



POSTER DISCUSSION PRESENTATION

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PD49 - Induced sputum versus exhaled nitric oxide for the evaluation of airway inflammation in allergic pediatric asthma patients treated with omalizumab

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Purpose

To determine the inflammatory changes in the airways of allergic pediatric asthma patients treated with omalizumab, measured by the percentage of eosinophil in induced sputum and exhaled nitric oxide.

Methods

From 2006 to 2012, 31 patients with asthma were treated with omalizumab (15 male -51.6%; 16 females -48.4%). Age ranged between 6 -18 years. The dose of omalizumab was calculated according to the dosing table of the company. Omalizumab was administered subcutaneously in the hospital.

Protocol

Baseline analysis from every patient: Total IgE concentration, specific IgE against the relevant allergen, the percentage of eosinophils in a smear of induced sputum and the exhaled fraction of nitric oxide (NO). Induced sputum and NO were measured at the end of follow-up. Data are shown as mean (SEM). A Student t-test for paired data was used for comparison.

Results

Follow-up of patients was not uniform, ranging from 2-6 years. Total IgE concentration at entry: 668.89 (117.79) IU/mL; Specific IgE against the major antigen at entry: 42.15 (7.32) IU/mL; (22 house dust mite; 7 alternaria; 2 cladosporium). Initial and end induced sputum: 6.26

(2.03)% vs 2.47 (0.36)% ; ($p < 0.05$). Initial and end NO values: 19.04 (1.98) ppb vs 18.10 (2.11) ppb ($p = \text{NS}$). Three patients were excluded from the evaluation due to exaggerated values in final NO measurement that preceded a severe exacerbation.

Conclusions

Omalizumab allowed a statistically significant decrease in the percentage of eosinophils in induced sputum of this cohort of patients. Although very sensible, NO is a less reproducible and thus less reliable method to evaluate chronic airway inflammation in a pediatric allergic population with uncontrolled severe asthma. Induced sputum seems to be a better method to monitor chronic inflammation and thus the response to chronic omalizumab treatment while NO measurement would be more useful to monitor acute events preceding exacerbations.

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