

EXPERIMENTAL AND CLINICAL EVIDENCE AGAINST THE NEED FOR BASE IN ORAL REHYDRATION SOLUTIONS (ORS).

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Studies were undertaken to assess the value of including base in ORS in (i) an animal model of intestinal secretion and (ii) children with acute gastroenteritis. After exposure to cholera toxin, rat small intestine was perfused *in situ* with ORS containing base or identical ORS in which base was replaced by chloride. Test solutions were WHO-ORS (Na 90, Cl 80, K 25, HCO<sub>3</sub> 30, glucose 111 mmol/l), Experimental ORS (EXP-ORS I, Na 60, Cl 55, K 25, HCO<sub>3</sub> 30, glucose 111), EXP-ORS II, Na 60, Cl 55, K 25, citrate 10, glu<sup>3</sup>cose 111) and British National Formulary (BNF-ORS) Na 35, Cl 37, K 20, HCO<sub>3</sub> 18, glucose 200). Regarding water absorption (mean±SEM) no advantage was observed when bicarbonate was included in ORS compared with the same ORS without base. WHO-ORS (38±8 vs 40±5 μl/min/g;n=7), EXP-ORS I (98±6;n=6 vs 76±7;n=6), or BNF-ORS (19±4 vs 2.2±7;n=12). Similarly, EXP-ORS II with citrate was not superior to the citrate-free ORS.

In a double-blind controlled trial in children with gastroenteritis (n=40, age 2-24 mths) the efficacy of the BNF-ORS with and without bicarbonate was compared. After 24 hours ORS treatment with or without bicarbonate, serum bicarbonate (20.5±0.6 vs 19.6±0.6 mmol/l), venous pH (7.38±0.02 vs 7.36±0.01) and clinical outcome were similar in both groups. Evidence to support the use of base in ORS is sparse and its exclusion in U.K. may be justified.

TOWARD A SUPER-ORAL REHYDRATION SOLUTION (ORS): ENHANCEMENT OF INTESTINAL WATER ABSORPTION BY A POLY-NUTRIENT SOLUTION.

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ORS have been widely employed in the treatment of acute diarrhea. However, their optimal formulation is still being debated. Glucose, dipeptides and amino acids are taken up by the intestinal mucosa and thus theoretically stimulate additive water absorption. We therefore compared, in the jejunum of rats perfused *in vivo*, the absorption of water and ions from two ORS, having identical ionic composition (Na=60 mEq/L) and osmolality (270 mOsm/L), but differing in their nutrient contents. One (G-ORS) only had Glucose (111 mM), the other had the following composition (in mM): Glucose, 30; L-Lysine, 10; Glutamic acid, 15, L-Phenylalanine, 30; Glycyl-L-Proline, 30. Perfusion was carried out either under controls conditions, or in the presence of the secretagogue 8-Br-cGMP, 0.2 mM. Results (water is μl/min.g, electrolytes are μEq/min.g, means±SE):

	Controls		+ 8-Br-cGMP		C1
	Water	Na	Water	Na	
G-ORS	33.2±3.8	2.5±.5	1.5±.3	26.6±2.8	2.5±.4
SUPER-ORS	41.8±.41	2.0±.4	2.1±.4	39.1±3.8	2.4±.4

We conclude that such super-ORS allows a bigger water absorption, particularly in the presence of 8-Br-cGMP. The additional nutritive advantage of nitrogen supplementation makes this solution worth of further testing.

ENDOSCOPIC BALLOON DILATATION AS TREATMENT OF GASTRIC OUTLET OBSTRUCTION IN INFANCY AND CHILDHOOD.

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Whereas gastric outlet obstruction (GOO) in adults is commonly caused by peptic ulcer disease, in infancy and childhood hypertrophic pyloric stenosis is the most frequent cause. Pyloromyotomy is the generally accepted treatment. When after this procedure vomiting persists beyond a period of 3 weeks, inadequate myotomy and eventually reoperation should be considered. Balloon dilatation (BD) in infants and children has only been described as treatment of achalasia of the esophagus, we describe the first successful experience with BD of the pylorus in 3 children with GOO. In 2 the obstruction was caused by inadequate pyloromyotomy, in 1 by damage to N.vagus. During endoscopy after exclusion of peptic abnormalities, a flexible guide wire was passed through the pylorus. A balloon dilatator (Lunderquist-Owman PVED 14, max diameter 15 mm) was introduced over the guide wire and across the pylorus under fluorescent control. The balloon was inflated max. with inwater diluted gastrographin and kept in place for 1 minut. Following deflation of the balloon, the dilatator and guide wire were removed simultaneously. All 3 patients remained free of symptoms during follow-up for more than 1 year. Ramstadt procedure remains the treatment of first choice in hypertrophic pylorusstenosis. BD can offer a good alternative to reoperation in those cases in which GOO persists.

