

**421** HEPATIC DYSFUNCTION DURING TOTAL PARENTERAL NUTRITION (TPN). Janna C. Collins, Andrew R. Pulito, and William C. Heird. Columbia Univ. Col. of Phys. and Surgs., Dept. of Peds., New York.

Scattered reports of hepatic dysfunction during TPN led us to review the incidence of abnormal liver function tests (LFT) in patients receiving TPN. Sufficient data for analysis were available in 52 of 93 patients. None had liver disease or other explanations for the abnormal LFTs. The number of patients in each diagnostic category in whom abnormalities developed and the incidence of specific abnormalities are shown:

Category	Abnormal LFTs	↑SGOT	↑SGPT	↑Alk Phos	↑Bili
Infants < 2 kg (n=8)	7 (88%)	54%	50%	40%	43%
Chronic diarrhea (n=11)	10 (91%)	88%	88%	50%	14%
Surgical disorders (n=24)	16 (67%)	62%	50%	71%	43%
Other (n=9)	8 (89%)	90%	72%	25%	11%

None of 18 patients who received TPN fewer than 21 days but 11 of 34 who received TPN longer than 21 days developed persistent SGOT/SGPT > 100 IU and direct bilirubin > 2 mg/dl. Definite worsening of biochemical abnormalities occurred in 14 of 21 patients monitored during reinstitution of enteral feeding. Histological changes of intracellular and canalicular cholestasis with steatosis were seen in the 5 biopsy and 9 post-mortem specimens examined.

In our experience, most patients receiving TPN develop hepatic dysfunction. Although the etiology is unknown, it is suggested that failure to maintain normal bile flow and/or alterations in bile production play a role.

**422** PLASMA ENDOTOXIN-LIKE ACTIVITY (ELA) IN GASTROINTESTINAL DISTURBANCES. Michael S. Cooperstock and Linda Riegle. University of Missouri Medical Center, Department of Child Health, Columbia. (Spon. by Calvin Woodruff)

A limulus gelation microtechnique using 100C heat to extract plasma endotoxin was used to measure ELA in pediatric patients:

group (no. tested)	%ELA +	$\chi^2$
A. GN bacteremia (11)	64%	A vs G p<.01
B. Focal GN infection (8)	63%	B vs G p<.01
C. Possible infection (20)	5%	D vs E n.s.
D. "Major" GI disturbance (31)	35%	D vs F p<.01
E. "Minor" GI disturbances (16)	7%	D vs G p<.01
F. Neither GI nor GN disease (21)	0%	
G. Healthy Adults (54)	11%	

Most patients were neonates. GN = gram negative. A: Bacteremia simultaneous with ELA test. B: Focal GN infection with neg blood culture. C: Lung infiltrates or amnionitis, with neg bacteriology. D: Severe diarrhea or vomiting, gastric retention, hematemesis, bloody stools, pneumatosis intestinalis, obstruction, or ileus. E: Milder vomiting or diarrhea. F: apneic spells, idiopathic jaundice, gram positive infection, hyaline membrane disease, or perinatal hypoxia, with no GN infection and no GI findings.

The data suggest plasma ELA is associated with GI dysfunction as well as with GN infection. The possibility is raised that endotoxins of indigenous gut flora may reach the systemic circulation during a variety of GI disturbances.

**423** THE EFFECT OF POST-MATURITY ON HEPATIC UDP-BILIRUBIN GLUCURONYL TRANSFERASE (E.C.2.4.1.17). Cukier, Julio O., and Odell, Gerard B., Johns Hopkins University School of Medicine, The Johns Hopkins Hospital, Department of Pediatrics, Baltimore.

Post-maturity of fetal rats was induced by administration of chorionic gonadotrophin (CGT) to pregnant dams from day 13 to day 23 of gestational life. Glucuronyl transferase activity (GTA) using bilirubin as substrate was quantified in fetuses and pups from 21 to 26 days of postconceptual age. The GTA in ug bilirubin conjugated/gm liver/30 min. in control and CGT exposed pups is compared.

Age	Normal 21d	N	Post-mature 23d	N
0h	36.3 ± 5.2	8	70.8 ± 23.0	16
12h	63.5 ± 10.7	7	138.5 ± 26.7	7
24h	98.4 ± 8.5	8	172.0 ± 16.9	4
3d	188.6 ± 15.4	7	252.8 ± 54.3	4

The results demonstrate that GTA remains depressed in utero, but after delivery the GTA in the post-mature pup rapidly matures. Twelve hours after delivery the GTA of the post-mature pup was significantly greater than in normals.

**424** PULMONARY COMPLICATIONS OF GASTROESOPHAGEAL REFLUX/HIATAL HERNIA IN CHILDREN. Donald B. Darling, M.D., Lucian L. Leape, M.D., John C. Leonidas, M.D., Alan M. Schwartz, M.D., Roy G. K. McCauley, M.D. (Spon. by Sydney S. Gellis, M.D.)

