1063 RAPIDLY PROGRESSIVE GLOMERULONEPHRITIS (RPGN) IN CHILDREN. Robert J. Cunningham, M. Gilfoil, B. H. Brouhard, and L. B. Travis, Department of Pediatrics, The University of Texas Medical Branch, Galveston, Texas, 77550.

The purpose of this study is to examine the clinical and pathological features of RPGN with regard to their prognostic value and to determine the efficacy of anticoagulant therapy. RPGN is a disease clinically characterized by rapid progression to renal failure. The pathological hallmark of this disease is the presence of glomerular crescents. Thirteen patients (PTS) who presented with glomerulonephritis and whose renal biopsy showed crescents which circumscribed on all of at least 180° in 50% of the glomeruli are the subjects of this study. Twelve PTS had an acute onset of gross hematuria in association with the nephrotic syndrome. Eleven of 13 PTS were hypertensive, 9 had hemoglobin < 9 gm %, and 8 had significant hypergammaglobulinemia. Eight PTS had a documented streptococcal infection, 4 progressed to chronic renal failure (CRF), 3/4 patients who were not treated and 1/4 PTS treated with anticoagulant therapy. Two PTS had membranoproliferative glomerulonephritis, one PT was treated with AC; both are well 4 and 8 years later. Three PTS had idiopathic RPGN, 1 received AC; this patient has recovered. It is concluded that the most consistent prognosticator is the extent of crescent formation and not the underlying etiology. A trial of AC therapy is warranted in a PT with extensive crescent formation regardless of etiology.

1064 RESPONSE OF THE FETAL LAMB KIDNEY TO VASOPRESSIN AND NOREPINEPHRINE. Salha Daniel, Jacques Milliez, Raymond Stark, Samuel Bruce, L. Stanley James, Div. of Perinatal Medicine, Coll. of P & S, Columbia Univ., N. Y.

Following asphyxia from occlusion of the umbilical cord there is a loss of electrolytes in the urine of the fetal lamb. Since both vasopressin (VP) and catecholamine levels are elevated in fetal blood during asphyxia, experiments have been conducted on 14 fetal lambs, chronically instrumented to determine whether there is a relationship between these hormones and the changes in renal function. Administration of VP (5.0-10 mU/kg over 1 min) increased urinary output from 0.17 to a maximum of 0.58 ml/kg/min., and urine osmolality from 149 to 310 mOsm/kg at the end of one hour. Urine sodium & chloride concentrations increased & free water clearance decreased from 0.08 to 0.02 ml/kg/min. These changes persisted over two hours after the administration of VP. Fetal BP increased only transiently by a maximum of 15 mmHg following VP. Administration of norepinephrine at a rate of 0.5 µg/kg/min. over 30 minutes resulted in an increase in urine output from 0.25 to 0.55 ml/kg/min. Urine osmolality decreased from 150 to 128 mOsm/kg. Free water clearance increased from 0.13 to 0.27 ml/kg/min., while urine sodium and chloride concentrations remained the same. Control values were achieved one hour after the end of the infusion. At this rate of administration norepinephrine had minimal and only transient effect on fetal BP, HR and plasma renin activity. Thus, in the doses given vasopressin elicited a sodium diuresis and norepinephrine a water diuresis. The combined effect of these two hormones could thus lead to a loss of water and electrolytes.

1065 THE SIGNIFICANCE OF ELECTRON DENSE DEPOSITS IN MILD LUPUS NEPHRITIS. Douglas T. Domoto, Norman J. Siegel, Michael Kashgarian. Yale Sch. of Med., New Haven, Ct.

The prognostic significance of mild proliferative lupus nephritis (focal or pure mesangial proliferation) has remained unclear because previous reports have failed to correlate changes on both light (LM) and electron (EM) microscopy with the clinical course. Twenty-one pts with SLE and a mild proliferative lesion on LM of the initial renal biopsy (RBx) were studied. In 11 cases either no electron dense deposits (6 pts) or deposits limited to the mesangial region alone (5 pts) were seen on EM. All 11 pts have had a good clinical outcome (mean followup 35 mo.) with normal BP and improved or normal renal function. Proteinuria increased in one pt to 0.6 Gm/d and in another pt to 5.0 Gm/d. A 2nd RBx in the latter pt revealed a membranous lesion with subepithelial deposits. In the remaining 10 pts abundant subendothelial electron dense deposits were present by EM on the initial RBx. Five of these pts have been stable or improved clinically (mean followup 30 mo.). However, the other 5 pts have all deteriorated clinically with increased proteinuria, reduced renal function, and significant HBP (mean followup 35 mo.). A second RBx in 4 of these pts revealed severe proliferative changes with persistence of subendothelial deposits. Three of these pts have died and one is on hemodialysis.

These data indicate 1) progression and clinical deterioration was seen only in pts with persistent subendothelial deposits; and 2) the location of electron dense deposits by EM was of greater significance than the degree of proliferation by LM.

