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STUDY OF THE ELECTRICAL ACTIVITY OF THE STOMACH IN CHILDREN WITH NON-ULCER DYSPEPSIA (NUD). S.Cucchiara, G.Riezzo‡, F.Pezzolla‡, M.Baldassarre‡, S.Auricchio and I.Giorgio‡, Dept Pediatrics, University of Naples and Scientific Institute of Gastroenterology‡, Castellana Grotte, Bari, Italy.

Gastric contractions are coordinated by slow waves (SW), an omnipresent oscillating electrical potential, that emanate from the orad stomach and migrate distally at 3 cycles/min (cpm) in man. We wished to determine prevalence of gastric electrical abnormalities in children with NUD, that is characterized by recurrent vomiting, epigastric pain and bloating, early satiety, without structural or focal GI tract lesions. Eleven NUD patients (pts) (mean±SD age: 6.9±3.4 years) underwent cutaneous recording of gastric SW by electrodes (Red Dot 2256, 3M Co) located on the gastric region, for 1 hour before and after feeding a 300 cal mixed solid liquid meal (bread, egg, apple juice). Electrogastrography (EGG) signals were recorded on a Reega Minihuit Tr Alvar polygraph (lower and upper cutoff frequencies: 0.16 Hz and 30 Hz respectively) and later digitized on HP3852A and stored on HP Vectra RS80 for spectral analysis. Results: during fasting, 7 pts (group A) had significant electrical dysrhythmias (≥ 10% of the recording period) such as tachygastria (SW between 4 and 9 cpm, with regular rhythm), tachyarrhythmia (SW between 4 and 9 cpm, with irregular rhythm), bradygastria (SW < 3 cpm), or flatline patterns; most dysrhythmic periods were coincident with dyspeptic symptoms such as nausea, epigastric pain and vomiting. In 4 pts (group B) electrical abnormalities were rarely detected, as well as in 5 age matched controls (7.1± 3.7 years). After feeding, only 3 group A pts had marked dysrhythmias. In all group A pts, antro-duodenal manometry, performed by perfused catheter, showed severe motor changes such as fasting and/or fed decreased and/or incoordinated gastrointestinal motility; no disturbed motility was recorded in group B pts. Furthermore, gastric emptying time (min.) (mean±SD), measured by ultrasonography after eating the same meal administered during EGG, was much more delayed in group A pts (187±45.3; range: 130-250) than in B group pts (100±13; range: 85-116). We conclude that gastric electrical abnormalities are found in a substantial proportion of children with non-ulcer dyspepsia. Our preliminary results support the hypotesis that gastric dysrhythmias can be the electrical counterpart of gastroduodenal motor abnormalities frequently detected in patients with NUD.

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PROGNOSTIC INDICATORS IN LIVER CIRRHOSIS

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The assessment of short term (< 120 days) prognosis is essential for choosing the next recipient for transplantation.In a prospective study we analysed the prognostic value of a) clinical symptoms (ascites,nutritional status),b) clinical-chemical tests (serum bilirubin,-albumin,activity of cholinesterase and alk.Phosphatase) and c) liver function tests (indocyanine green t1/2,(ICG)and monoethylglycinexylidide (MEGX)formation after lidocaine bolus injection (1mg/kg)) (1).The patients studied suffered from cirrhosis due to biliary atresia (n=21) and postnecrotic cirrhosis (n=33).The median age was 6 y.,the 16th - 84th perc. being 1-15 y. The variables a-c) were used as covariates in the Cox proportional hazard regression model (BMDP 21).
The results of MEGX-and ICG test were significantly related to the 12o-day survival without transplantation (χ^2-test).The approximated χ^2-values to enter the analysis showed comparable results for ICG (26.0) and MEGX (23.2).The values of the other parameters were distinctly lower.None of these parameters evaluated contributed to a further relevant improvement of the predictive ability when added to the values of ICG (improvement p<o.0005) and MEGX (improvement p = o.002) suggesting that these tests are the best short term prognostic indicators. 1) Transplant Proc 19,3838,1987

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FOLLOW-UP OF NEWBORNS of HBsAg CARRIER MOTHERS VACCINATED WITH rec-DNA HBV VACCINE.

