

173 MUCOSAL GLIADIN ANTIBODIES IN CHILDREN WITH COELIAC DISEASE. Mearin M.L., Pena A.S., Polanco I., Lamers CBHW. Departments of Paediatrics and Gastroenterology, Leiden University Hospital, The Netherlands, and Unit of Paediatrics Gastroenterology, La Paz University Hospital, Madrid, Spain.

Many studies concerning antigliadin antibodies (AGA) in serum of coeliac patients have been performed, however only a few on specific intestinal antibody production have been published. Specific AGA were measured in homogenates of small intestinal mucosa of 9 coeliac children and of 3 controls, using a biotin-streptavidin system, described previously. Five of the coeliac children were on a gluten containing diet (GCD), and had at least a partial villous atrophy. Three coeliac children were at least 6 months on a gluten free diet (GFD), and had a normal intestinal mucosa.

RESULTS.

Coeliac patients (GCD)		Coeliac patients (GFD)		Controls (GCD)	
Mucosa	Serum	Mucosa	Serum	Mucosa	Serum
1.05	nd	0.41	nd	0.27	nd
1.19	1.23	0.23	nd	0.21	nd
2.16	1.28	0.66	0.64	0.08	0.28
1.72	1.80	0.66	nd		
2.00	0.77				

(Results expressed in optical density. nd= not done) The results show that patients with intestinal alterations have higher AGA in intestinal mucosa than those patients with normal histology. Further the data show a correlation between serum and intestinal AGA titers. This technique seems promising to study intestinal AGA in coeliac disease.

174 RELATIONSHIP BETWEEN METHANE AND HYDROGEN PRODUCTION IN AN ANAEROBIC FAECAL INCUBATION SYSTEM. Douwes AC, Van der Burg GJ, Schouten N, Kneepkens CMF. Department of Paediatrics, Subdivision of Paediatric Gastroenterology, Free University Hospital, Amsterdam, The Netherlands.

The relationship between hydrogen (H₂) and methane (CH₄) production by colonic flora remains unclear, though it has been suggested that CH₄ is produced at the expense of H₂ and carbon dioxide (CO₂). We developed an anaerobic incubation procedure to examine this relationship in vitro. The system consists of a perspex cylinder to prepare buffered faecal suspensions, and glass tubes for incubation with glucose and lactulose, connected by a closed circuit and freed from air by nitrogen flow. After ≥ 1 h incubation H₂, CH₄ and oxygen (O₂) are estimated by gas chromatography. All incubations are performed in duplicate. Numbers of viable bacteria before and after incubation were estimated by standard procedures. Results. In 96 duplicate incubations with faeces from healthy subjects, H₂ ranged from 577 to 28,478 ppm (blanks 1-1441 ppm); mean coefficient of variation 9.8%. In 62/69 incubations CH₄ was detected ranging from 2 to 4509 ppm (blanks 1-1880 ppm); mean coefficient of variation 13%. O₂ was < ½% in all samples. Logcounts of viable aerobic and anaerobic bacteria in faeces before and after incubation did not differ after correction for dilution. CH₄ appears to be produced at a slower rate than H₂. On prolonged incubation (24 h), H₂ concentration decreases while CH₄ production continues, and a high molecular gaseous compound appears after 6 h. CH₄ production is not enhanced by addition of H₂ and CO₂. Conclusion: CH₄ is not derived from H₂. Disappearance of H₂ seems to be related to formation of an unknown high molecular compound.

175 DUMPING SYNDROME IN CHILDREN: IMPROVEMENT OF GLUCOSE TOLERANCE BY GLUCOMANNAN. Kneepkens CMF, RJ Vonk*, J Fernandes*. Depts of Paediatrics, Free University Hospital, Amsterdam, and *University Hospital Groningen, The Netherlands.

Dumping syndrome (DS) is rare in children, but may occur after any form of gastric surgery. It is essentially characterized by symptoms of glucose intolerance and carbohydrate malabsorption. Guar and pectine are advocated for DS treatment in adults but are not suitable for use in children. Aim of our study was to define DS in terms of blood glucose (BG) and breath hydrogen (BH) changes after a glucose load, and to investigate the effect of glucomannan (GM), a new fibre, on glucose tolerance and absorption. Methods. Eight DS patients, ages 3-16 years, were subjected to glucose loads (2g/kg) without and with addition of 1% GM. The latter was stirred for 15 min in one test and swallowed directly in the other. Controls were 12 healthy children. Results. Maximum BG decrease (=difference between highest and subsequent lowest BG; mean±SD) after glucose was 2.5±1.1mM in the controls and 10.2±3.4mM in DS (p<.001). 7/8 DS patients had BH increases >10ppm (mean 54ppm). Addition of 1% GM to the glucose solution led to smaller BG decreases: 6.0±1.7 mM, p<.005 (stirred for 15 min), and 7.6±4.0mM, p<.05 (swallowed directly). BH increases did not change significantly (mean, 32 and 42ppm, resp). Conclusions: 1) DS is well defined by a maximum BG decrease >5.8mM (=mean+3SD) and a BH increase >10ppm after a glucose load; 2) 1% GM added to the glucose solution improves glucose tolerance, but has no effect on glucose absorption.

