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AMINES PREVENT THE IN VITRO TOXICITY OF GLIADIN PEPTIDES (gp) ON CULTURES OF FETAL RAT INTESTINE AND INHIBIT THE AGGLUTINATING ACTIVITY ON K 562 (S) CELLS.

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All proteins and peptides which in vitro and/or in vivo are toxic for the celiac small intestine are able to damage the in vitro developing fetal rat intestine and to agglutinate K 562 (S) cells (S.Auricchio et al.,J.Ped.Gastroenterol. and Nutr.4, 923,1985).The minimal concentration of peptic-tryptic gp agglutinating all the cells (MAC) was found to be 73 mg/l.Various amines were able to inhibit the agglutinating activity of gp.The minimal concentration(mM) of the amines completely preventing cell agglutination induced by a gp concentration four fold the MAC was: 1.3 for putrescine,0.8 for spermidine,1.2 for spermine,3 for glycinethylester,2.3 for histamine,1.6 for serotonine and 2.5 for monodansylcadaverine.10 mM spermine or spermidine were unable to protect the cells from the agglutinating activity of Wheat Germ Agglutinin and Concanavalin A.Spermidine 0.35 mM significantly protected the in vitro developing fetal rat intestine from the toxic activity of gp tested at a concentration of 0.1 mg/ml culture medium in 11 experiments.Spermidine and other amines are therefore able to prevent the activity of gp in these in vitro systems; this effect might be related to a possible regulatory role of amines in endocytosis and/or in brush border membrane functions (A.Elgavish et al.,Biochim.Biophys.Acta 777, 1,1984).

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ABNORMAL INTESTINAL PERMEABILITY IN CHILDREN WITH IGA NEPHROPATHY (IgAN).

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Circulating immune complexes containing IgA have a pathogenetic role in IgAN. Dietary antigens are thought to represent a major component of immune complexes (1). Aim of this paper was to investigate the integrity of the gut mucosal barrier in children with IgAN.

Intestinal absorption and permeability were measured in 14 children with IgAN (mean age: 10.5±4.5 years), 12 coeliac patients on normal diet and 15 age-matched controls. After an oral load of 2.5 g lactulose (Lac), 0.5 g rhamnose (Rh), 2.5 g D-xylose (Xy) and 1.25 g 3-o-methylglucose (3-o-MG), plasma levels and urinary recovery were assessed by thyn layer chromatography (2).

| Patients | n | Plasma ratio Xy/3-o-MG (2) | Urine ratio Lac/Rh (2) |
|---|---|---|---|
| Normals | 15 | 1.13 ± 0.13 | 0.026 ± 0.013 |
| IgAN | 14 | 0.96 ± 0.26* | 0.044 ± 0.020* |
| Coeliacs | 12 | 0.49 ± 0.18** | 0.140 ± 0.080** |

Difference from normals: *p(0.05; **p(0.001

The results indicate that abnormal gut permeability may play a role in IgAN. It remains to be established if it represents a primary defect or the result of a deranged mucosal immunity.

1) Sancho J. et al., Clin. Exp. Immunol., 1983,54:194-202.
2) Menzies I.S. et al., Lancet 1979,ii,1107-1109.

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COLITIS AND COW'S MILK PROTEIN SENSITIVE ENTEROPATHY

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Cow's milk proteins induce noxious effects on the mucosae of the upper gastrointestinal tract. The purpose of this study is to appreciate the incidence of colonic involvement in cow's milk protein intolerance (CMPI) with confirmed villous atrophy.

29 children were investigated (17 boys-12 girls), aged 1 to 10 months. All received cow's milk protein for at least 20 consecutives days. Clinical symptoms and specifications of the diarrhea were collected. Jejunal biopsies were obtained with Watson's probe beyond Treitz flexure ; all cases presented villous atrophy : partial:n=9, subtotal:n=13 and total:n=7. Colonoscopies and biopsies were performed with fiberscopes allowing rectosigmoïd examination in all cases, exploration of the left colon in 12 cases and right colon in 3 cases.The degree of inflammation was quoted:normal moderate or severe according to endoscopic and pathologic data.

Results:only nine children presented mucus and blood in their stools evoking colitis. Correlation between endoscopic and clinical features were as follow:-both examinations were normal in 2 patients -19 apparently normal endoscopies displayed indisputable pathological signs of inflammation -8 patients showed both abnormal examinations and most particularly 2 children with severe ulcerative and hemorragic colitis.

