

1654 THE USE OF FINE NEEDLE ASPIRATION BIOPSY (FNAB) FOR MONITORING IMMUNOLOGIC PHENOMENA POST-RENAL TRANSPLANTATION IN CHILDREN. Michael A. Tabak, Mark A. Du Puis, Robert B. Ettenger, Richard N. Fine. Depts. Ped. & Path., Div. Ped. Nephrology, UCLA CHS, L.A. Calif.

No previous reports have described the use of FNAB in children. 70 FNAB were performed in 11 renal transplant (Tx) recipients with a mean age of 14.6 yrs. during the initial 6 post Tx months. The number of serial FNAB's ranged from 1-15. Initial local infiltrative anesthesia was replaced with surface anesthesia (ethyl chloride) because of inadequate specimens without subjective discomfort. An increase in adequate FNAB specimens from 44% to 81% resulted. No complications were noted. Serous fluid was obtained in 4 instances: perirenal lymphatic collection (2) and peritoneal fluid from CAPD (2). Ultrasonography facilitated subsequent FNAB's in these patients.

Cytologic interpretations of the FNAB yielded a corrected cellular index (C.I.) indicating an increment of Tx mononuclear cells over those in the peripheral blood. A correlation between an increase in the C.I. (>3.0) and a rise in the serum creatinine (Cr) level (>30% increase) was noted. The increment in the C.I. occurred as early as 10 days prior to the rise in the serum Cr level. Resolution of the rejection episode coincided with a fall in the C.I. in 100% of cases (2/2). No false C.I.'s were noted.

We conclude that the FNAB is an effective tool for monitoring immunologic events in renal Tx recipients.

1655 PROGRESSIVE RENAL DAMAGE DUE TO LEAD INTOXICATION IN EARLY LIFE. O. Adamson, I. Lancman, S. Rajkumar, B. Kaul, A. Tejani. (Spon. by Q. Qazi). DMC, SUNY, Dept. of Peds, Brooklyn, NY.

Three week old Sprague-Dawley rats, mean body weight of 50 gms, were injected intraperitoneally with 100 mg/kg of 1% lead acetate (PbAc) twice, 1 day apart. Control rats received 1% sodium acetate (NaAc). Renal plasma flow (RPF) and glomerular filtration rate (GFR) were measured using para-amino-hippurate and labelled inulin at 2 weeks post-injection. Blood lead concentration (Pb) and intra-arterial blood pressure (BP) were measured at the same time. Studies were repeated at 2 weeks post-injection in 9 week old adult rats, mean body weight 250 gms. (RPF/GFR ml/min/100 gm)

	Young Rats			
	Weight	RPF	GFR	Pb
NaAc	153±3.2	.50±.06	.36±.03	2.5
PbAc	125±3.2	.37±.03	.15±.02	48.2 mgm/dl
	p <.005	p <.065	p <.001	
	Adult Rats			
	Weight	RPF	GFR	Pb
NaAc	326±6.0	.54±.05	.24±.01	2.5
PbAc	268±4.7	.41±.08	.21±.04	160 mgm/dl
	p <.001	p N.S.	p N.S.	

Studies on young rats repeated at 4 weeks post-injection showed both RPF and GFR significantly reduced in the PbAc group compared to those receiving NaAc. No differences in BP were noticed between control and experimental animals in either group. Increased sensitivity of rapidly multiplying cells to noxious agents probably accounts for the observed difference.

1656 HIGH RATE OF MORPHOLOGICAL TRANSITION IN CHILDREN WITH STEROID SENSITIVE MINIMAL CHANGE NEPHROTIC SYNDROME (M.C.N.S.). Kishore Phadke, Orlando Adamson, Anthony Nicastril, Howard Trachtman, Amir Tejani. SUNY, DMC, Renal Division, Depts. of Peds and Pathology, Brooklyn, NY.

We reviewed the clinical course and morphology of 48 children with biopsy proven M.C.N.S. with a minimum follow-up of at least 5 years. Mean age at onset was 4.1 yrs (11 mo-16 yrs). Mean follow-up was 11.2 yrs (5-18). 33 of 48 children (66%) underwent a second biopsy at a mean time of 4.5 yrs after the first biopsy because of frequent relapses or steroid dependence. 15 (45%) converted to focal segmental sclerosis (F.S.G.S.). 9 (27%) evolved into IgM nephropathy and only 9 (27%) retained the original morphology of M.C.N.S. 6 of these 9 patients with M.C.N.S. had a 3rd biopsy. Only one showed persistent M.C.N.S., and he converted to IgM nephropathy on 4th biopsy.

Overall, among patients undergoing repeat renal biopsies, only 12% continued to show a persistent M.C.N.S. lesion, the rest evolving into IgM nephropathy or F.S.G.S. Analysis of age at onset, frequency of hematuria, hypertension or elevated creatinine at onset did not distinguish the children with morphological transition from the remaining ones.

At the end of the study, 25% of these children are dead of renal causes, on dialysis, transplanted or in chronic renal failure with a creatinine clearance less than 20 ml/min.

Our study concludes that a very high frequency of morphological transition is present in M.C.N.S. patients who have a relapsing or steroid dependent course and that the prognosis in these cases is guarded.