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PRELIMINARY RESULTS OF VACCINATION OF NEWBORNS OF HBsAg CARRIER MOTHERS WITH A ECOMBINANT-DNA HBV VACCINE (ENGERIX) WERE REPORTED AT THE 1987 ESPGAN MEETING. 48 NEWBORNS (NB) WERE VACCINATED WITH DOSES OF 20 mcg IM GIVEN AT BIRTH, 1 AND 2 MONTHS AND A BOOSTER AT 12 MONTHS. 4 NEWBORNS OF HBeAg POSITIVE MOTHERS WERE ALSO GIVEN SPECIFIC IMMUNOGLOBULINS AT BIRTH. 39 SIBLINGS (SIB) WERE VACCINATED FOLLOWING A SIMILAR SCHEDULE. RESULTS ARE NOW AVAILABLE AFTER A FOLLOW UP PERIOD OF 25 TO 48 MONTHS IN SOME OF THESE CHILDREN: 1/24 NB BECAME POSITIVE WHEREAS 0/20 SIB REMAINED NEGATIVE FOR HBsAg AND anti-HBc. IMMUNITY STATUS:

anti-HBs months	1	2	3	12	13	25-48
NEONATES						
Seroconverters	12/25	25/28	25/25	23/23	28/28	23/24
GMT (mIU/ml)	26.3	29.2	264	201	5661	1472
SIBLINGS						
Seroconverters	4/11	7/7	11/11	16/16	15/15	20/20
GMT (mIU/ml)	3.4	48.4	481	130	7096	1340

anti-HBs titers (mIU/ml)	<10	>10	>100	>1000
NB at 13 months	0/28	28/28	26/28	22/28
at 25-48	2/24	22/24	18/24	4/24
SIB at 13	0/15	15/15	15/15	14/15
at 25-48	2/20	18/20	13/20	6/20

CONCLUSION: AS 4/40 CHILDREN HAD anti-HBs TITERS BELOW THE PROTECTIVE LEVEL OF 10 mUI/ML SYSTEMATIC BOOSTERS ARE PROBABLY NECESSARY IN CHILDREN AT RISK OF HBV INFECTION.

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BISMUTHEMIA IN CHILDREN TREATED FOR CAMPYLO (HELICO) BACTER (HP) PRIMARY GASTRITIS.

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Treatment with colloidal bismuth subcitrate (CBS) associated with amoxycillin has proved to be effective in clearing HP as well as in reducing the re-infection rate in adults. Few authors have experienced this association in children because of the concern about bismuth salts toxicity in this age group. In this study we have been treating HP infection in 44 children with primary ulcer or gastritis with 50 mg/kg/d amoxycillin for one week associated with either 8 mg/kg/d CBS or with a placebo for four weeks. Bismuth was assayed by atomic mass spectrometry (Gist-Brocades Pharma) in blood samples before, during and one or two weeks after the end of treatment. Results:

	amox + CBS	amox + placebo
nr patients	23	21
eradication of HP	10	1
clinically improved	12	8
no change	1	12

Bismuthemia remained below 20 µg/l in all but 3 patients at 3-4 weeks (bismuth levels 25-28 µg/l) and in 1 at 8 weeks (50 µg/l) who had been taking erroneously a double dosage. No signs of toxicity were recorded though constipation was not infrequent. Low bismuthemias at 4 weeks are due to poor compliance in many patients. After the end of the treatment bismuth levels decreased gradually (but slowly) in all assays. Conclusion: These are the first results of Bismuthemias reported in children. Therapy with CBS seems safe. However compliance for long treatments is not sufficient in children.

