1153 The Efficacy of Medic-Ai™ in Patients with Dust Mite Allergy

Z. M. Sthoeger[1], D. Elbirt[1], S. Kivity[2]; [1]Kaplan Medical Center, Rehovot, ISRAEL, [2]Sourasky Medical Center, for the Israeli Medic-Air™ study group, Tel-Aviv, ISRAEL.

RATIONALE: Environmental control is highly recommended to patients with Indoor allergy. We studied the clinical value of a new devise, Medic-Air™ (Sharp Co.), designed for neutralizing indoor allergens.

METHODS: Thirty patients (age 35.0±12.1years) with allergic rhinitis (A.R), and 10 (age 38.2±6.5 years) with bronchial asthma (B.A.) with Mite allergy were studied. After initial 2 weeks run-in period the patients turned on the Medic-Air™ at the bed site for at least 8 hours of the subsequent 4 weeks followed by 2 weeks of follow up. Both groups recorded symptom score. Patients with B.A. recorded twice daily peak expiratory flow rates (PEFR). All patients were examined 4 times during the study by one of the investigators.

RESULTS: Medic-Air™ usage improved symptoms in 83.3% (25/30) of the patients with A.R, as reported by physicians and patients.

A significant reduction was seen in nasal stuffiness, secretion and itch, cough, sneeze, conjuctival itch and eye redness ($p<0.05$).

The mean score of improvement was 5.1±3.2 (from 0-10 scale). A score improvement greater the 5 was observed in 63% (19/30) of the patients. Patients with B.A had a significant improvement ($p<0.05$) in dyspnea, wheezing, and the need to avoid house dust. There was a significant improvement ($p=0.0137$) in mean PEFR at the end of the treatment period compared to the observation phase.

CONCLUSIONS: Short-term usage of Medic-Air™ resulted in a significant clinical improvement of both A.R and B.A in mite allergic sufferers. Further controlled studies are needed to elucidate the value of this device in the treatment of allergic respiratory disorders.

Funding: Ralco (Sharp) Co. Israel

1154 Identifying Domestic Aeroallergen Exposure in a Cystic Fibrosis Patient: A Case Study

J. K. Sercombe[1], D. Liu-Brennan[1], B. J. Green[2], E. R. Tovey[1]; [1]Woolcock Institute of Medical Research, Sydney NSW, AUSTRALIA, [2]Health Effects Laboratory Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV.

RATIONALE: Cystic fibrosis patients often show sensitization to common indoor allergens, including fungi. Allergen exposure can exacerbate respiratory symptoms, including asthma.

METHODS: A 12 year old female patient with cystic fibrosis and asthma, and past ABPA, experienced asthma exacerbations at home. The patient tested positive by SPT to Der p 1, cat, and several fungal allergens. Airborne fungal exposure at home was suspected. IOM inhalable fraction air samplers were used in the home for 6 hours, staggered over a 24 hour period. Samples were cultured for fungal identification and viable counts. Samples were also immunostained for binding with the patient's serum IgE and with specific monoclonal antibodies (mAb), using the Halogen immunoassay (HIA).

RESULTS: Viable counts reported 39 and 60 fungal CFUs in the bedroom and living room, respectively, from the 6-hour inhalable fraction air sample. Using HIA, 60 and 46 fungal conidia collected in the bedroom and living room, respectively, were seen to bind the patient's IgE. Similarly, IgE reactive hyphal counts were 6 and 8, whereas other antigenic particles were 176 and 214. Specific mAb HIAs showed 4056 (bedroom) and 3900 (living room) Fel d 1 particles, and 520 (bedroom) and 4660 (living room) Der p 1 particles.

CONCLUSIONS: Using the HIA, we were able to determine what proportion of the airborne allergens in a home were contributed by fungal conidia and hyphae. In this case, the bulk of aeroallergen binding patient IgE was due to non-fungal sources. However, due to their viability, airborne fungal conidia may present greater potential allergen sources.

Funding: National Health and Medical Research Council, Australia

1155 Faecal Eosinophilic Protein X (f-EPX), Atopic Dermatitis, Sensitisation and Gastrointestinal Permeability in Infants Aged 3-6 Months

C. Peterson[1], T. Hansson[1], E. Hadley[2], C. Chaloner[3], A. Woodcock[2], A. Custovic[2], C. Gore[2]; [1]Gastrointestinal Research, Pharmacia Diagnostics, Uppsala, SWEDEN, [2]North West Lung Research Centre, Manchester, UNITED KINGDOM, [3]Department of Biochemistry, Booth Hall Children's Hospital, Manchester, UNITED KINGDOM.

RATIONALE: Gastrointestinal (GI) inflammation has been implicated as a contributing factor in atopic dermatitis (AD) and has been reported in children with food allergies and AD. The role of faecal EPX in investigating and monitoring gastrointestinal inflammation associated with AD was studied.

METHODS: Infants aged 3-6 months enrolled: AD-severity scored (SCORAD-Index), serum specific IgE, gastrointestinal permeability (Lactulose/Mannitol test) measured. Stool samples were collected from 239 infants (n=203 AD, n=36 healthy); extracts for f-EPX analysis were prepared as previously described (Peterson et al. 2002). Faecal-EPX was measured by UniCAP® (Pharmacia Diagnostics AB, Sweden). Data were log-transformed, results presented as geometric mean (GM) with 95% confidence intervals (95%CI).

RESULTS: F-EPX levels significantly higher in infants with AD compared to healthy controls (GM 2506 ng/g [2146-2926] vs. 1635 ng/g [1193-2241]; $p=0.032$). F-EPX did not correlate with AD-severity (SCORAD-score). Sensitisation to food allergens was significantly associated with higher f-EPX levels (Sensitised 3200ng/g [1960-6463] vs. not sensitised 2050 ng/g [914-4725], $p=0.021$) and specific IgE levels to egg allergen correlated with f-EPX levels ($R=0.26$; $p=0.005$). Infants (AD or healthy) with normal gastrointestinal permeability had significantly lower f-EPX levels compared to those with increased permeability (normal permeability: 1252 ng/g [775-2034] vs. increased permeability 2409 ng/g [1305-5570]; $p=0.012$).

CONCLUSIONS: Faecal EPX is high in infants with AD, sensitised infants and in infants with increased gastrointestinal permeability. This suggests increased eosinophilic inflammation in the gastrointestinal tract. F-EPX may be useful in monitoring the progression of gastrointestinal inflammation in these infants and further our understanding of underlying pathophysiological processes.

Funding: Nestec, Pharmacia