463 TAURINE IN MILK: SPECIES VARIATION. David K. Rassin, John A. Sturman & Gerald E. Gaull. Div. of Human Devel. & Genet., Inst. for Res. Ment. Retdn., Staten Is., NY; Dept. Pediat., Mt. Sinai Sch. Med., CUNY, NY.

There is apparently a large requirement for taurine (tau) in the neonatal period; for a number of species, such as man and the cat, there is a dietary requirement because of limited ability to synthesize tau. We showed that even in the rat, which can synthesize tau readily, a significant proportion of neonate brain tau originates from the milk. Therefore, we measured the free amino acid composition of milks from 15 species, including variation throughout lactation. Tau is a major constituent of most species milk: In rhesus monkey, dog, cat and gerbil milk tau is the free amino acid in highest concentration. In chimp, baboon and java monkey milk tau is exceeded only by glutamate; in sheep milk only by glycine and in rat milk only by ethanolamine. Species whose milk does not contain tau as a major constituent, i.e. cow, rabbit, guinea pig and horse, have glycine and/or glutamate as a major constituent. Horse milk was the only milk which contained neither tau nor glycine, the two amino acids usually involved in bile acid conjugation, as a major constituent. The milk tau concentration of man, cow, sheep and rat was highest in the first few days of lactation.

The special importance of these results for feeding the human infant will be discussed in terms of the high concentration of tau in human milk and neonatal brain and the low intake of tau on cow milk and formulas now made from it.

464 INTRALIPID (IL) AND AMINO ACID TRANSPORT IN HUMAN SKIN FIBROBLASTS. Betty Revsin, Joyce Lebowitz and Grant Morrow III, Arizona Health Sciences Center, Department of Pediatrics, Tucson 85724.

IL, a soybean oil preparation, is used extensively in hyperalimentation. Neutral amino acid transport in human fibroblasts was studied in cells grown in IL.

AMINO ACID UPTAKE IN NANOMOLES/100 ugm PROTEIN/15 MIN.

AMINO ACID	MEDIA CONCENTRATION OF IL			
	0	10 MG%	20 MG%	40 MG%
Glycine	35.7*	23.5	18.1	17.5
n=11	(19.3-64.8)	(10.0-48.1)	(10.5-31.4)	(6.7-26.3)
L-Alanine	28.1	17.8	14.6	13.6
n=10	(17.1-41.9)	(11.1-24.0)	(7.1-20.3)	(9.4-18.7)
L-Proline	24.8	16.0	11.3	10.8
n=8	(13.7-46.3)	(8.2-25.7)	(6.1-23.0)	(7.4-16.1)
L-Valine	11.7	7.8	7.0	5.2
n=5	(6.9-20.5)	(3.1-10.8)	(3.5-10.9)	(2.4-8.3)

* mean plus range in parenthesis

Maximum inhibition (50-60% of control) occurred at 20 mg%, i.e., at concentrations much lower than "safe" therapeutic levels. Maximal inhibition was achieved after 3 hours exposure to IL. Inhibition due to IL exposure for 1 hour appeared to be reversible while reversibility became increasingly difficult with longer exposure. Although the mechanism of transport inhibition remains unknown, the possibility of altered cell membranes must be considered. These findings suggest an interaction between amino acids and IL when administered to children in vivo.

465 LITHOGENIC BILE IN CYSTIC FIBROSIS (CF). C.C. Roy, L. Chartrand, J.C. Combes, A.M. Weber, C.L. Morin and D. Nusslé, Universities of Montreal and of Geneva, Departments of Pediatrics, Montreal and Geneva.

In view of the abnormal bile acid metabolism and of the increased incidence of gallstones in CF, biliary lipid composition was examined in 12 CF patients ($\bar{X}$ age: 8.4 yrs) who were off therapy. A microgallbladder was present in 2, cholelithiasis in 1. In 8 cases the gallbladder was normal, it was not opacified in 1. Fasting bile was obtained after I.V. cholecystokinin-pancreozymin (1.5 U./Kg) in the CF group as well as in 13 controls ($\bar{X}$ age: 7.0). In 7 children ($\bar{X}$ age: 13.8) with cholesterol gallstones, bile was sampled at the time of cholecystectomy. The % molar lipid composition ($\bar{X} \pm$ SE) accounted by cholesterol was 16.3 ± 2.3 in CF and 16.8 ± 1.9 in the cholelithiasis group as compared to 7.4 ± .8 in controls ($P<.01$). The ratios of cholesterol actually present to the maximal amount experimentally soluble (Hegardt and Dam, Holzbach et al) at the phospholipid-bile acid concentration of the samples (Thomas and Hofman Gastroenterology 65: 698, 1973) in CF (2.8 ± .4) and in the cholelithiasis group (2.6 ± .3) were much higher ($P<.01$) than in controls (1.2 ± .1). This first study of bile lithogenicity in children may have important implications because of the prevalence and type of hepatobiliary disease observed in CF.