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EFFICACY OF INTERFERON ALPHA IN THE TREATMENT OF CHILDREN WITH CHRONIC HEPATITIS B.

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It has been reported (Lancet 1987; ii: 877-880) that recombinant interferon alpha (rIFN-α) is not useful in Chinese children with chronic hepatitis B. We carried out a controlled study in Caucasian children. We included 36 children (mean age 8.2 years) with an histologically proven chronic hepatitis. All of them were HBsAg, HBeAg and HBV-DNA positive for at least 1 year before entry into the study. All the children were anti-HD and anti-HIV-1 negative. They were randomly allocated to one of the following groups: group I) 12 children received 10 MU/m^2 b.s. of rIFN-α 2b (Intron A) subcutaneously thrice weekly for 6 months; group II) 12 children received 5 MU/m^2 b.s. under the same schedule: group III) 12 children, control without treatment. No basal differences between the three groups were observed with respect to age, sex, ALT, etc.

The treatment was well tolerated and all children completed the therapy period. Side effects included flu-like syndrome, anorexia, myalgia, neutropenia and moderate thrombopenia.

At the end of the treatment period, HBV-DNA became negative in 7 patients (59%) from Group I and 5 cases (42%) from Group II as compared to 2 (17%) from the control group (p < 0.05). This situation remained unchanged until the end of the trial (1 year). HBeAg was negative in 33% of the treated patients and only in 8% of the controls. The ALT was normal in 21% of the treated children and in 8% of the controls. Anti-IFN-α antibodies (as detected by ELISA) developed in 8 patients (4 with and 4 without HBV-DNA) and remained positive at the end of the treatment period.

In summary, therapy with rIFN-α in children is well tolerated. A 6 months course of rIFN-α 2b induces a significant antiviral effect in caucasian children with chronic hepatitis B as compared with a control group.

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HISTOCHEMICAL CHARACTERIZATION OF PNA BINDING SITES IN CULTURED COELIAC MUCOSA

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Qualitative changes in lectin binding characteristics in coeliac disease have been previously described (Histochemistry 88,105,1988); in particular, the expression of PNA binding (Gal-GalNAc residues) in goblet cells of coeliac mucosa appears to be an important point of histochemical difference between coeliac and control mucosae.

In order to verify whether this PNA reactivity is modified in culture system,with and without the addition of a peptic-tryptic digest of A-gliadin (PT) at a concentration of 0.1 mg/ml,we have studied 4 cases of untreated coeliac mucosae placed in culture for 30 h in a serum-containing medium.All Bouin's solution-fixed paraffin-embedded sections were incubated with PNA-HRP conjugated lectin (Sigma Chemical Co.) as extensively elsewhere reported (Histochemistry 88,105,1988);prior to staining with PNA,parallel sections were digested with neuraminidase from Vibrio Cholerae (Calbiochem Corp.)(Lab Invest 47,383,1982).Adequate control procedures were also carried out.

Flat intestinal mucosa from all coeliac patients underwent a clear morphological improvement when cultured for 30 h in the absence of PT and enterocyte height was considerably increased after culture.When the tissue culture was performed in the presence of PT,no morphological or morphometric improvement was observed and necrotic areas and cell debris were found.

An evident PNA reactivity was observed in the supranuclear region of enterocytes of regenerating mucosae and also in samples treated with PT;this PNA reactive pattern is unmodified by neuraminidase pretreatment.Inflammatory cells in the lamina propria are greatly stained after neuraminidase digestion.In uncultured samples of duodeno-jejunal biopsies from same patients,only goblet cells were reactive.Therefore we contend that untreated coeliac mucosae in culture system express new PNA binding sites as a consequence of quantitative changes in glycoproteins synthesis and secretion,as previously reported(GUT 30,1339,1989);the unmodified PNA pattern after neuraminidase digestion may suggest an altered glycosilation in enterocytes since sialic acid groups are not incorporated or lacking in oligosaccharide chains.