1066 EXPERIMENTAL IgA NEPHROPATHY IN MICE. Dennis P. Durante, Greg Auchenbach, Nisan Gilboa, and Rawle M. McIntosh, University of Colorado Medical Center, Dept. of Peds and Path., Denver, Colorado.

IgA mesangial deposits are commonly associated with IgA-IgG nephropathy (Berger's disease) and anaphylactoid purpura. Since it has been demonstrated that orally administered ferritin induces specific IgA anti-ferritin antibody in mice, we studied the effects of orally administered ferritin on renal structure and immunohistology in four groups of adult Swiss Webster mice. Group I received ferritin (1mg/ml) in drinking water for 30 days. Group II received the same plus 20 mg Ferritin IP on day 29. Group III received only 20 mg of Ferritin IP 24 hours before sacrifice. Group IV were normal adult mice. Animals were sacrificed on day 30. Immunohistology revealed granular deposits of IgA in the mesangium of 9/11 animals in Group I; 7 of the animals in this group showed IgG, 6 C3, and 1 fibrinogen in a similar pattern. In Group II immunoglobulin deposition was similar, but less pronounced. One animal in Group III showed IgA but no IgG or C3. None of the animals in Group IV showed immunohistologic changes. Light microscopy changes were not significant in any group. EM on selected specimens from Group I showed abundant mesangial, paramesangial, and subendothelial electron dense deposits as well as ferritin-like particles. These preliminary studies suggest a role for oral sensitization in nephropathy characterized by predominant IgA deposition and provides an experimental animal model of IgA mesangial deposit disease.

1067 SODIUM BALANCE IN VERY LOW BIRTH WEIGHT INFANTS Stephen C. Engelke, Bhavesh L. Shah, Usha Vasan, John R. Raye (Spon. by Martha L. Lepow) University of Connecticut Health Center, Department of Pediatrics, Farmington.

The daily sodium requirement in very low birth weight infants is unknown. For this reason, sodium balance was studied in 16 consecutive neonates weighing <1200 grams at birth. Group I, 12 infants <30 weeks gestational age (955 ± 35 gms.); Group II, 4 infants >30 weeks gestational age (997 ± 78 gms.). Weight, sodium and fluid intake, and serum sodium were measured daily. 24 hour urinary sodium losses and creatinine clearances were determined on days 3 and 8.

Group I had greater mean urinary sodium losses on day 3 (17.1 vs. 2.9 mEq/kg/24hr., p <0.001) and were in negative sodium balance (-9.2 vs. + 1.0, p <0.02) compared to Group II. This was associated with a greater incidence of hyponatremia, and an increased weight loss through day 4 (12% vs. 3%). By day 8, Group I showed a significant rise in sodium balance compared to day 3 (+1.2 mEq/kg/24hr., p <0.001) and no longer differed from Group II.

There was no significant difference in mean creatinine clearance on day 3 between the groups (8.8 vs. 6.9 ml/min/1.73m^2) and both groups showed a rise by day 8. Fractional sodium excretion was inversely correlated with creatinine clearance.

Thus, in the first days of life the group of infants <30 weeks gestational age was in negative sodium balance despite a mean sodium intake of 7.9 mEq/kg/d. This data suggests a very high daily sodium requirement in these immature infants.

1068 e ANTIGEN IN CHILDREN UNDERGOING DIALYSIS AND TRANSPLANTATION: A SERIAL STUDY. Robert B. Ettenger, James Mosley, Harry T. Wright, Jr., Mohammad H. Malekzadeh, Alfred J. Pennisi, Christel H. Ulttenbogaart and Richard N. Fine. Univ. So. Calif. Sch. Med. and Childrens Hospital of Los Angeles.

Between June 1970 and July 1976, all patients entering the Dialysis and Transplantation Program were tested serially for hepatitis B surface antigen (HB_sag). 36 patients became HB_sag positive (+). e antigen (e) testing was performed by rheophoresis on sera at the time of : 1) initial HB_sag + (only 29 sera available) ; 2) highest HB_sag titre; 3) highest transaminase enzyme abnormalities; 4) the latest HB_sag + sera. Of 36 patients, 28 (75%) had at least one e+ serum. e+ sera were found in 41% of patients at initial HB_sag titre; in 68% coincident with the highest HB_sag titre; in 62% coincident with the highest transaminase levels; and in 72% at their most recent determination. Of 12 patients identified as e+ at initial HB_sag testing, 8 remained e+ and 2 were intermittently e+. Of 17 initially e negative (-), 10 became consistently e+, 4 remained e- and 3 became intermittently e+. 31 patients were persistently HB_sag + for 4 to 51 months; 28 were e+ at least once. None of the 5 patients transiently HB_sag + were e+ ($P<0.0001$). Mean transaminase values at the time of each e determination were not significantly different when e+ and e- serums were compared. The data indicate that persistence of HB_sag correlates with the presence of e in children undergoing dialysis and transplantation; hepatic enzyme abnormalities are not similarly correlated. Conversion to e+ often occurs after e- and may account for persistent transmissability of HB_sag noted in these patients.