466 PERSISTENT VOMITING DUE TO SENSITIVITY TO CORN SUGAR OR DEXTROSE PRESENT IN INTRAVENOUS FLUIDS. Douglas H. Sandberg, Department of Pediatrics, University of Miami School of Medicine, Miami, Florida.

A 13-yr-old WF was admitted to the University of Miami Medical Center because of persistent vomiting for 2 months associated with weight loss of 16 pounds. Abdominal exploration and appendectomy because of 8 months of persistent abdominal pain demonstrate no abnormality. Post-operatively she developed nausea and vomiting of all oral intake. Upper GI series had shown no abnormality. Cineesophagogram and endoscopy revealed minimal esophagitis and mild pylorospasm. While in hospital on IV fluids, vomiting of all oral intake persisted. Substitution of intragastric drip feedings of sustacal R for IV fluids was associated with much improved retention temporarily with reocurrence of vomiting. Intragastric milk was tolerated, however, and other foods except for corn products were gradually added to the diet and tolerated. Intradermal provocative food testing with corn extract produced definite symptom response suggesting sensitivity to corn. IV injection of 25 ml D5/water reproduced all previous GI symptoms. A meal of corn syrup and corn meal produced nausea and vomiting 3 hours after ingestion associated with acute alteration and decreased plasma C3 complement concentration. Initial C3 was low (67 mg%), serum IgE (440 u/ml) and serum IgM (480 mg%) were elevated. Avoidance of corn products resulted in 13.5 lb. weight gain in 3 weeks with no nausea or vomiting.

467 GENERALIZED EDEMA RELATED TO SENSITIVITY TO FOODS. Douglas H. Sandberg and Jose Strauss, Dept. of Pediatrics, University of Miami, Miami, Florida.

Anecdotal reports have described association of cyclic edema with sensitivity to specific foods. Although it occurs in children, this study was carried out in 4 women, ages 23-48 yr. Fasting 4 days on distilled water resulted in wt loss (avg 3.9Kg) and elimination of edema. Individual food challenges, 4 daily, were then performed for 10 days. Measurements of wt. and urine output were obtained on constant fluid intake. Urine volumes were collected 4 hr after ingestion of foods and for each 24 hr period. Serum and urine osmolality, electrolytes and aldosterone and serum cortisol, C3, and immunoglobulins G, A, M, and E were measured serially. The decreased wt and loss of edema were maintained throughout the study period except for transient fluid retention after ingestion of particular foods. Specific foods caused decrease in 4 hr urine output to amounts less than 1 S.D. from mean 4 hr urine volume. Fifteen foods were found to produce fluid retention. Reactions were reproducible. Four patients had high serum IgE and 3 and 4 elevated IgM levels. During positive tests, urine output decreased within one hr unassociated with increased urine osmolality. A direct vascular effect with decreased renal blood flow is a likely explanation. Elimination of test positive foods resulted in good control of edema in all patients.

468 CLINICAL & RADIOLOGICAL CORRELATION OF GASTROINTESTINAL (GI) MANIFESTATIONS IN HENOCH-SCHOENLEIN SYNDROME (HSS). Kumudchandra J. Sheth, Robert J. Starshak, Introduced by Jerome V. Murphy, Medical College of Wisconsin, Milwaukee Children's Hospital, Departments of Pediatrics and Radiology, Milwaukee, Wisconsin

20 children, aged 3-10 yr., had severe colicky abdominal pains with HSS. 9 children also had joint pains. Severe vomiting (3) or hematemesis (3) lead to blood electrolytes imbalance. Occult blood in stools was present in 15, of whom 4 had melena and 2 had fresh blood in stools. 10 children showed some renal involvement. 6 children had B-strep cultured from throat swab, while 4 had elevated ASO titre. Normal S. complement was present in 11 children studied.

Of the x-ray studies in 19 children, 15 had Barium studies. The results were divided into 3 groups - a) Presence of ileus in 4, b) Intestinal mucosal edema in 3, c) Evidence of submucosal/intramural hemorrhage in bowel wall in 12 children. 8 of 12 in group (c) had intramural hemorrhage limited to upper small bowel wall. 4 had either distal ileum or entire small bowel involvement. Hemorrhage in the ureteral wall was noted in 1. The transit time of Barium was delayed in all studies. Abnormal studies returned to normal in a month. Correlation between GI symptoms and x-ray changes in the small bowel was good.

11 children were treated with Prednisone. Of 2 children with intussusception, 1 had a surgical reduction. 3 of 10 children with renal involvement and severe GI symptoms and x-ray changes progressed to proliferative nephritis with nephrotic syndrome.