1612 **IMMUNOLOGICAL PARAMETERS AND INCIDENCE OF PERITONITIS IN CHILDREN ON CAPD.** Jacques M. Lemire, Isidro B. Salusky, Rebecca Sakai, Stanley C. Jordan, and Richard N. Fine. Div of Ped Nephrol, UCLA Medical Center, Los Angeles, Calif. 90024.

CAPD is a growing modality of treatment for children with ESRD; however peritonitis is the major complication. We therefore evaluated serum IgG levels and immunoglobulin (Ig) production in 14 children undergoing CAPD for 18.2m (r=4-46m). Mean age was 13.9 yrs (r=0.8-20.5). Peripheral blood lymphocytes (PBLs) were isolated and cultured spontaneously with pokeweed mitogen (PWM), protein A from Staphylococcus aureus or Candida albicans for 12 days. Culture supernatants were assayed for IgG and IgM by enzyme-linked immunosorbent assay (ELISA). Final serum IgG levels correlated with initial serum IgG ($r=0.81$, $p<0.01$). Mean initial serum IgG levels correlated inversely with the number of episodes of peritonitis ($r=-0.61$, $p<0.02$). Ig production by pts PBLs was significantly reduced in spontaneous or activated cultures compared to normal controls. The increment in IgG production by PWM-stimulated lymphocytes from spontaneous cultures tended to correlate inversely with the frequency of peritonitis. A depressed humoral response in children with ESRD undergoing CAPD may predispose to peritonitis.

1613 INDIRECT EVIDENCE OF INTRAGLOMERULAR PLATELET ACTIVATION IN A SUBTYPE OF CHILDHOOD NEPHROTIC SYNDROME, FOCAL SEGMENTAL GLOMERULOSCLEROSIS. Michael R. Leone, Robert J. Hitzemann, C.F. Strife. Departments of Pediatrics, Oregon Health Sciences University and the Univ. of Cincinnati.

The theory that platelets once activated to secrete their granule constituents may continue to circulate in an "exhausted" state has found basis in experimental research, and has led clinical investigators to utilize the measurement of platelet serotonin content as an indirect reflection of in vivo platelet activation. In a patient with clinical and laboratory evidence of glomerulopathy, but without evident disease activity elsewhere, a low level of intraplatelet serotonin indicates that platelet activation is occuring within the glomerulus. To test the hypothesis that intraglomerular platelet activation is integral to the evolution and maintenance of glomerular injury in FSGS we have measured platelet serotonin content in 15 patients with biopsy-proven FSGS, 11 patients with treatment responsive N.S., and 20 normal controls. Expressed as nanograms 5-HT per 10^9 platelets, the following results were obtained:

	FSGS(n=15)	Treatment-responsive N.S.	Controls
MEAN	477($p<0.005$)	686	868
SEM	±63	±56	±65

Nine of fifteen FSGS patients and all patients in the treatment-responsive N.S. group were nephrotic at the time of study. We feel that these results indicate that, as a group, patients with the histopathology of FSGS have a statistically significant reduction in platelet serotonin content, that the nephrotic state per se does not influence the level of platelet serotonin and that platelet activation is involved in the sclerosing glomerulopathy.

1614 RENAL FUNCTION IN CYSTIC FIBROSIS (CF) G.Marra,S.Tirelli,G.Cavanna,M.Amoretti,A.Giunta,A.Claris Appiani B.M.Assael (Spon by F.Sereni)Dept.of Ped.Univ.of Milan Italy

9 CF patients (15 to 18 years old;Schwachman score 80-90)and 7 control subjects (C) matched for age were investigated for glomerular function (Clin ml/min 1.73sqm)Na,HCO_3^- urinary ecretion;Na HCO_3^- distal delivery)(DD:CH_2O+CNa;CH_2O+$CHCO_3^-$)during maximal water diuresis (I)and with isotonic saline infusion (4 ml/kg/min, II).Comparison between groups was performed by the Student t test Results;mean (± SD)

	I		II	
	CF	C	CF	C
Cin (ml/min/1.73)	131(14)*	115(17)	143(46)ns	117(21)
UNa V/100 GF	17(.1)ns	22(.1)	22(.01)*	5(.35)
$UHCO_3$ V/100 GF	27(20)***	133(84)	8.4(18)***	58(33)
$DDNa^-$/100 GF	10(2)ns	17(5)	8.4(2.2)**	12(1.4)
$DDHCO_3^-$/100 GF	10(2)**	17(5)	6.1(3)***	12.6(2)

p 0.05* p 0.01** p 0.001***

These data show that proximal tubular reabsorption of both Na and HCO_3^- is increased in CF.

No difference was found in distal tubular function studied by measuring the urinary excretion of NH_4^+ and percentage of Na distal reabsorption.

●1615 ALTERNATE DAY (QOD) PREDNISONE IN MEMBRANOPROLIFERATIVE GLOMERULONEPHRITIS (MPGN): RESULTS ON 48 CHILDREN, 1957 THROUGH 1983. Paul T. McEnery, Clark D. West and A. James McAdams, Children's Hospital Research Foundation, Cincinnati, Ohio.