Colonic mucosal inflammation was found in 93% of our cases. These microscopic lesions were moderate in 86%, but in 7% severe acute colitis was observed. These data seem to give evidence of the lesions throughout all the gastro intestinal tract during CMPI.

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DRUG MODULATION OF INTESTINAL HYPERSENSITIVITY REACTIONS IN THE RAT

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Bloch and Walker (1) showed that there was enhanced uptake of an unrelated bystander protein (bovine serum albumin) from the gut when rats presensitised to ovalbumin were challenged intraduodenally with that antigen. We have recently confirmed and extended these observations (2) which may help to explain the development of multiple food protein hypersensitivities in man. In the present study we have used this animal model to investigate the modulatory action of various anti-allergic drugs on the uptake of bystander protein and release of the mediator serine protease RMCPII which is specific to the mucosal mast cell. Four drugs were tested at a single high dose by simultaneous administration with the BSA. Of these, beclamethasone diproprionate was the most effective in reducing BSA uptake ($p<0.002$). Nedocromil was also active ($p<0.02$) but disodium cromoglycate was only marginally active. Doxantrazole, a drug known to inhibit histamine release from mucosal mast cells in vitro, was, however, inactive. In contrast, at the doses used, none of these drugs had any effect on the release of the RMCPII enzyme. This suggests that the reduction in protein uptake from the gut observed with some drugs is not paralleled by any inhibition of RMCPII release.

(1) Bloch KJ & Walker WA (1981). J Allergy Clin Immunol 67:312.
(2) Turner MW et al (1988). Immunology (in press)

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ANTIBODY RESPONCE TO YERSINIA ENTEROCOLITICA IN SERUM AND SALIVA OF THALASSAEMIC CHILDREN.

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Y. enterocolitica requires iron for growth making thalassaemic chilren susceptible to infections with this organism. In order to investigate the hypothesis that a common mucosal immune system exists in man, serum and salivary antibodies to Y.enterocolitica O3 and serum antibodies to E.coli and B.vulgatus were measured by ELISA in Greek Cypriot thalassaemics and controls. Serum IgG antibody levels to Y.enterocolitica O3 were raised in 17/47 thalassaemics compared to 3/37 controls [p=0.006]. Serum IgA antibody levels were raised in 13/47 thalassaemics compared to 2/37 controls [p=0.018]. Serum IgM antibody levels were not significantly different in patients and controls. However serum IgG, IgA and IgM antibody levels to E.coli and B.vulgatus were not significantly different in thalassaemic patients compared to controls. Several thalassaemic patients also had raised salivary antibody to Y.enterocolitica indicating either transfer of IgA from serum to secretions or local salivary IgA production by B cells which have migrated there from the gut. It is concluded that a subset of Greek Cypriot thalassaemic patients have high antibody levels to Y.enterocolitica O3 indicating prior infection and that the presence of salivary antibodies to Y.enterocolitica provides preliminary evidence to support the hypothesis that a common mucosal immune system exists in man.

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DOES BREAST FEEDING PROTECT AGAINST INFECTIOUS DISEASE IN THE FIRST 6 MONTHS OF LIFE IN DEVELOPED COUNTRIES?

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Prior studies investigating the relationship between infant feeding and infectious illnesses in developed countries have concluded that there is a protective effect of breast feeding against gastrointestinal illness during the first 6 months of life. However methodological shortcomings such as the failure: (1)to include illnesses managed at home, (2)to define carefully "illness" and "breast feeding," and (3)to consider the effect of confounding variables, have weakened the conclusions of these studies.

We prospectively studied 500 infants born consecutively in a university affiliated community hospital in Copenhagen, Denmark over the first 6 months of life using a detailed monthly mailed questionnaire (return rate at 6 months=77% (385/500)) which focused on feeding practices and illnesses. All or mostly breast feeding decreased from 88% (407/461) at 1 month to 7.5% (29/385) at 6 months of life. Using strict criteria for breast feeding and illnesses, gastrointestinal (GI) illnesses averaged 17.4%/month and upper respiratory (UR) illnesses averaged 27.8%/month. There was no relationship between the type of infant feeding and the incidence of these (GI and UR) or other infectious illnesses during the study period.

These data suggest there may be minimal protective effect of breast milk against infectious illnesses early in life in well fed urban populations in developed countries.