1600 URINARY LDH IN URINARY TRACT INFECTIONS. Stanley Hellerstein, Eileen Duggan, Becky Savage. The Children's Mercy Hospital, Department of Pediatrics, Kansas City, Missouri.

Three published reports show increased activity of the slow moving LDH isoenzymes in the urine of children with upper urinary tract infections. We studied urinary LDH enzyme activity during 88 urinary tract infections in girls in whom the site of infection was localized using the bladder washout test (BWO).

SITE OF UTI BY BLADDER WASHOUT	NO.	URINARY LDH TOTAL mU/ml	ISOENZYME 4 %	ISOENZYME 5 %
Uninfected	25	11.5 ± 5.6	3.9 ± 4.9	5.0 ± 7.3
Lower	49	20.9 ± 21.3	11.2 ± 7.4	14.4 ± 11.9
Upper	20	21.7 ± 12.6	13.7 ± 6.0	17.5 ± 12.2
Undetermined	19	23.8 ± 23.4	14.4 ± 7.4	19.4 ± 12.0

These data do not distinguish patients with upper tract from those with lower tract infections. We also compared urinary LDH activity in girls with BWO confirmed clinical cystitis with those with BWO confirmed clinical pyelonephritis.

SITE OF UTI BY BLADDER WASHOUT	NO.	URINARY LDH TOTAL mU/ml	ISOENZYME 4 %	ISOENZYME 5 %
Cystitis	24	25.7 ± 29.2	13.3 ± 6.1	17.0 ± 18.3
Pyelonephritis	7	26.4 ± 10.0	15.0 ± 4.1	18.3 ± 12.5

There were no significant differences in LDH activity between these two groups of patients.

1601 URINARY CALCIUM/CREATININE RATIO IN VERY LOW BIRTH WEIGHT INFANTS, Alfredo J. Herrera, M.D., Mark Harris, M.D., St. Agnes Hospital, Department of Pediatrics, Baltimore, Maryland (Sponsored by John Neff, M.D.)

Little is known about the urinary calcium excretion in the neonate and especially in VLBW infants. Preliminary reports indicate that this excretion may be elevated if compared to other children; it may even be an important factor in the etiology of neonatal hypocalcemia. Every VLBW infant admitted to our NICU was divided into two groups, a control and a treatment group. Urinary Ca/Cr ratios were obtained within the first 24 hrs. and then every 48 hrs. in every infant; the treatment group received parenteral supplementation with Calcium Gluconate 100 mg/kg/day. We had 5 babies in the control group and 8 in the treatment group. The urinary Ca/Cr obtained in the first 24 hrs. in the treatment group was 0.060+0.008 compared to 0.023+0.010 in the control group, a non-significant difference. Even with this very low early urinary excretion of calcium, 64% of the infants developed hypocalcemia. This seems to indicate that urinary excretion of calcium has a limited role in neonatal hypocalcemia. All of the infants in the treatment group developed hypercalciuria by the second 100 hours of life (0.64+0.16) whereas the control group did not (0.15+0.05); urinary Ca/Cr ratios in excess of 0.25 were considered to represent hypercalciuria. The treatment group not only became hypercalciuric, but remained hypercalciuric throughout the study period. In contrast, the control group remained normocalciuric during the 14 days of the study. According to our preliminary data, it seems that there is a close relationship between parenteral calcium therapy and urinary calcium excretion.

●1602 MULTICENTER STUDY OF OUTCOME INDICATORS IN CHILDREN WITH SEVERE CRESCENTIC GLOMERULONEPHRITIS (CrGN). Ronald J. Hogg for the Southwest Pediatric Nephrology Study Group, Dept. Pediatrics, Southwestern Medical School, Dallas, TX (Spon. by Joseph B. Warshaw).

Previous studies from small series of patients have suggested that the prognosis of children with CrGN may be predicted on the basis of % glomeruli (G) with crescent (Cr) formation, rather than the underlying type of GN. We have re-evaluated this issue in 50 children with a variety of renal diseases in whom renal biopsies showed Cr in >50% of G. 67 clinical and 53 biopsy variables were analyzed in 30 girls and 20 boys with a mean age of 10.1 yrs (range 1.7-17.2 yrs). Presenting features included edema in 61%; hypertension (HT) in 51%; gross hematuria in 73%; 3-4+ proteinuria in 78%; and ↓↓GFR (<30 ml/min/ 1.73m^2) in 66%. When the total group was divided into those with 50-79% Cr (n=18) and those with 80-100% Cr (n=32), no difference in outcome could be demonstrated, with end-stage renal disease (ESRD) being seen in 44% and 50% of the two gps. Features that did indicate a poor prognosis included G sclerosis (p=0.05); G IgM (p=0.003); interstitial fibrosis (p=0.03); tubular atrophy (p=0.04); predominance of large Cr (p=0.004) or fibrous Cr (p=0.03) and ↑frequency of gaps in Bowman's capsule (p=0.004). Persistent ↓↓GFR was not seen in 6/6 pts with post-strep GN, but present in 60% of pts with other conditions. We conclude (1) pts with severe Cr GN often progress to ESRD and (2) helpful prognostic indicators include the underlying type of GN and evidence of chronic histologic changes, but not the percent of glomerular crescents.