CHRONIC GASTRITIS IN CHILDHOOD: ROLE OF CAMPYLOBACTER PYLORIDIS

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SINCE 1984 SEVERAL REPORTS HAVE STRESSED THE IMPORTANCE OF CAMPYLOBACTER-LIKE ORGANISMS (CLO) IN GASTRIC, DUODENAL ULCERS AND ALSO IN CHRONIC GASTRITIS. ONLY 19 CHILDREN HAVE BEEN REPORTED.

SINCE NOVEMBER 1985 SYSTEMATIC CULTURES FOR CLO WERE PERFORMED IN 175 SUCCESSIVE UPPER GI ENDOSCOPIES IN CHILDREN WITH CHRONIC ABDOMINAL PAIN AND WERE POSITIVE IN 30, MOSTLY AT THE LEVEL OF THE ANTRUM. A DUODENAL ULCER WAS FOUND ONLY IN 3 CASES, THE MAJORITY OF THEM SHOWING A TYPICAL MICRONODULAR PATTERN. A FAMILIAL HISTORY OF PEPTIC DISEASE WAS FREQUENT. HISTOLOGY WAS CHARACTERISED BY MILD TO SEVERE INFLAMMATORY CHANGES. THE CLO COULD ALSO BE IDENTIFIED IN HEMATOXYLIN STAINED SLIDES AND THE CORRELATION WITH CULTURE WAS HIGHLY SIGNIFICATIVE (P < 0.005). SYMPTOMS WERE GENERALLY RELIEVED BY AMPICILLIN (SOMETIMES ASSOCIATED WITH COLLOIDAL BISMUTH) BUT RELAPSES OCCURRED FREQUENTLY.

CONCLUSION: IN ALL CHILDREN PRESENTING WITH EPIGASTRIC PAIN (ESPECIALLY THOSE WHO HAVE A FAMILIAL HISTORY OF PEPTIC DISEASE), CLO SHOULD BE LOOKED FOR BY BIOPSY CULTURE AND HISTOLOGY.

UPPER GI TRACT INVOLVEMENT IN CHILDREN WITH CROHN'S DISEASE.

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Crohn's disease may affect any part of the GI tract but involvement proximal to the jejunum (UGI) is considered uncommon. Among 228 Crohn's disease patients diagnosed over the past 15 years, 73(32%) had UGI disease. Duodenal lesions were most commonly noted followed by gastric and esophageal. Although in 70% of cases, there was concordance between Xray and endoscopic findings, UGI Crohn's disease was endoscopically documented in 9/32 with normal Xrays. Epithelioid, multinucleated cells or granulomas were found in 30% of biopsies while chronic inflammatory changes were present in the others. A peptic disease type of pain or postprandial nausea or vomiting was present in 2/3 of cases. There was no increase in the incidence of extra-intestinal manifestations in those with UGI disease except for aphtous lesions of the mouth (50%). In only 5 patients was the disease limited to the UGI tract. Of 31 cases with terminal ileitis, less than 20% had UGI compared to an incidence of 30% in the 151 with ileocolitis and than 40% in colitis. Of interest was the fact that radiological and endoscopic findings pointed erroneously to a diagnosis of ulcerative colitis in 12.3% of the patients with UGI. This study demonstrates a high incidence of Crohn's disease proximal to the jejunum in children and suggests that an upper endoscopy should be carried out whenever chronic IBD is suspected.

FOLLOW-UP OF CHILDREN WITH EPITHELOID GRANULOMAS BUT AN X-RAY PATTERN INCONCLUSIVE FOR CROHN'S DISEASE

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37 of 611 patients with Crohn's disease (CD) had epithelioid granulomas without fulfilling the radiological criteria (ECCDS) of the disease. Follow-up of these patients included clinical, biochemical, radiological, endoscopic and histological investigations.

All patients showed clinical symptoms (diarrhea, abdominal pain, growth retardation) and 29 had biochemical signs of chronic inflammation. They were all treated. After a follow-up of 3 years (1;1 - 9;7 years) barium contrast roentgenograms of the upper gastrointestinal tract and of the large bowel were performed in all and in 6 children respectively. Endoscopy was done in 22 of the 37 patients.

X-ray examination revealed CD (ECCDS) in 11 children and endoscopy in 12 further cases. One patient was proven to have chronic granulomatous disease and 13 remained unclear.

Our study demonstrates that epithelioid granulomas are not always conclusive for CD. We consider the radiological criteria (ECCDS) to be too restrictive for the diagnosis of CD in children.

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