1657 CYCLOSPORINE (CY) AS THE SOLE IMMUNOSUPPRESSANT FOR 2ND AND 3RD TRANSPLANTS IN CHILDREN. Amir Tejani, Kishore Phadke, Orlando Adamson, Howard Trachtman. (Spon. by Q. Qazi). DMC, SUNY, Dept. of Peds, Brooklyn, NY.

Under a protocol designed to utilize the steroid (S) sparing effect of CY, we have used it for repeat transplant in 5 children, all of whom had growth retardation. CY was administered intravenously in 5 mg/kg dose for the first 2 days and then orally in a liquid form at a dose of 15 mg/kg, gradually reducing it to 7 mg/kg. S therapy was started at 10-20 mg/daily to be gradually tapered to withdrawal at 3 months post-transplant.

No.	Type of Graft	Serum Creatinine	Months Post transplant	Dose of S	Dose of CY
1	2nd L*	0.6 mg%	4	0	7 mg
2	3rd C*	1.2 mg%	6	0	7 mg
3	2nd C	0.5 mg%	3	0	7 mg
4	2nd C	1.2 mg%	3	0	7 mg
5	2nd L	1.2 mg%	2.5	10	7 mg

*Live-related parent donor *Cadaver donor
Hirsutism (3/5), asymptomatic hepato-toxicity (1/5) and nephrotoxicity (1/5) were the only side effects.

The first patient, 2 weeks after steroid withdrawal developed fever for 1 day, suffered a circulatory collapse and died. Post-mortem showed absence of adrenal tissue. In patient No. 2, following S withdrawal, ACTH stimulation 2 weeks later, showed adequate endogenous cortisol production. Our preliminary data seems to suggest that it is possible to utilize the S sparing effect of CY in maintaining graft function. However, extreme caution is necessary to prevent Addisonian crisis.

1658 HIGH RATE OF MORBIDITY DURING HEMODIALYSIS IN LUPUS NEPHRITIS PATIENTS. Amir Tejani, Orlando Adamson, Kishore Phadke, Howard Trachtman. (Spon. by S. Fikrig). Downstate Med. Ctr., SUNY, Dept. of Peds, Brooklyn, NY.

Children with systemic lupus erythematosus (SLE) who have reached end-stage renal disease and are on maintenance hemodialysis (longer than 6 months), continue to show persistent serological activity for prolonged periods. This sero activity, together with the presence of autoantibodies, may cause delays in obtaining appropriate allografts. We are concerned with the high morbidity rate during hemodialysis in the waiting period. Nine children with SLE were compared to same number of children with focal sclerosis (F.S.) dialyzed for a similar time during the last 2 years.

	S.L.E.	F.S.
Age in years at onset of dialysis (Mean)	13.5	11.5
Duration of dialysis in months (Mean)	9.3	9.1
No. of days in hospital (Mean)	90	39 p <.05
No. of hospitalizations per patient (Mean)	5.6	3.1 p <.05
No. of blood transfusions (Mean)	11	6.8 N.S.
Hypertensive encephalopathy	77%	22% p <.02
Seizures	77%	22% p <.02
Thrombosis/infection of access	62%	11% p <.05
Peptic ulcer	22%	0% N.S.
Parathyroidectomy	11%	0% N.S.

Serological activity of SLE persisted in 3 out of 9 patients for as long as 2 years while on dialysis. Our study points to the need for 1) vigorous measures to prevent hypertensive crises and 2) meticulous care of the hemoaccess to reduce the hospitalization of these children.

1659 LONGITUDINAL STUDY OF RENAL FUNCTION IN UNI-NEPHRECTOMIZED RATS. Amir Tejani, Ina Lancman, Khalid M.H. Butt, Monica Beyers, Madu Rao. (Spon. by I. Glass). Downstate Medical Center, SUNY, Dept. of Peds, Brooklyn, NY.

Hypertension and proteinuria have been reported in some patients as a sequelae of kidney donation. In order to evaluate the long-term effects of a 50% reduction in nephron population, we designed a protocol using male Sprague-Dawley rats (weight 250±20 gms). Animals were subjected to either a sham operation (C) or unilateral nephrectomy (U). Post-surgery animals were maintained on standard lab chow and water ad lib. The protocol is designed to measure intra-arterial blood pressure (BP), glomerular filtration rate (GFR) and renal plasma flow (RPF) at 4, 8, and 12 months post-surgery. GFR and RPF are measured by double radiolabelled technique using C₁₄ labelled inulin and tritium labelled para-amino-hippurate respectively. GFR and RPF are expressed in ml/min/100 gm of body weight. Results at 4 months post-surgery are reported.

Kidney Weight		BP		GFR		RPF	
C	U	C	U	C	U	C	U
2.03	2.6	131	160	0.3	0.29	0.49	0.50
+0.39	+0.3	+13.9	+5.6	+0.07	+0.08	+0.01	+0.01
p=0.01		p=0.001		p=0.7		p=0.5	

No differences between body weight 526±39 for (C) and 505±31 for U were noted. No histological lesions were noted on light microscopy of U kidneys. Our study concludes that following a 50% reduction in nephron population, no deterioration of renal function occurs over a 4 month period, but the presence of hypertension may be an ominous sign for eventual renal damage.