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ANTINEUTROPHIL CYTOPLASMIC ANTIBODIES (ANCA) IN CHILDREN PREVIOUSLY DIAGNOSED OF IDIOPATHIC PULMONARY HEMOSIDEROSIS (IPH)

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Four children were diagnosed of IPH, during a period of 4 years. Retrospectively, ANCA were studied by indirect immunofluorescence (IIF) and ELISA in 18 sera of these patients, stored at -20ºC. ANCA positive sera, from 1/20 to 1/1,200 dilution, were found in sera of 3/4 of the patients, by IIF. The patient with the highest titre of ANCA died 3 months later during an acute crisis.The only case, in permanent remission without treatment, has no ANCA. The other two patients need a minimal dose of steroids. The antibodies anti-myeloperoxidase and anti-proteinase-3 were negative or in questionable levels. Rheumatoid factor, anti-nuclear (Hep-2), anti-endomysial, anti-reticulin and anti-basement membrane antibodies were negative in all sera. The surviving patients were followed-up for more than 10 years with no systemic or renal disease appearences. Serum ANCA must be studied in patients diagnosed of IPH. The presence of these antibodies may have a prognostic value although their lessive role is still discussed.

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TITERS OF SALIVARY IgA ANTIBODIES TO BACTERIAL ANTIGENS IN CYSTIC FIBROSIS WITH AND WITHOUT SEVERE MALNUTRITION

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Natural history of cystic fibrosis (CF) is marked by an increasing proneness to lung infections requiring long-term antibiotic therapy. Secretory IgA (SIgA) represent a major component of the mucosal defence system but they have been shown to be ineffective to prevent lung colonization from Pseudomonas Aeruginosa in CF. Little is known however about secretory immunity to common bacteria in CF patients.

In the present study titers and avidities of SIgA antibodies to tetanus toxoid and a 23-valent polysaccharide Pneumococcal antigen were determined in unstimulated saliva from 33 CF outpatients (mean age 12.8 y.) and 25 controls. Measurements were made by a standard ELISA technique and a thyocianate elution enzyme immunoassay respectively. Growth percentiles, body-mass index (BMI), functional respiratory parameters and Shwachman score were recorded from all patients.

The whole group of CF patients showed higher levels of total and specific SIgA antibodies to both bacterial antigens when compared to controls. Patients with severe malnutrition (BMI ≤ 15) however showed significantly lower levels of SIgA antibodies in saliva when compared to the remainding group. No difference was found in SIgA avidity among different subgroups and controls.

CF patients with severe malnutrition have a significant impairment in titers of SIgA to common bacterial antigens as detectable in saliva. It seems conceivable that analogous results could be obtained if SIgA were determined at the airways level. The data support the hypothesis of a wide susceptibility to mucosal infections concurring to the lung damage progression in CF with severe malnutrition.

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HUMORAL IMMUNE RESPONSES TO TETANUS AND DIPHTHERIA IN ATOPIC AND NON ATOPIC CHILDREN

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In order to investigate, whether atopic and non atopic children show differences in their humoral immune response to tetanus (T) and diphtheria (D) antigens we studied 593 children from a prospective cohort study who had been followed from birth. Clinical symptoms of atopy were registered and the cumulative incidence of skin and airway symptoms was determined at 24 months of age. Total IgE and specific IgE antibodies to egg, milk, soy, wheat, grass, birch, D. pteron., cats and dogs were determined by the CAP assay. T and D specific IgE and IgG_4 serum antibodies were determined at 24 months by RIA.

Our results show, that children with cord blood IgE >0,9kU/l, serum IgE >66kU/l and at least one sensitization to an allergen at 24 months of age have significantly higher IgE responses to T and D ($p>0,001$). In children with atopic eczema during the first 24 months immune responses were not significantly different from clinically healthy controls. IgG_4 antibody concentration tended to be higher in children with specific senzitizations and were correlated with T ($r_S=0,59$) and D ($r_S=0,63$) specific IgE antibody levels.

Our data indicate, that humoral immune responses to immunizing agents in atopic children are predicted by immunologic, but not by clinical parameters of atopy.

