1552 CLINICAL AND HISTOLOGICAL SPECTRUM OF IgA NEPHROPATHY IN CHILDREN AND ADOLESCENTS. Robert A. Weiss, Roberto Jodorkovsky, Boyce Bennett & Ira Greifer, Albert Einstein College of Medicine, Dept. of Pediatrics, Bronx, N.Y.

Since 1972, significant mesangial IgA deposition was detected in 19 patients (16 male, 3 female), undergoing renal biopsy for recurrent gross hematuria (n=15) or asymptomatic urinary abnormalities (n=4). The mean age of diagnosis was 13.5 yrs (range8-18 yrs). Significant proteinuria ($> 4mg/M^2/hr$ was detected in 11 patients ($\bar{x}=24.3mg/M^2/hr$); 8 of these 11 patients had at least one episode of gross hematuria. Glomerular filtration rate (GFR) was normal at the time of diagnosis in all patients. Three patients had reversible reduction in GFR of 20-64% during episodes of gross hematuria. No patients had experienced hypertension. Histopathology varied from completely normal (n=3) to focal and segmental proliferative glomerulonephritis. Capsular adhesions of sclerosed segments were seen in 6 patients and organizing crescents in 2 patients. Six patients had global sclerosis- Immunofluorescence studies revealed C_3 in 15 patients, IgG in 8 pts., and IgM in 5 pts. Follow-up in 11 pts. ($\bar{x}=3$ yrs), has shown persistence of the clinical pattern, urinary abnormalities and maintenance of GFR Therefore, IgA nephropathy appears to have a more benign histopathology in children and adolescents.

1553 CHRONIC RENAL FAILURE DUE TO TAKAYASU'S DISEASE: RECOVERY OF RENAL FUNCTION AFTER NINE MONTHS OF DIALYSIS. Robert A. Weiss, Roberto Jodorkovsky, Ira Greifer, Adrian Spitzer, Boyce Bennett, & Shelley Weiner, Albert Einstein College of Medicine, Dept. of Pediatrics, Bronx, N.Y.

Takayasu's Arteritis Renal Involvement is usually characterized by renovascular hypertension and reduction in glomerular filtration rate (GFR) has rarely been described. A twelve year old boy presented with severe hypertension (diastolic BP$>$ 120mmHg) and oligoanuria. Aortography demonstrated irregular narrowing of the lumbar aorta and renal arteries. Chronic renal insufficiency (GFR$<$ $2ml/min/1.73M^2$) necessitated maintenance hemodialysis. During this time severe hypertension persisted despite aggressive dialysis and numerous antihypertensive drugs. Plasma renin activity was persistently 15 $>$ ng/ml/hr. Follow-up arteriograms showed no improvement in his arteritis. Renal scans demonstrated persistent poor perfusion. Renal biopsy after eight months of dialysis showed preservation of glomerular architecture with mild arteriolar intimal thickening. After 9 months on dialysis GFR improved spontaneously to $32ml/min/1.73M^2$ despite no improvement in his hypertension. Off dialysis, he remains severely hypertensive, with stable GFR. This report emphasises the remarkable ability of the renal parenchyma to recover function after sustained ischemia.

1554 AMPICILLIN-INDUCED AMINOACIDURIA. James Wu, Richard Siegler, R. Kirby Reed, Bruce Buehler, and Patrick Bray, Dept. Path. and Ped. Univ. of Utah Col. of Med. Salt Lake City, Utah.

In the process of performing metabolic screening tests using thin layer chromatography, we noted that 41 of 1,450 urine specimens(3%) contained both amino acids and ampicillin. When serum amino acid levels were measured, they were normal.

In order to further delineate the nature of the aminoaciduria, urinary amino acid excretion was measured using high performance liquid chromatography in 10 patients receiving ampicillin. Urinary serine and glycine were elevated in all patients, aspartate and glutamate in eight, valine in seven, alanine and lysine in six and tyrosine in five. A minority had elevations in histidine, methionine and leucine.

In an additional group of four patients, amino acids and $beta_2$ microgobulins were measured in urine samples obtained before, during and after ampicillin administration. The increase in amino acid excretion could be demonstrated within 1-3 days after starting ampicillin, and was generally still present 2-3 days following completion of ampicillin therapy. Two of the four also had elevated urinary $beta_2$ microglobulin levels. These findings suggest that ampicillin can damage the proximal tubule and impair the reabsorption of amino acids.

In view of the frequent use of ampicillin, and the growing practice of screening for inborn errors of metabolism, the clinician should be aware that ampicillin can produce a generalized aminoaciduria.