176 AGE RELATED DIFFERENCES IN EFFECT OF DIETARY FATS ON STEROID METABOLISM IN RATS. AM Temmerman, R Vonk, K Niezen-Koning, R Havinga, R Berger, J Fernandes. Dept. of Pediatrics, University of Groningen, The Netherlands.

Early dietary manipulations may have long-lasting effects on steroid metabolism. Therefore we studied the effects of dietary fats on hepatic steroid metabolism in 4-5 weeks old rats and in adult rats on lab.chow with 20% (w/w) sunflowerseed oil (SO) or hydrogenated coconut oil (CO). After 4 weeks of diet, biliary excretion of steroids, glycine/taurine ratios (G/T) of bile acids, serum-cholesterol (C) and plasma amino acids were measured.

RESULTS: cholesterol excretion (nmol/min/g liver) n=6

agegroup	SO	CO	
young	2.73±0.8*	0.54±0.12*	*=different from adult p<0.05
adult	1.26±0.6	0.94±0.25	

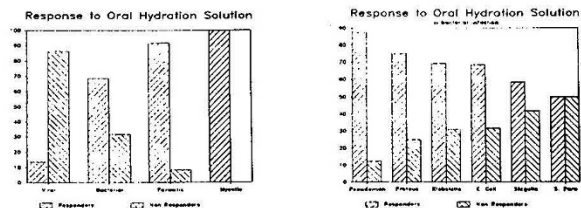
There were no differences in total biliary bile acid excretion. G/T of conjugated bile acids in bile n=6

agegroup	SO	CO	
young	3.5±0.2*	8.5±2.9*	*= different from adult p<0.05
adult	1.0±0.7	2.3±0.8	

Serum-C in young rats on SO and CO were 2.14±0.2 and 2.54±0.2 mmol/l, respectively, (significantly different p<0.05). This was opposite to the changes in biliary-C excretion. We speculate that the low biliary-C excretion in young CO rats is related to the high G/T in biliary bile acids.

177 ACUTE INFANTILE DIARRHEA IN EGYPT. A MAJOR CAUSE OF MALNUTRITION AND DEATH IN INFANTS; A STUDY OF 440 CASES; AETIOLOGY AND THERAPEUTIC OUTLINES. Ramzi el Baroudy, Department of Pediatrics, Cairo University, Cairo, Egypt.

440 cases of acute infantile diarrhea were studied, aged 1 month to 3 years. Bacterial aetiology was found in 66.4%, viral in 10.9%, and mycotic in 2.7%. All patients were put on oral fluid therapy for 48 hours. I.v. fluids were instituted when diarrhea persisted, when dehydration did not improve or when the general condition deteriorated. The results were computed and they are presented in the graphs below. The results of a previous study comparing the results of ORS alone and along with aspirin will be presented, too. No statistical difference was found.



178 CHANGES IN THE EEG PATTERN OF NORMAL BABIES IN RELATION OF GESTATIONAL AGE. J.A. Eyre, S. Nanei, A.R. Wilkinson. Neonatal Unit, John Radcliffe Hospital, Oxford, U.K.

To quantify changes in the pattern of background activity in relation to gestational age, the EEG was recorded continuously for the first five days after birth. Records were made in 25 healthy babies, gestational age 26-42 weeks. All were developmentally normal at 18 months. A continuous 2-channel record of the EEG was made and divided into two main patterns: discontinuous, burst-suppression (BS) and continuous activity (CA). Duration of BS decreased progressively with increasing gestational age. Total duration per 24 hour reduced from 6.5 hr at 28 weeks to 1.6 hr at 42 weeks. The mean duration of each epoch of BS decreased from 45 min at 28 weeks to 6 min at 42 weeks. Epochs of CA increased from 14 min at 28 weeks to 52 at 42 weeks. Within epochs of BS the duration of each burst (3 secs) was independent of gestational age while the mean interburst interval decreased from 25 sec at 28 weeks to 4 sec at 42 weeks, and the maximum voltage of slow waves from 440 µV at 28 weeks to 130 µV at 42 weeks. Analysis of variance showed all changes in relation to gestational age to be significant. Continuous EEG recording in normal babies enabled quantification of pattern changes and a definition of the normal range in relation to gestational age.