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COMPARISON IN A SMAE PATIENT OF SHORT, MIDDLE AND LONG TERM PH-METRY RECORDINGS IN THE PRESENCE OR ABSENCE OF A GASTRO-ESOHAGEAL REFLUX (GER) IN CHILDREN

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Long-term esophageal pH-metry has become the reference test to quantify acid GER. Nevertheless, short-, middle- and long-term pH-metry withor without postcibal period are used by clinicians to diagnose the presence or absence of GER. To determine the reliability of each recording period, 35 children (m = 4.1 yr; 1 mth-16.5 yrs) were studied prospectively during the past year on the basis of a clinical suspicion. All patients experienced a 22h-recording pH-metry, which was scanned subsequently by a PROXEDA software in 3h, 6h, 12h after insertion of the probe, 12h nocturnal (12hn) and 3h postcibal (3hpc). This technique allowed us to analyze in a same patient the different recording intervals.

Results: 16 children (gr A) had pathological pH-metry (% reflux time : 15.5 + 4.4; n(4%) and 19 (gr B) were normal (1.9 ± 0.3%) using 22 h recording. The mean age of both groups was not statistically different. The clearance time of GER (3.3 ± 0.5 vs 1.7 ± 0.3 min) and the number of reflux episodes >5 min (0.40 ± 0.10 vs 0.05 ± 0.01 episode/hr) were significantly higher in gr A (p< .01). The reliability of the different recording periods is tabulated below:

	3h	6h	12h	12hn	3hpc
Sensitivity (%)	69 *	69 *	81°	63#	38#
Specificity (%)	74 *	68 *	68 *	100°	74*

* : p < .025 vs 22h; # : p < .01 vs 22h; ° : non significant

In summary, this prospective study formally showed that short- and middle-term pH-metry, diurnal and/ornocturnal, as postcibal recordings, disclosed too many false positive or false negative results. Consequently, the long-term pH-metry remains an obligation.

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THE EFFECT OF CALCIUM AND CHLORIDE CHANNEL BLOCKERS ON THE MOVEMENT OF ANTIBODIES AND ALBUMIN IN THE RAT INTESTINE

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We have previously shown that chloecystokinin (CCK) accerlerates the movement of immunoglobulins across the intestinal mucosa. This study investigates some mechanisms of this phenomenon, Hooded-Lister rats (160-180 g) were sensitized with 250ng Ovalbumin with Freund's complete adjuvant. On the 14th day a booster injection was given. On the 21st day the rats were anaesthetised and 0.5nCi radiodinated human serum albumin was given i.v. A segment of intestine 10 cm long was isolated 10 cm. distal to the pylorus and perfused with 0.9% NaCl at a rate of 0.5 ml/min. The calcium channel blocker, Verapamil (50 g/ml) was injected i.v. 0.025 ml (1 ng) every 30 seconds for 20 mins. Ten mins. after starting Verapamil, 20 ng of CCK-octapeptide (CCK-OP) was given i.v. A control group received CCK-OP only. While in the control group there was a 20% rise of IgA and a 15% rise of IGG (P<0.01) above baseline, Verapamil prevented this change. A second group received 0.2 mg of the chloride channel blocker, Furosemide (F) i.v. and 0.5 mg in the perfusate. F. also prevented the CCK-induced rise of antibodies. The difference between the treated and the control groups remained significant for about 12.5 minutes. The loss of albumin at 2.5 minutes was 35% above the baseline after CCK and only 13% above if F. was added before the CCK (P < 0.001). It is concluded that 1) CCK provokes an increased shift of albumin, IgA and IgG into the lumen of the intestine. (2) CCK causes a rise of cystolic calcium. (3) CCK-induced translocation of albumin, IgG and IgA is prevented by F.

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TREATMENT OF CHILDOOD CHRONIC INFLAMMATORY BOWEL DISEASE WITH 7S-IMMUNOGLOBULIN

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Preliminary reports suggest that intravenous immunoglobulins may be helpful in the treatment of adult patients with Crohn's disease (CD) and ulcerative colitis (UC; Lancet I:170, 1987). However, the efficacy of this treatment in children with chronic inflammatory bowel disease (IBD) is unknown. Therefore 18 patients with histologically confirmed IBD (CD=12, UC=6) were treated by 7S-Immunoglubulin (0,4 g/kg for 7 consecutive days) in 8 pediatric hospitals in the F.R.G. 10 children suffered from relapses and 8 from newly diagnosed IBD. 5 patients showed a marked improvement already short time after therapy was started. 4 children have still been in remission for several months. In contrast 13 children did not benefit from the immunoglobulins. 4 of them even deteriorated and needed additional treatment with 5-ASA and steroids. Side effects of the therapy with immunoglobulins were anaphylaxis (1x) and fever (1x). Further investigations are necessary to determine the benefit of immunoglobulin therapy of childhood IBD.

