlated positively with baseline FEV1, % in asthmatic patients (r=0.66, p=0.006) whereas correlated negatively in non-asthmatic subjects (r=–0.61, p=0.016). Median (interquartile range, IQR) values of GE pH fall during exercise in asthmatic but not in non-asthmatic children (r=–0.64, IQR:10.2 vs 0.00, IQR:5.64, p=0.033). Conversely, GE pH values increased 1 hour after exercise only in asthmatic children (5.80, IQR:7.75 vs 0.00, IQR:9.82, p=0.012).

Conclusion Our data suggest a characteristic relationship between GE pH, lung function and airway response to exercise in asthmatic children; whether GE pH is cause or consequence of these bronchial changes remains to be established.

Background Spirometry and biomarkers such as immunoglobulin E (IgE) levels, fractional exhaled nitric oxide concentration (FeNO) have been proposed for assessing the risk of future adverse events in Expert Panel Report 3 (US National Asthma Education and Prevention Program).

Objectives Evaluating the interrelationship between spirometry parameters and/or biomarkers levels (IgE, FeNO, blood eosinophils percentage) and specific symptoms in asthmatic children between hospitalization episodes.

Material and Methods 40 asthmatic patients were evaluated performing spirometry and measuring biological parameters (IgE levels, blood eosinophils, Fe NO). Symptoms like cough, dispnoea, wheezing described in patients diaries were analysed in correlation with the spirometric and biological parameters using t-Test, Mann-Whitney test, Pearson correlations. For each symptom analysed, every time two groups have emerged (with symptoms or without symptoms).

Results Blood eosinophils were different for each symptom, p<0.05 comparing each time the groups. The tendency for positive correlations p=0.08 was noticed between FeNO and FEV1 (force expired vital capacity). Positive correlations, p<0.05 were found between studied parameters, most of the time in the same group (either the group with symptoms or the group without symptoms).