As part of a retrospective analysis of gastroesophageal reflux (GER) and/or hiatal hernia (HH) in infants and children, all chest films obtained during the month prior to or following an upper gastrointestinal study on 507 consecutive children (April 73-June 75) were reviewed for pulmonary abnormalities (clinically manifest or unsuspected) consisting of either single or multiple areas of consolidation, emphysema, or both. GER and/or HH was found in 209 (41%) of the total group studied and in 55 (67%) of the 82 children with positive chest findings (P<0.001). The 55 pulmonary cases with GER and/or HH were significantly different in age distribution from the 27 patients without abnormalities of the cardia with 48/55 (87%) of the first group aged one year and under while only 14/27 (52%) of the second group fell into this age group (P<0.001). The clinical course and resolution of pulmonary abnormalities by x-ray were related to the presence or absence of cardioesophageal (CE) abnormalities in that either chronic, shifting, and/or recurrent changes were found in 9/27 (33%) of cases without and 26/55 (47%) of cases with GER and/or HH. Finally, in those cases with GER/HH, persistent pulmonary changes occurred in 21/35 (60%) with major reflux (grades 3-5) but in only 5/20 (25%) with minor reflux (grades 1-2, delayed only) and hiatal hernia only (P<0.02). Tufts Medical School (New England Medical Center Hospital) Department of Pediatrics, Boston.

**425** SERUM INHIBITORY ACTIVITY TO GLUCURONYL TRANSFERASE IN PYLORIC STENOSIS. F. Daum, M.I. Cohen, H. McNamara, S.J. Boley, P. Zucker, Albert Einstein Coll. Med., Montefiore Hosp. & Med. Ctr., Dept. Ped. & Surg., The Bronx, New York.

The unconjugated hyperbilirubinemia noted in infants with pyloric stenosis (PS) is believed secondary to a reduction in hepatic bilirubin UDP-glucuronyl transferase (GT) activity. In order to determine if a circulating inhibitor to GT is present and related to the reduced activity and the jaundice, 60 infants with PS were studied immediately prior to surgery. Bilirubins were determined in all infants and 42 sera, 43 gastric aspirate specimens and 29 urine samples were assayed for a possible inhibitor of GT. The mean total serum bilirubin concentration was 1.6mg/dl and the unconjugated fraction was 1.2mg/dl with 35 patients having values in excess of 1.1mg/dl. The 72 urine and gastric aspirate specimens revealed no inhibitory activity while 28 of the 42 sera demonstrated significant (> 20%) inhibitory activity with a mean of 39% inhibition of GT using a standardized in vitro assay. 12 age matched healthy infants served as controls and demonstrated no serum inhibitory activity. Of the 28 infants with significant serum inhibition only 10 had elevated serum bilirubin concentrations while 14 patients had hyperbilirubinemia without serum inhibitory activity present. These data confirm the frequent appearance of jaundice, establish the presence of significant serum inhibitory activity against GT but show no relationship between a circulating inhibitor of GT and hyperbilirubinemia in infants with PS.

**426** ASYMPTOMATIC TRANSIENT UVEITIS IN CHILDREN WITH INFLAMMATORY BOWEL DISEASE. F. Daum, H.B. Gould, D. Gold, G. Dinari, A.H. Friedman, P. Zucker, M.I. Cohen, Albert Einstein Coll. Med., Montefiore Hosp. & Med. Ctr., Dept. Ped., Bronx, NY.

Acute symptomatic anterior uveitis has been seen in patients with inflammatory bowel disease (IBD). In the absence of ocular symptoms, anterior uveitis has not been appreciated in children with IBD. To determine if children with IBD might have ophthalmologic signs of uveitis without visual complaints, eye examinations were performed in 19 children with granulomatous bowel disease (GBD) and 7 with ulcerative colitis (UC). In those with GBD, 6 had uveitis by slit lamp examination while no abnormalities were noted in those with UC. The abnormalities consisted of cells and flare in the anterior chamber. Despite a predominance of girls (11) and whites (16) among the 19 children with GBD, all were male and 3 black in the group with asymptomatic uveitis. All 6 with uveitis demonstrated colonic involvement. There were no positive correlations between the presence of uveitis and bowel symptoms, duration of illness, extra-intestinal manifestations, or specific treatment regimens. Contrary to observations in adults with acute anterior uveitis, none of the 6 children had radiographic evidence of spondylitis and 5 were HLA-B27 negative. Repeat eye examinations 6 to 8 months later, revealed no evidence of uveitis in 4 of 5 children. These data suggest that asymptomatic, transient uveitis is common in children with GBD and that males, blacks, and those children who have colonic involvement may be at greater risk.