29 IMPRESSION CYTOLOGY (IC): A SIMPLE METHOD FOR DETECTING VITAMIN A DEFICIENCY IN CHILDREN.

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Vitamin A deficiency (VAD) is a major health problem in children world wide. For its diagnosis, all the available methods such as clinical surveys, dietary assessment, measurement of serum vitamin A, relative dose response test and determination of liver vitamin A concentration (LVAC) have serious theorical or practical shortcomings. IC is a new non invasive method based on the change of epithelial surface which undergo keratinisation and metaplasia in absence of vitamin A. A millipore paper is grasped with finger on the temporal bulbar conjonctiva during 3 seconds. The paper is removed, pressed on a glass slide for transferring the cells. After fixation and a special short staining, the cells are examined under light microscope. To assess the value of this new method, we applied it to 30 children with liver disease whose LVAC had been determined on liver biopsy. In 22 children with normal LVAC, IC showed numerous goblet cells and small normal epithelial cells. In 8 cholestatic children with VAD, (LVAC < 20 ng/g), IC showed absence of goblet cells and enlarged epithelial cells. The results indicate that IC is a reliable method for detection of VAD based on a simple test: the absence of goblet cells. This may prove useful both for mass surveys in developing countries as well as for control of VAD in children with liver or gastrointestinal disease.

30 PEPTIC ULCER IN CHILDHOOD: THE LONG TERM PROGNOSIS.

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Information is limited concerning the long term prognosis for paediatric peptic ulcer disease. We traced 19 individuals in whom this diagnosis had been made 14 to 27 years earlier. All had been diagnosed using strict criteria. Each completed a postal questionnaire and where necessary further information was obtained by direct interview or by discussion with the general practitioner. Hospital case notes, from adult life, were studied where these were available.

At follow up the subjects ranged from 25 to 38 (median 30) years old. A high incidence of morbidity persisting into adult life was found. Nine (47%) had had a proven ulcer recurrence since entering adult life. Ten (53%) were no longer prone to recurring episodes of abdominal pain, but 40% of these had undergone vagotomy and pyloroplasty for intractable symptoms. Thus only six patients (31%) had made a lasting and spontaneous recovery. Complications such as haemorrhage, penetrating ulcer, severe pyloric stenosis or perforation had occurred in 10 (53%). Seven (37%) had undergone surgery, and in two of these cases more than one operation had been performed. Fifty-eight percent of complications suffered and 89% of surgical operations performed involved patients of 21 years or older.

These findings firmly reinforce the opinion that the disorder frequently persists into adult life. The impact of the newer means of medical therapy, such as the H_2 receptor antagonists remains to be evaluated.

31 LYMPHOCYTES, LYMPHOCYTE SUBGROUPS, IMMUNOGLOBULIN-CONTAINING CELLS AND HLA-DR EXPRESSION IN THE RECTAL MUCOSA OF CHILDREN WITH ULCERATIVE COLITIS

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Lymphocyte subpopulations, plasma cells and the expression of HLA-DR antigen in the rectal and colonic mucosae of 8 children with ulcerative colitis and 12 control subjects were studied using a panel of monoclonal and polyclonal antisera and the peroxidase technique. The numbers of lymphocytes in the surface epithelium were similar in patients and controls. The majority of these cells were mature T cells; among them suppressor-cytotoxic cells predominated. In the crypt epithelium the helper/suppressor ratio (H/S) was significantly greater in the patients than in the controls, mean was 0.37 vs 0.07, $p<0.05$. In the lamina propria of specimens from both patients and controls the majority of T cells were of helper type and the H/S ratios were similar. The density of IgG-containing cells was greater in patients than in controls, 1058 cells/mm^2 vs 359, $p<0.01$, and the most common isotype in the plasma cells of patients was IgG. The mean number of IgE-positive cells was also greater in the patients (230 vs 95, $p<0.01$). Anti-HLA-DR serum stained neither surface nor crypt epithelial cells of controls. The surface epithelial cells of 5 and the crypt epithelium of 6 patients showed HLA-DR expression. The aberrant HLA-DR expression and the imbalance of T and B cells in patients with ulcerative colitis suggest that immune mechanisms are important in this disease.

