

- 5** R. KRAEMER and F. GEUBELLE, Dept. of Paediatrics of the Universities of Berne/Switzerland and Liège/Belgium. Bronchial Distensibility in Asthmatic Children.

Among adult asthmatic patients distinction into "primary bronchial disease" and "emphysematic" can be made on the basis of the elastic recoil/lung conductance relationship. We wish to know if these functional distinction also could be done in asthmatic children. The lung conductance is influenced by the state of inflation of the lung and the volume history. Thus, the question arose whether lung conductance could be reliably determined taking into account the presence of trapped gas and asynchronous ventilation. Static lung compliance and lung conductance measurements were made on 23 asthmatic children. It can be demonstrated that during this manoeuvre alveolar space can be recruited, the determination of static compliance being significantly changed. In addition, elastic recoil measurements are altered by the presence of trapped gas. On the basis of these methodological considerations it was possible to divide clinically similar asthmatic children into 3 groups: 1) normal static compliance, decreased bronchial distensibility, 2) increased static compliance, better distensibility, 3) increased static compliance due to loss of elastic recoil, high distensibility. By analogy with results from adult patients we suggest that the first functional abnormalities of "emphysema" begin in childhood but remain undetected. Hence, this functional distinction may be clinically relevant, since it has been demonstrated in adults, that pharmacological vagal blockade has an influence predominantly on central airways (Group 1), whereas beta-mimetics influence more the peripheral airways (Groups 2 and 3).

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Serum lipoproteins and major apoproteins in Cystic Fibrosis (CF) - effect of short term Cimetidine (C) application.

H_2 receptors are blocked by C. This increases low pH values in gastric and duodenal fluid. In CF the pH in duodenal fluid is in a suboptimal range, resulting in a lowered pancreatic intestinal fat absorption. As a pilot study we administered C (600 mg/m²) daily during 7 days under controlled clinical and dietary observation and studied the plasma lipoprotein and major apoprotein alterations. In addition stool analysis, based on 24 hour excretion of fat and nitrogen, was performed.

As compared to controls (triglycerides, TG: 62 ± 20, 2 mg/100 ml) CF showed increased levels of total- (120 ± 6, 1 mg/100 ml) and VLDL-TG, whereas total cholesterol (CH) and LDL-CH were decreased. The finding of low LDL was confirmed by low apoprotein-B (apo-B) levels in CF. HDL-CH as well as the major apoproteins of the HDL-fraction A1 + A2 were both decreased in CF. After C administration total TG and VLDL-TG showed a further increase. On the other hand total- and LDL-CH as well as apo-B were slightly decreased by drug treatment. Stool fat and nitrogen excretion were diminished in parallel, suggesting a better absorption of nutrient fat under C treatment. Pulmonary side effects under short time C application were not seen but must be considered in a long term application trial.

- 7** Ketogenic diets in the treatment of children with severe epilepsy: Clinical efficacy and metabolic effects.

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There is little information on the clinical efficacy or the mechanism of action of ketogenic diets in the treatment of children with epilepsy. We have studied 22 children (age range 6/12-15 years) with intractable epilepsy on normal diet (ND) and then on one of two ketogenic diets - the 'Classical Diet' (CD) (4:1 fat:carbohydrate and protein) or Medium Chain Triglyceride Diet (MCTD) (60% daily calories as MCT oil). Both diets were effective in reducing seizure frequency; overall, 66% of children studied had > 90% reduction in seizures. 10 of 12 children on the CD and 11 of 15 on the MCTD had > 50% decrease in seizures. The marked clinical improvement did not correlate with the EEG. There were minimal side effects, and anti-convulsant medication could be reduced. Blood glucose, acetoacetate β-hydroxybutyrate and alanine levels were measured during a 24 hour period on normal and therapeutic diets. Mean blood glucose concentration did not change. Increased mean blood ketone body levels occurred on CD and MCTD (1.12 ± 0.25 mmol/l and 1.53 ± 0.10 mmol/l respectively v.s. 0.21 ± 0.23 mmol/l on ND). Mean blood alanine level was significantly reduced on CD (0.22 ± 0.003 mmol/l v.s. 0.340 ± 0.016 mmol/l on ND). We conclude that ketogenic diets are highly effective in treating selected children with severe epilepsy. Several possible mechanisms of effect are suggested by the metabolic studies.

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Outcome of children to alcoholic mothers related to social conditions during upbringing.

The 99 living children of 30 women with chronic alcoholism were retrospectively investigated at age 2-29 yrs. Sufficient data concerning size at birth, symptoms of brain damage (defined), mental capacity and psycho-social symptoms (defined) were obtained in 90 children. The children were divided into 4 groups: (A) care in one fosterhome or adoption, (B) several changes of environment before steady foster home care, (C) several changes before care by the mother, (D) always care by the mother. Mean birth weight for gestational age was 1 SD below the mean of the reference population. Birth weight for gest. age was signif. lower in groups A+B, compared to C+D. Symptoms of brain damage (48/90) and slight to moderate mental retardation (43/90) were equally distributed in groups A-D. Psycho-social symptoms were not signif. correlated to low IQ or brain damage symptoms. Psycho-social problems were signif. less frequent in group A (7/27) than in C (20/23) or D (9/12). A signif. difference was also found between B (10/28) and C. Group A had a signif. less psycho-social symptoms than B+C, but no difference was found between D and B+C.

In conclusion: Foster care could not prevent mental retardation or symptoms of brain damage to occur. Children brought up by their biological parents probably had a slighter degree of intrauterine damage (higher birth weights), but significantly more psycho-social symptoms than children brought up in one foster home.

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University and 1st Department of Internal Medicine of Athens University. HLA antigens in children with meningococcal meningitis.

HLA antigens were studied in 37 children with meningococcal meningitis. B27 antigen was found in 10 (27%) of the patients. The incidence is significantly higher in the patients as compared with the incidence in normal controls (χ^2 14.76, $p < 0.001$). Relative risk is 5.39. No statistically significant difference was observed in any other antigen. It is of interest that B27 has been related with other common infections such as those caused by salmonella and shigella, which occasionally have uncommon clinical expressions i.e. arthritis. It is believed that a strong association of the disease with a certain phenotype might prove valuable for clinicians even though evidence for genetic linkage is still lacking.

- 10** INTRAVENTRICULAR AND OR INTRALUMBAR TREATMENT OF PURULENT MENINGITIS IN INFANTS

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Thirty-nine infants less than 3 months of age were treated with early intrathecal (intraventricular and/or intralumbar) administration of antibiotics. The weight was \leq 2500 kg in 9 (23%) of them, 17 (43%) were neonates. There were 21 (53%) infections due to gram negative organisms and 9 due to streptococci. Ventriculitis was demonstrated in 21 (53%) cases, and in 82% of the newborns. There were 6 deaths (15%). Sequelae were observed in 8 (20%) of the patients and normal outcome in 25 (65%). Fatality rate was 9.5% and 33% for infections due to gram negative organisms and streptococci respectively; 5/6 deaths occurred in newborns within 36h of treatment, all of them were in severe shock or acidosis on admission. 4/6 of them were treated within 24h after the first symptoms with exchange transfusion and antibiotics. Early diagnosis did not affect the fatality rate in our series but did influence the number of patients with sequelae. Indeed, 6/8 cases with sequelae were treated after a delay of 24h or more after the first symptoms. A scoring system has been developed which enables early prognosis in 87% of the cases.