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CHANGES IN SERUM AND INTESTINAL DIAMINE OXIDASE ACTIVITY (DAO) AFTER PROXIMAL ENTERECTOMY IN RATS : CORRELATION WITH MUCOSAL MASS PARAMETERS.

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To assess whether serum and mucosal DAO activity reflects quantitative changes in the small bowel mucosal mass (SBMM), a 50% proximal enterectomy or a single transection was performed in 20 growing rats. Ten days after surgery, hyperplasia of SBMM was demonstrated in each segment of the remaining gut (A : duodenum; B : proximal and C : distal ileum). Mucosal weight, protein and DNA content per cm were +38 to +78% higher ($p < 0.01$) in the resected group than in transected controls. In segments B and C of resected rats, total DAO activity was also increased respectively by +141% ($p < 0.05$) and by +87% ($p < 0.01$) over the controls, whereas in segment A, changes in DAO were small (+38%, n.s.) and not significant. In the ileum (B and C), there were significant correlations between total DAO and either mucosal weight ($r = 0.75$, $p < 0.01$) or mucosal DNA concentration ($r = 0.78$, $p < 0.01$) but not between DAO and sucrase activity. Compared to transected rats, the mean value of serum DAO was 5 fold higher in the resected group ($p < 0.005$).

In conclusion : after jejunectomy : (1) intestinal DAO activity reflects accurately quantitative changes of the SBMM in the ileum but not in the duodenum (2) serum levels of DAO could be a useful marker for ileal mucosal adaptation.

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DOES DIETARY FAT AFFECT THE SEVERITY OF CHILDHOOD DIARRHOEA?

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Absorption of fluid and electrolytes in the small intestine of young rats can be considerably improved by giving them a diet rich in polyunsaturated fatty acids. Our laboratory studies show that dietary fatty acid profile is reflected in the composition of the red blood cell membrane and also that of the small intestinal epithelium.

To find out whether these animal studies have clinical relevance we have examined the fatty acid profile of red blood cells in 44 children from Northern Ireland with diarrhoea and 32 controls, and compared them with those of Pakistani children (28 with diarrhoea and 14 controls), among whom diarrhoeal illnesses are more severe. Significant (p 0.05) differences in RBC fatty acid composition were observed between the Irish and Pakistani children, with a higher proportion of saturated fatty acids and a lower proportion of polyunsaturated essential fatty acids in the Pakistanis. These findings are consistent with the view that a relatively high intake of polyunsaturated fatty acids improves fluid and electrolyte absorption and protects against secretory diarrhoea in humans as well as in rats. They may have important implications for the rehabilitation of children with diarrhoeal illnesses and malnutrition in developing countries.

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IS CELIAC DISEASE A PREMALIGNANT STATE?

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Placental isoferritin (PLF) is a tumor-associated antigen present in the serum of patients with active Hodgkin's and non-Hodgkin's lymphoma, and its levels decrease during remission of the disease. Because of the strong association between celiac disease (CD) and lymphoma, we screened 19 children with active CD and 25 with inactive CD for the presence of PLF. 32 children with other GI disorders served as controls. PLF was identified by using a monoclonal antibody which binds exclusively to PLF in an ELISA procedure. The mean age of the children was 8+/-1.1 years.

Inactive CD	Active CD	Controls
43.8+/- 10.2	117+/- 22.8	14+/- 2.8
p = 0.03	p = 0.0004	

REsults are expressed in U/ml, as the mean+/-SE, and demonstrate a high level of PLF during active disease, which decreases during remission on a gluten free diet (GFD). Immune staining of intestinal biopsies demonstrated that PLF originated in the lamina propria lymphocytes. PLF is known to suppress T cell function and immunosuppressin during active CD may be one of the necessary steps in the development of malignancy. GFD, by reversing this state, might prevent the development of lymphona. This is the first report of a marker for the possible premalignant state in children with active CD.