32 FAMILIAL INCIDENCE OF CROHN'S DISEASE IN CHILDREN

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The Paediatric Crohn's Disease Study Group (35 paeditric clinics, FR Germany, Austria and Switzerland) has compiled data from 535 patients with Crohn's disease (CD) between 1977-85. On the basis of personal interviews with defined questionnaires precise information on genetics was available on 320 affected families. Multiple cases with inflammatory bowel disease (IBD) were seen in 51 families, i.e. a familial prevalence of 16 %. 44 families reported "pure" CD, 7 both CD and ulcerative colitis. Most commonly one additional family member was affected. First degree relatives, mainly siblings, followed by parents, were presented with high frequency. Second, third and fourth degree relatives were markedly less affected. Among 1082 first degree relatives 28 were parents or siblings suffering from CD (risk = 3%) and 6 from ulcerative colitis (risk = 0.5 %).
The calculated data exclude a dominant or recessive gene mechanism but rather strongly suggest a polygenic mode of inheritance. However, in contrast to these genetics, there is no evidence from our data that children with a positive family history develop CD significantly earlier in life than those with a negative history.

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33 A SIMPLIFIED AND ACCURATE ORAL PANCREATIC FUNCTION TEST FOR USE IN CHILDREN

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The urinary recovery of p-aminobenzoic acid (PABA), following small intestinal hydrolysis by chymotrypsin of the synthetic peptide N-benzyl-tyrosyl-PABA (Bentiromide), provides the basis for an oral pancreatic function test. A conventional two day test repeated on a second day with PABA alone, was found to be inaccurate and of little use as a screening test for pancreatic insufficiency (PI). The test was modified in order to make it more suitable for children. 28 children with PI aged 17 mo - 16 y were studied (25 cystic fibrosis, 2 Shwachman's, 1 pancreatectomy) together with a group of 20 control patients, aged 4 mo - 11 y, shown to have normal pancreatic function by pancreozymin-secretin testing and faecal chymotrypsin estimation. Following an overnight fast, a pre-test urine sample was taken and then Bentiromide (15 mg/kg) with 4.5 mg/kg p-aminosalicylic acid (PAS, a structural analogue of PABA) administered with a standard breakfast of cereal and milk. A six hour urine collection was then made. After alkaline hydrolysis of PABA and PAS conjugates, urine samples were assayed by HPLC using a 300 x 3.9 mm column of u-Bondapak-C18. Results were expressed for each patient as PABA Excretion Index (PEI = urine PABA/urine PAS). The mean PEI in patients with PI was 19 (range 4-62) and for controls, 87 (range 66-140), with complete separation of values for patients with PI and control subjects, $p<0.0001$. Thus the use of PAS as a pharmacokinetic marker for PABA absorption and excretion in combination with Bentiromide provides a sensitive and specific 6 hour screening test for exocrine pancreatic insufficiency in children.

34 ARTHRITIS IN CHILDHOOD COELIAC DISEASE (CD).

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We would like to draw attention to arthritis and arthralgia as monosymptomatic forms of CD. There are few reports on this association in the literature and in paediatric patients the coexistens of CD and arthritis has not been documented. After finding four index cases we have screened children with joint symptoms for antireticulin antibodies (ARA). During the years 1982-86 ARA were tested whenever an antinuclear antibody test was requested. Small bowel biopsy was performed in 10 of 11 children positive for ARA. All the 7 children 4 to 16 years of age positive for IgA-ARA (titres 1:100 to 1:4000) had small, flat intestinal mucosa (SVA). Three of them had also IgG-ARA detectable in their serum. Three children with IgG-ARA only were normal on biopsy. During gluten-free diet disappearance of ARA in the children with SVA correlated well with mucosal recovery on control biopsy. We conclude that IgA-ARA is suitable for screening CD among children with arthritis. The role of IgG-class ARA in children with joint complaints and normal intestinal mucosa is unknown. Arthritis and arthralgia should be included in the list of monosymptomatic forms of CD.