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THE ROLE OF IL-8 IN PULMONARY INFLAMMATION DURING NEONATAL CHRONIC LUNG DISEASE

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The development of chronic lung disease (CLD) following neonatal respiratory distress syndrome (RDS) is associated with pulmonary inflammation. We investigated the role of interleukin 8 (IL-8) in polymorphonuclear leucocyte (PMN) mediated inflammation during RDS and the early stages of CLD. Of the 14 pre-term infants (gestational age <31 weeks) recruited, 7 developed RDS only, and 6 developed CLD following RDS. Broncho-alveolar lavage fluid (BALF) was obtained from ventilated infants on days 1,5 and 14. The dilution of lung secretions was calculated using urea concentration. IL-8 and myeloperoxidase (MPO) concentrations and PMN counts of BALF were analysed. PMN chemotactic responses to IL-8 and BALF were assessed *ex vivo* using micro chemotaxis chambers (Neuro Probe). The median IL-8 concentrations of BALF from infants in the CLD group and the RDS only group were 218pg/ml and 1891pg/ml on day 1, 3585pg/ml and 2434pg/ml on day 5 and 6780pg/ml and 144pg/ml on day 14 respectively. The BALF IL-8 concentration correlated (Spearmans Rank) with the BALF PMN count (p=0.02) and with MPO (p=0.01). This study indicates that IL-8 may be associated with PMN activation and margination during neonatal RDS and CLD.

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ECP AND MPO IN SERUM IN ASTHMA AND OTHER CHRONIC LUNG DISEASE IN CHILDHOOD

Eosinophil cationic protein (ECP) (Pharmacia CAP) and myeloperoxidase (MPO) (Pharmacia RIA), was measured in 102 children with bronchial asthma (BA) and 22 children with other chronic lung diseases (CLD). Atopy diagnosed by skin prick test and/or pos. RAST was found in 71 asthma children (AA) and 1 CLD child. Asthma severity was ranked from 1-5 (Aas score). The AA children did not differ from the nonatopic (NAA) children with regard to severity. Eigthy-nine children with BA received inhaled steroids, whereas all the CLD children did. sECP was significantly higher in the BA-group: mean 19.02 µg/L, (95%CI: 18.39-25.08) than in the CLD group 10.51 µg/L (7.52-13.49), (P=0.02). sECP was also significantly higher in the AA-group: mean 22.09 µg/L (18.39-25.08) than in the NAA-group; mean 11.96 µg/L (9.25-14.67), (P<0.01). sMPO was elevated in all groups: AA: mean 604.7 µg/L (543.9-665.6), NAA: 580.7 µg/L (520.6-652.7), CLD: 665.1 µg/L (490.5-839.7), not significant. In this steroid treated goups a slight, but significant correlation was found between asthma severity and sECP (r=0.21, p= 0.035), for sMPO no correlation was found.
This study suggests that sECP reflects bronchial inflammation in AA better than it does in NAA and CLD, indicating that the eosinophil granulocyte is more activated in AA than in NAA and CLD. sMPO is elevated in all groups, but does in this regard not indicate any specifisity. Although the vast majority of the children suffering from BA received inhaled steroids, the data also indicates a relationship between sECP and asthma severity.

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PULMONARY FUNCTION IN HEALTHY BOYS 11 YEARS OLD AND OUTDOOR AIR POLLUTION (SO2). A RETROSPECTIVE COHORT STUDY

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Study population: 30 pairs of male children (30 exposed [E] and 30 non-exposed [NE]) matched for age, height, socio-economic level and non-smoking mothers. All boys had lived and attended to school in their own area for all his life. Study variables: forced vital capacity (FVC), forced expiratory volume 1st sec (FEV1), FEV1/FVC ratio, mean expiratory flows at 25% (MEF25), 50% (MEF50) and 75% (MEF75) of expired volume, and mean forced expiratory flow during the middle half of FVC (FEF). Spirometry was recorded before and after (10') the administration of fenoterol (150 µg). A positive bronchodilating test (+BD) was defined as a 10% increment on FVC or a 12% increment in PEFR. Differences prior to fenoterol: FEV1/FVC (94.2±4.9 [NE], 97.5±3.8 [E]; p=0.007), FEF (2.71±0.57 [NE], 3.1±0.85 [E]; p=0.042). Differences after fenoterol: FEV1/FVC (94.2±4.9[NE], 97.5±3.8[E]; p=0.007), MEF25 (1.74±0.47 [NE], 2.08±0.64 [E]; p=0.022), MEF50 (3.12±0.56 [NE], 3.57±0.83 [E]; p=0.017), FEF (2.79±0.49 [NE], 3.16±0.83 [E], p=0.045). The risk of +BD for non-exposed boys was RR=1.32 (95% confidence limits 0.96<RR<1.8). Conclusions: Exposed boys had a normal spirometry. Non exposed boys had more +BD, suggesting more "active" airways or a shift of families from one area to another more than 10 yr ago.