In 1980, we reported that in 27 children with MPGN, treatment with high dose qod prednisone preserved renal function and improved glomerular morphology. To date, 48 children have been treated for periods of 2 to 20 years (mean 8 years) with prednisone in a dose of 2 mg/kg qod to a maximum dose of 80 mg qod until a renal biopsy 2 years after the start of treatment. Thereafter, the dose has been slowly reduced to a maintenance of 20 mg qod. Of the 43 patients with improvement, the interval between disease discovery and initiation of therapy was 1.5 years while in those 5 who developed ESRD the interval averaged 5 years. Survival was not related to MPGN type. Serial renal biopsies have shown improvement in glomerular morphology. Persistent hypertension responded well to antihypertensive medication. Most of the children had some decrease in height increment with the prednisone regimen. Life table analysis indicates a 97% survival 10 years after diagnosis and 88% survival after 11 years. Habib, et.al. and Cameron, et.al. have both reported survival of 50% at 10 years in a series of, respectively, 105 and 45 children. The less impressive outcome of patients in the controlled trial of alternate day prednisone as reported by the International Study of Kidney Disease in Children is unclear.

1616 STRONG ASSOCIATION OF HLA-DR8 WITH STEROID RESPONSIVE NEPHROTIC SYNDROME (SRNS) OF CHILDHOOD. Paul T. McEnery, Thomas R. Welch and Kamala Balakrishnan, University of Cincinnati, Children's Hospital Research Foundation, Cincinnati, Ohio.

We searched for possible immunogenetic markers in SRNS of childhood in 4 different families and children having SRNS. Family A had a boy with SRNS whose father had been treated for childhood SRNS. Family B had 2 first cousin girls and Family C had 2 first cousin boys with SRNS. Family D had a brother and sister with SRNS. HLA-A, -B, -DR antigens were typed, serum C4 and factor B alleles were tested and compared to a group of 30 children with SRNS and a control group of normal individuals. In SRNS the frequency of DRW-8 was 23.5% compared to the normal control 5.9%. DRW-8 was also present in the family with the 2 sibs and 1 family where first cousins had SRNS, but not in the other families. The relative risk of DRW-8 and SRNS measured 5.6. There was a decreased frequency of HLA-BW35 and DRW1, but other HLA-A, HLA-B locus antigens, C4 alleles and factor B alleles occurred in normal frequencies. This report involving families and an unrelated population of children with SRNS failed to find the previously associated increased frequency of DRW-7 and the HLA-B12 nor the increased frequency of relapsing SRNS in children with the factor B-F allele. The significance of genetic haplotyping and completyping in children with SRNS will be discussed and the possible relationship and pathogenesis to an MHC-linked Ir gene.

1617 **PROTEIN SYNTHESIS, ENERGY LEVEL AND CELL AMINO ACID IMBALANCE IN CHRONIC UREMICS.** Jack Metcoff, Seschachalam Dutta, Gayle Burns, James Pederson, Billy Matter, Owen Rennert. University of Oklahoma Health Sciences Center, Departments of Pediatrics, Medicine and Biochemisty and VA Hospital, Oklahoma City, OK 73190

To improve protein synthesis (PS) and Energy charge (Ech) should require correction of imbalanced intracellular amino acid levels. In 40 adult chronic uremics stabilized by hemodialysis, multiple regression analysis identified combinations of cell amino acid levels predicting intracellular PS (^{3}H-Leucine incorp) (PS=10.8 + 0.02 ASP -0.127 VAL + 0.54 ILE + 0.032 ORN -0.12 LYS -0.10 TRP (R^2= 0.40, p=0.019)) and Energy charge (Ech=ATP + 1/2 ADP/ATP + ADP + AMP) (Ech (x 10^3) = 766 -0.75 ASP + 0.18 GLU + 0.59 GLY + 0.53 ORN -0.33 ARG (R^2=0.33, p=0.036)). PS and Ech were reduced compared to 32 normals. The leukocyte (~90% Pm neutrophils) was used as the cell model. 18 adult chronic uremics, stabilized on 3x/wk hemodialysis, were infused with 500ml 10% amino acid solution after each dialysis, dialyzer detached, for 3 months, receiving in toto ~ 1.5-1.9kg synthetic amino acids. Baseline studies showed decreased ($p<.05$) PS, Ech and in vitro glycolytic flux (glucose → lactate). The amino acid infusions led to decreased blood pressure and plasma cholesterol level, but did not significantly improve cell bioactivities. The intracellular amino acid imbalance worsened: valine, isoleucine, leucine, methionine, lysine and ornithine were reduced; arginine + glycine were increased. Only tyrosine and phenylalanine levels normalized. We ascribe failure to correct cell bioactivities to failure to correct the cell amino acid imbalance. The leukocyte is a useful cell model to formulate and evaluate therapies to correct abnormal cell metabolism in uremics.