1603 CLINICAL AND LABORATORY INDICATORS OF VESICOURETERAL REFLUX (VUR). C.E.Johnson, C.D.Marchant, P.A.Shurin, C.S.Strieter, B.P.De Baz, Z.R. Shah, Case Western Reserve Univ. School of Medicine and Cleveland Metropolitan General Hospital, Departments of Pediatrics and Radiology, Cleveland, Ohio.

Tests are needed to identify children with urinary infection (UTI) who are at high risk for having VUR and other treatable abnormalities. To identify risk factors, we studied 40 children <13 years old who had UTI. History of previous UTI, race, age, temperature, C-reactive protein (CRP) and renal concentrating ability after intranasal administration of 1-deamino-8-D-arginine vasopressin (DDAVP) were evaluated as predictors of abnormalities. IVP, voiding cystogram and renal ultrasound were done in all patients. VUR was present in 7/40 (18%) and was the only treatable abnormality found. Results: The proportion of subjects with VUR were: Race: White 7/32 (22%); Black 0/8. Age: <5 yrs. 7/26 (27%); ≥5 yrs. 0/14. Fever: ≥38C, 6/14 (43%); <38C, 1/26 (4%). Six of ten White children <5 yrs. who were febrile had VUR; only 4% (1/25) of children not in this group had VUR (p=0.0007). History of a prior UTI was not of predictive value. Laboratory tests and the proportion of subjects with VUR were: CRP: >10 mg/dl, 5/14 (36%); ≤10mg/dl, 1/19 (5%) (p=0.036). Maximum urine osmolality with DDAVP: <800 mosm 5/14 (35%), ≥800 mosm 1/12 (8%) (p=0.117). Conclusions: Race, age and presence of fever identify the majority of children with VUR. CRP and the DDAVP test may be of additional value in identifying high-risk children.

1604 CALCIUM AND PHOSPHORUS METABOLISM IN CHILDREN WITH RENAL FAILURE: THE EFFECT OF DIFFERENT DIALYSIS MODALITIES. Bruce A.Kaiser, Alan W. Root, Alan B.Gruskin, Martin S.Polinsky, H.Jorge Baluarte. St. Christopher's Hospital for Children, Temple Univ. Sch. of Med., Phila., PA.

Abnormalities of calcium and phosphorus metabolism and hyperparathyroidism are major problems for children with renal failure. It is hoped that dialysis will reverse these problems and prevent the progression of renal osteodystrophy. Children starting either hemodialysis(HD,n=18), intermittent peritoneal dialysis (IPD, n=16)or continuous ambulatory peritoneal dialysis(CAPD,n=12)and remaining on the same modality for 6 months were compared for serum calcium(Ca), phosphorus (P), alkaline phosphatase (A-p), parathyroid hormone(PTH)and the oral aluminum hydroxide dose (Al-d) required. All children received dihydrotachysterol or calcitriol.

Onset	Ca (mg%)	P (mg%)	A-p (units)	PTH (pg/ml)	Al-d (mg/kg/day)
HD	8.7±.3	6.8±.4	337±59	1651±340	145±23
IPD	9.0±.4	6.3±.4	206±39	1651±361	87±17
CAPD	8.9±.3	6.6±.6	285±62	829±184	111±26
6 months					
HD	9.9±.2**	5.9±.3	377±119	1287±346	114±14
IPD	9.4±.3	5.9±.4	265±57	1762±434	122±15
CAPD	9.5±.3	5.2±.2*	238±54	1114±389	82±23

$\bar{x}$±SEM: Significantly improved from onset, within a group; *p<.05, **p<.001

Children started dialysis with abnormalities in Ca and P metabolism and although serum Ca and P improved on dialysis, PTH and Al-d did not decrease. In addition, there was no significant difference in any parameters between the different dialysis modalities. Therefore, earlier and more aggressive medical treatment prior to dialysis and early transplant in children may be the best approach to normalize Ca and P metabolism, since dialysis offers little benefit.

1605 PERIPHERAL NERVE CONDUCTION STUDIES IN PASSIVELY ADDICTED NEONATES. Tatiana M. Doberczak, Stephen R. Kandall, Orawan Rongkapan, Sylvain M. Weinberger, Wolfram Loewenstein, (Spon. by Walter L. Henley). Beth Israel Med. Ctr., Depts. of Pediatrics and Rehabilitation Medicine, New York.

The contribution of the peripheral nervous system to the neonatal abstinence syndrome was evaluated. Nerve conduction velocities were determined in 25 passively addicted(PA)infants born to mothers receiving methadone maintenance; 12 of the mothers abused other drugs concomitantly. Nerve conduction velocities in PA infants, both at 3-7 days and 3-4 weeks of age, did not differ from those of 11 control infants. Within the PA group, no conduction velocity differences($p>0.1$) were noted when comparing (a)maternal methadone use versus polydrug abuse, (b) mild versus severe neonatal abstinence, and (c)neonatal treatment with either paregoric or phenobarbital. Nerve conduction velocities were also normal in 3 PA infants who developed abstinence-related seizures. No relationship could be demonstrated between nerve conduction velocities and severity of abstinence on day of study($p>0.4$). Electromyographic studies were normal in 23 PA infants; the remaining two infants displayed minimal denervation abnormalities.

Since 2-5 year follow-ups in PA infants have shown motor dysfunction and since this study fails to document a peripheral nervous system component to this dysfunction, the role of the central nervous system should be the prime focus of future research in the neonatal abstinence syndrome.