1555 PREVALENCE OF ALLERGY IN STEROID RESPONSIVE NEPHROTIC SYNDROME (SRNS). Gastón Zilleruelo, Rafael Galindez, Margo Mitchell, Helen Gorman, Douglas Sandberg, and José Strauss. Dept. of Pediatrics, Univ. of Miami, Miami, FL.

Childhood SRNS has been reported to be associated with high incidence of atopy. Prevalence of allergic disease was studied in 51 children with SRNS. Thirty-eight healthy age and sex matched children and 60 children with urological disorders or urinary tract infection were controls. A standardized allergy questionnaire covering child and family was completed with parents of all patients and controls. Allergic symptoms included were asthma (A), urticaria (U), eczema (E), hay fever (H), contact dermatitis (C), drug or chemical allergy (D), and gastrointestinal (food) allergy (F). Positive family history was defined as finding symptoms in siblings, parents, aunts, uncles and grandparents.

Prevalence of symptoms (%)		A	U	E	H	C	D	F
SRNS (N=51)	Patients	17	10	12	5	12	17	29
	Families	61	26	20	40	26	27	23
CONTROL (N=98)	Patients	9	8	7	16	6	10	10
	Families	39	27	14	48	28	39	21

Mean percentages of allergy prevalence were: SRNS patients: 15%, families: 32%; control children: 9%, families: 31%. No readily available explanation was found for the low prevalence of hay fever observed in this series. It is concluded that atopic symptoms seem to be more frequently present in SRNS children and their families than in controls. Pathogenic and therapeutic implications of allergic disease and SRNS require further study.

NEUROLOGY

1556 NEONATAL CARNITINE DEFICIENCY WITH MUSCLE AND CNS DETERIORATION SECONDARY TO ABSENT 5,10-METHYLENETETRAHYDROFOLATE REDUCTASE (MTHFR) RESPONSIVE TO SUBSTRATE REPLACEMENT Richard J. Allen (Ann Arbor), Paul Wong (Chicago), Sheldon Rothenberg (NewYork), Salvatore DiMauro (New York), John Headington (Ann Arbor) University of Michigan Medical School, Departments of Pediatrics and Neurology, Ann Arbor, Michigan.

A first born infant girl developed a myopathic lipid storage (light microscopy and EM) tetraparesis and hydrocephalus with reduced white matter density (CT scan). Leukocyte and fibroblast MTHFR was low (12% of control), without flavin adenine dinucleotide and 5% with FAD). Cystathionine synthase and methionine synthetase were normal. Free carnitine (C) was reduced in plasma (21.6 nmol/ml) and muscle (3.04 nmol/mg non-collagen protein). Plasma methionine (M) was low (1.0 um/l). Homocystine (HC) was increased in urine (1.6 um/mg creatinine) and plasma (3.1 um/l). Low (6.4 ng/ml) CSF folate (F) reversed the normal plasma/CSF ratio. At 14 mos. full clinical recovery has occurred with oral substrate (F-M-C) supplements.

This neonatal CNS syndrome appears to be due to a M/F deficiency from absent MTHFR. Via S-adenosylmethionine (SAM), methionine is a methyl donor in lysine conversion to carnitine, necessary for muscle fatty acid metabolism SAM also contributes to phosphatidylcholine (lecithin) an important component of normal myelin. This new disorder differs from other types of carnitine deficiency.

1557 AN EXPLANATION FOR THE EFFECT OF REYE'S SYNDROME SERUM ON PREPARATIONS OF ISOLATED MITOCHONDRIA. June R. Aprille, Tufts University, Department Biology Medford, MA.

Reye's Syndrome (RS) serum added to isolated rat liver mitochondria caused a stimulation of O_2 consumption [BBRC 79:1122 (1977)]. This suggested a metabolic toxin in the serum with activity against mitochondria. Recently, the substance responsible for the serum activity was identified as uric acid [BBRC 94:381 (1980)]. However, it appeared that uric acid had no direct effect on mitochondria. Instead, it was suspected that the stimulation of O_2 consumption was a result of the oxidation of the added uric acid by peroxisomes, which are usually present with rat liver mitochondria prepared by differential centrifugation. This was confirmed by separating mitochondria and peroxisomes, in which case the serum effect followed the peroxisomal fraction. Further study showed that all of the serum activity detected in the bioassay was attributable to uric acid oxidation. The concentration of uric acid in serum was directly correlated with the magnitude of the serum effect on O_2 utilization, and uricase treatment of serum abolished its effect on O_2 consumption. In summary, the particular bioassay used in these studies detected uric acid, which is not a genuine pathogenic factor in RS. The search for "serum factors" should be continued using this general approach, but employing different bioassays to detect adverse effects on metabolic function. (Supp. by NIH NS 14936)