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SERUM LEVELS OF ECP AND EPX ARE NOT CORRELATED TO BRONCHIAL HYPERREACTIVITY (BHR) AS MEASURED BY METHACHOLINE BRONCHIAL PROVOCATION TEST (MBPT)

Report from the Preventive Allergy Treatment study (PAT).

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Linköping[1] and Uppsala[2], Sweden and Hørsholm[3], Denmark.

Eosinophil cationic protein (ECP) and eosinophil protein X (EPX) are markers of allergic inflammation. MBPT is a marker for BHR. We investigated the relationship between asthma and mediators in serum of 28 children, 7-13 y with birch and (B; n=12) or grass (n-B; n=16) pollinosis, included in the sc. PAT-study, were followed for one year. MBPT was done and blood was drawn on the day of MBPT during the birch, grass and winter seasons. s-ECP and s-EPX were determined by a sandwich RIA.

MBPT and PEF variability did not correlate to s-ECP and s-EPX (any season).

In the winter season, most children were sensitive to methacholine but had normal levels of s-ECP and s-EPX. We interpret this finding that inflammation was not present but BHR persisted in the winter season. Thus, elevated s-ECP and s-EPX do not reflect BHR / asthma but can still be used as markers of (bronchial) inflammation, which will have theraputic impact.

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SERUM LEVELS ECP AND EPX INCREASE DURING THE SEASON AND ARE ASSOCIATED TO BRONCHIAL HYPERREACTIVITY (BHR)

Report from the Preventive Allergy Treatment study (PAT).

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Linköping1 and Uppsala2, Sweden and Hørsholm3, Denmark.

Eosinophil cationic protein (ECP) and eosinophil protein X (EPX) are markers of allergic inflammation. PEF-variability is a diagnostic criterion for asthma. We investigated the relationship between asthma and mediators in serum of 28 children with birch (B; n=12) and/or grass (n-B; n=16) pollinosis followed for one year. Asthma was graded using a visual analogue scale, methacholine bronchial provocation tests (MBPT) were done and PEF variability was recorded, during the birch grass and winter seasons. Serum was drawn before the birch season and during the seasons. s-ECP and s-EPX were determined by a sandwich RIA.

In B, ECP and EPX, levels were higher during than before and after the seasons B and n-B ($p< 0.02$). PEF variability vas higher in B ($p < 0.01$) but not n-B during season. MBPT conc. were lower for B AND N-B during than after the season ($p <0.01$). ECP was higher in children with than without increased MBPT sensitivity (<1500 µg)($p <0.05$) during the grass season, whereas EPX was higher in the same children ($p <0.05$) during the birch season. No correlation was found between other parameters, probably due to non-awareness of asthma among children and parents.

Thus, in groups of patients with lowered threshold in MBPT, ECP and EPX increased during the season, but was not associated to the degree of asthma or BHR.

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Allergic sensitization during the first two years of life is partially influenced by respiratory syncytial virus (RSV) infection

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Study design: In the German multicenter allergy study (MAS) RSV serum antibodies (ab) (ELISA with purified Long strain virus) were measured at birth (n=1153), one year (n=618), and two years (n=267), respectively. Specific sensitization against 8 common inhalant and food allergens was determined by CAP-RAST (Pharmacia, Sveden).

Results: The amount of cord blood RSV ab was not influenced by parental atopy, smoking during pregnancy, season of birth, nor cord blood IgE. At one year, RSV ab were present in about 50% of sera. The prevalence was positively correlated with the season of birth ($p<0.001$), incidence of wheezing (0.008) and smoking in the family ($p=0.002$). No such influence could be observed at the age of two years. RSV seropositivity was not associated with the amount of total serum IgE.

RSV-IgM at one year was correlated with sensitization against inhalant allergens at one year ($n=20$, $p=0.001$ on the basis of CAP values) but not with sensitization against food allergens. Stratification for season of birth, incidence of wheezing, and passive smoking revealed no effect of these confounders. Neither RSV-IgG at one year, nor IgG or IgM at two years correlated with the incidence of sensitization.

Conclusion: RSV-infection has a minor role in facilitating sensitization against aeroallergens. Its main effect could be observed in the second half year of life.