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ATOPIC SENSITISATION OF 11-12 YEAR OLD CHILDREN IN ESTONIA

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As a part of an epidemiological study (questionnaires, lung function tests, broncial hyprreactiviti tests), sensitisation to 8 inhaled allergens was studied in 1233 children (costal industrial town Tallinn-Tln and inland university town Tartu-Trt). 12.3% (Tln)and 8.3% (Trt) of children had at least 1 positive skin prick test(SPT). Positive SPT to pollen was established in 8.7% and 5.3%, and to animal dander in 7.5% and 5.3% respectively (p<0.01 for both). The dominant allergens were cat (6.8 and 3.6%), Dermatophagoides(6.5 and 3.9%) and timothy (5.2 and 3.8%).
These data are about 1/3 of these, obtained in a similar study in Swiden, but the tendency to more prevalent sensitisation in industrial town is followed.Our data from previous socialist country support the hypothesis about the significance of modern lifestyle, predicting the rising prevalence of sensitisation in Western countries.

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CYTOKINE PRODUCTION BY MNC FROM SYNOVIAL FLUID IN JUVENILE RHEUMATOID ARTHRITIS C.MODESTO,U .ANDERSSON, E.D.SILVERMAN.
Production of different cytokines, at the level of the singular cell, was studied.MNC isolated from synovial fluid and peripheral blood were tested for the spontaneous production of IL1α, IL1β, IFNγ, IL-2, IL-4, IL-5, IL-6, IL-10, TNFα and GM-CSF.All patients (20), fulfilled the ARA criteria for the diagnosis of JRA. MNC from peripheral blood from 24 healthy donors were used like controls. After stimulation with PMA+Ionomycin at sub optimal periods of stimulation, the following cytokines were analyzed: after 45': IFNγ, IL-2,and TNFα; after 2 hs: IL-10, IL-4, GM-CSF.The results showed that there is a spontaneous production of TNFα in MNC from SF, in JRA patients. TNFα was present in the patients with higher ESR and higher white cell count in SF. After stimulation, production of IFNγ was significantly lower in the JRA patients(p=.0009). Conversely, IL-10 production was significantly higher than in the control group(p=.0013).Our results suggest the presence of "primed" T cells in synovial fluid.Also,it seems that T cells from SF have a tendency to follow the pattern Th1-Th2 (regarding cytokine production).

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PRENATAL DIAGNOSIS OF X-LINKED LYMPHOPROLIFERATIVE DISEASE USING POLYMERASE CHAIN REACTION

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X-linked lymphoproliferative disease (XLP) is a rare recessive immunodeficiency, particular to Epstein-Barr virus (EBV) infection.
Patients and results: XLP was diagnosed in a German family, where two boys died from overwhelming infectious mononucleosis at the age of 6 months and 2,5 years, respectively. By haplotype analysis two sisters were diagnosed not to be carriers with a probability of > 99%. When the mother, who was an obligate carrier for XLP, became pregnant again, she and her husband requested prenatal diagnosis for XLP. Chorionic villous biopsy (CVS) was performed at 13 weeks of gestation. The fetus was found to be male by cytogenetic analysis.
DNA analysis by polymerase chain reaction (PCR) with polymorphic X-chromosomal markers flanking the XLP gene locus proximally (DXS424, Xq24-q25, theta 0.13) and distally (HPRT, Xq26.1, theta 0.08) revealed the same haplotype in the fetus and in one boy with XLP. Thus, the fetus carried also the XLP mutation with a probability of > 99 %.
The parents were against a prolongation of the pregnancy. At the 16th week of gestation a therapeutic abortion was performed.
Conclusion: PCR analysis with DXS424 and HPRT allows fast and reliable prenatal diagnosis of XLP in informative families.