European Paediatric Allergy and Clinical Immunology Working Group—WGPACI

Abstracts for Oral Presentations

240 IgE REGULATION BY T CELL DERIVED FACTORS.

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ConA and Histamine activated T cells and their crude sups were assayed for suppressive activity on IgE producing U-266 cell line.Detectable and comparable degree of suppression was obtained using either the co-culture or the supernatant protocols.Separation of the effector population into T4+ and T8+ subsets showed the most effective cells being in the T8+ fraction.Control experiments demonstrated that the IgE down regulation was select since no impairement of a non-immunoglobulin protein such as beta2 microglobulin occurred in the presence of T cell or T cell derived factors. In addition, a number of HTLV I transformed T cell lines were explored for capacity of producing factors able to suppress IgE synthesis in the U-266 cell line and 4 out of 25 cell lines tested could be shown to do this in a constitutive manner. Kinetic studies suggest the inhibition occurring at a transcriptional level.
The data indicate the T cell-myeloma system as an interesting model to better define regulation of IgE in Humans.

241 A PROSPECTIVE STUDY ON HYPOSENSITIZATION WITH DERMATOPHAGOIDES PTERONYSSINUS (D.PT.) EXTRACTS PREPARED FROM WHOLE MITE CULTURE AND MITE BODIES.

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Immunotherapy with inhalant allergen extracts in allergic asthma is still under debate. In order to study its immunological efficacy, 24 asthmatic children sensitive to D.pt. (skin test, specific serum IgE, bronchial provocation test) were given immunotherapy using partially purified and standardized extracts from the whole mite culture (WMC, N=12) or mite bodies (MB, N=12) in a double blind way. Both extracts were characterized by their allergen content and concentrations of the major allergens DP 42 and DP X. The allergen dose during immunotherapy was increased up to each patient's maximum tolerated dose. Before therapy as well as after 6 and 12 months all patients were evaluated by skin titration, bronchial provocation tests, histamine release from washed leukocytes and specific serum IgE and IgG antibodies. Allergen specific bronchial sensitivity was expressed as the allergen concentration necessary for a decrease in FEV_1 of 20% (PD_{20}), leukocyte sensitivity as the allergen concentration necessary for 30% histamine release (HR_{30}).
The results showed a significant decrease of bronchial sensitivity ($p < 0.01$) and leukocyte sensitivity ($p < 0.01$) to D.pt. after 6 and 12 months as well as an increase of specific serum IgG in both, the WMC and the MB group. Skin reactivity to D.pt. tended to decrease in both groups.
We conclude from our data, that after 1 year of immunotherapy extracts from both, WMC and MB are effective in inducing immunologic changes and decreasing bronchial sensitivity in D.pt. allergic asthmatic children.

242 OLIGOANTIGENIC DIET TREATMENT IN CHILDREN WITH EPILEPSY AND MIGRAINE.

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Of 53 children with epilepsy , selected largely because of associated symptoms and treated with an oligoantigenic diet, 29 ceased fitting completely and another 7 had fewer attacks. Double blind placebo controlled reintroduction of a provoking food in 16 provoked symptoms in 15, which included fits in 8. Patients with most types of fits benefitted, including 14 of 17 with generalised epilepsy, 18 of 21 with partial epilepsy, and all 11 with petit mal. None of the 6 with infantile spasms responded, but 4 patients with minor motor epilepsy did. Because of the selection method, most of the patients had headaches, behaviour disorder and/or abdominal symptoms; all responders had one or more of these. 43 foods caused symptoms and 38 provoked fits; most children reacted to several.

243 OESOPHAGEAL FUNCTION IN CHILDHOOD ASTHMA

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Aim: This study aimed at revealing the prevalence of oesophageal dysfunction (OD) in childhood asthma and healthy controls, its relation to different types of asthma, to medication and to symptoms of OD.
Methods: Fifty-five subjects, 8 to 19 years of age, with moderate or severe bronchial asthma, and 28 healthy controls, 11 to 16 years of age, were interviewed about symptoms and investigated with oesophageal manometry combined with pH reflux tests, acid perfusion test (APT) and acid clearing test.
Results: OD was found in 33 of 55 subjects (60%) with asthma and in 4 of 28 healthy controls (14%, $p<0.01$). Ten of 18 subjects (56%) with nocturnal or morning asthma at least 100 days last year had a positive APT as compared to 16% in those with less severe asthma ($p<0.01$).
OD was as frequent in allergic as in non-allergic asthma. Theophylline or $beta_2$-stimulants were not more often used by asthmatics with OD than by those with normal oesophageal function. In the asthmatic subjects OD-symptoms (acid regurgitation, heartburn, dysphagia) were significantly related to OD ($p<0.001$).
Conclusion: OD was common in moderate and severe childhood asthma and all patients with OD-symptoms had OD. A positive APT was common in youngsters with frequent nocturnal or morning asthma. This finding supports our hypothesis that nocturnal asthma may be reflexly provoked, by gastro-oesophageal reflux, in patients with an acid hypersensitive oesophagus.

WGPACI—Abstracts for Poster Presentations

244 INTRAVENOUS GAMMAGLOBULIN THERAPY IN IMMUNODEFICIENT CHILDREN.

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We have treated 23 children aged 6-15 years affected with agammaglobulinemia or severe hypogammaglobulinemia with IgG serum levels lower than 100 mg% with IV gammaglobulin (Sandoglobin) at the dose of 150-300 mg/kg/3 weeks for two years. The children suffered from severe and recurrent bacterial infections, mainly of the respiratory tract, leading to chronic tissue damage. The had been previously treated with IM gammaglobulins (0,8 ml/kg/3 weeks), but their serum IgG values were never higher than 75 mg%. The results are summarized in the following Table, in which we have compared the data of the follow-up after two years of treatment with IV gammaglobulin and of the follow-up after a one-year course of IM gammaglobulins.

Symptoms (per year/patient)	IM gammaglobulins	IV
No. of infections	3.2	0.6
No. of respiratory infections	2.4	0.3
No. of days in bed/hospital	24	4.5
No. of days with infections or fever	32	5.6
No. of days with antibiotics	47	8.5
Serum IgG levels (mg%)	75	520

Minor adverse reactions (chills, fever, abdominal pain) were observed only in some children and in the first months of therapy. These data demonstrate that IV administered serum immune globulin therapy dramatically reduced infectious diseases in children with immunodeficiencies.

245 SUBCLASS TYPING OF SPECIFIC IGG ANTIBODIES IN ALLERGEN IMMUNOTHERAPY

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Allergen immunotherapy results in the production of allergen specific antibodies. We investigated whether antibody response in one or more of the four IgG subclasses may be correlated to the clinical improvement.

10 patients suffering from systemic reactions to bee stings were hyposensitized over 3 years. All patients tolerated a bee stingchallenge one, two, and 3 years after the start of treatment, and after bee venom immunotherapy was discontinued. Almost all of the IgG antibodies were restricted to IgG_1 and IgG_4 subclasses. Although both rose during treatment, IgG_4 were maintained at high levels when immunotherapy was discontinued.

In conclusion, in serum from normal individuals IgG_1 is the predominant main protective antibody. IgG_4 subclass specific antibodies appear as a result of a repeat antigenic stimulation as in allergen immunotherapy. Our findings of persisting clinical protection and IgG_4 predominant immune response support the protective role of IgG_4 in allergic individuals undergoing a venom hyposensitization treatment.