## 1074

POST TRANSPLANT HYPERTENSION IN THE ABSENCE OF REJECTION OR RECURRENT DISEASE. Julie R. Ingelfinger, Raphael H. Levey and Warren E. Grupe. Harvard Medical School, Children's Hosp. Med. Ctr., Dept. of Pediatrics, Boston, Massachusetts

Post-transplant (Tx) hypertension (H) is extremely common among pediatric renal transplant recipients, occurring in 83% of our first 86 patients. In order to study H free of known concomitant causes, we studied those 16 of the 86 consecutive Tx in whom there had never been any rejection episode nor any recurrent disease. Follow-up period was 1-5 years. Patients (P) ranged in age from 3 to 24 years (median 16). All 16 P were hypertensive in the first post-operative week.

Nine P, all with various nephritides, had H pre-Tx, leading to pre-Tx nephrectomies (Nx) in 5. Post-Tx, all 9 were hypertensive during the first 6 months (2 - mild H, 7 - moderate H). By one year post-Tx, blood pressure had normalized in 2 P and was controlled on medication in 5 others. In contrast, of the 7 other patients, all with structural lesions (obstructive uropathy or hypoplasia-dysplasia), none had pre-Tx H, though 3 had pre-Tx Nx. Only 2 of these P had post-Tx H, mild in both. Steroid dosages were comparable in both nephritic and structural groups.

Our experience demonstrates that prior H correlates positively with post-Tx H, irrespective of native kidney nephrectomies. Patients with previous nephritides carry greatest risk of becoming hypertensive. Furthermore, the majority of young renal allograft recipients appear to develop hypertension, even in the absence of rejection or recurrent disease.

## 1075

PREDICTABILITY OF RECURRENCE RATE OF URINARY TRACT INFECTIONS AND RESPONSE TO ANTIBIOTIC THERAPY BASED ON ANTIBODY COATED BACTERIA TESTING. Abdollah Iravani, George A. Richard, Manop Luengnaruemitchai and Robert L. Williams. (Spon. by Stanford T. Shulman)

During the past 15 months, on 345 occasions, college coeds with symptoms of urinary tract infection were evaluated with at least two positive urine cultures (colony count > 100,000 col/ml) and by a non-invasive test of localization called the antibody coated bacteria test (FAT). They were subsequently treated with Cantrisin (114), Trimethoprim (111), Septra (59) and NegGram (61) for periods of 7, 10 or 14 days. 213 (62%) were FAT neg. (bladder infection) and 132 (38%) were FAT pos. (kidney infection). There was no statistically significant difference in the recurrence rates at regular intervals during the 6 months post therapy for either the separate or combined treatment groups.

Recurrence Rate (%)

| | 1 wk | 2 wk | 1 m | 2 m | 3 m | 6 m |
|---|---|---|---|---|---|---|
| FA+ n=132 | 6.0 | 7.0 | 14.8 | 18.3 | 20.0 | 32.0 |
| FA- n=213 | 2.0 | 2.5 | 10.0 | 17.0 | 22.6 | 36.8 |

## 1076

THE EFFICACY OF NEGGRAM AS COMPARED TO SEPTRA IN THE TREATMENT OF URINARY TRACT INFECTION IN COLLEGE COEDS. Abdollah Iravani, George A. Richard, Robert L. Williams and Manop Luengnaruemitchai. Univ. of Fla. Col. of Med. Dept. of Ped., Gainesville (Spon. by Stanford T. Shulman)

During the past 15 months, 126 college coeds, ages 18-22 years, with culture proven acute symptomatic urinary tract infections (at least 2 cultures > 100,000 col/ml) were treated with either NegGram 1.0 Gm QID x 7 days or Septra 2 tab. BID x 10 days.

A comparison of the recurrence rates for the total groups (T.G.) of each medication was not statistically different. Further analysis demonstrated that Septra was no more effective than NegGram during the first 6 months of follow-up in the treatment of upper urinary tract infections (FAT pos.) and lower urinary tract infections (FAT neg.).

| | | | Recurrent Rates (%) | | | | |
|---|---|---|---|---|---|---|---|
| | | During Therapy | 1 wk | 2 wk | 1 m | 3 m | 6 m |
| NegGram | T.G. :n=62 | 2 | 9 | 11 | 24 | 32 | 48 |
| | FAT pos.:n=22 | 5 | 15 | 15 | 25 | 31 | 45 |
| | FAT neg.:n=39 | 0 | 3 | 6 | 21 | 30 | 47 |
| Septra | T.G. :n=64 | 0 | 6 | 6 | 26 | 39 | 50 |
| | FAT pos.:n=16 | 0 | 6 | 6 | 19 | 26 | 33 |
| | FAT neg.:n=43 | 0 | 2 | 2 | 23 | 40 | 54 |

## 1077

RENAL RESPONSE TO ACUTE HYPOXIA IN NEWBORN PUPPIES E.G. John, R. Bhat, D. Vidyasagar, C. Torres, L.C. Aschinberg, L. Wojdula. Abraham Lincoln Sch. of Med., Univ. of Ill. Hosp., Dept. of Ped., Chicago, Ill.

The purpose of this study was to investigate the effect of acute hypoxic hypoxia (H) on renal function in 1 wk old (N) and 6 wk old (O) puppies. Under anesthesia a tracheostomy was performed in all animals. H was induced by administering a gas mixture of 5% $O_2$ and 95% $N_2$ for 45 minutes. Measurements of arterial blood gases, glomerular filteration rate (GFR ml/min) renal blood flow (RBF), osmolar clearance (COS), fractional excretion of sodium ($FE_{Na}$), urinary flow (UV ml/min), and blood pressure (BP) were determined by standard methods, before (C) and during (H). BP, heart rate and hematocrit remained unchanged during the experiment. In N $PO_2$ decreased from a mean value of 75±7 to 20±4 mmHg*, $PCO_2$ decreased from 35±4 to 14±1 mmHg* and pH decreased from 7.6± 0.7 to 7.26±0.12*. Similar changes were seen in O except that the metabolic acidosis was greater than in N*. A greater than 50% decrease in GFR was observed in both groups*. RBF decreased 1.5-fold in N* and 3-fold in O*. $FE_{Na}$ and UV however, increased 17* and 6-fold* in N , while the increase was only 1.3* and 1.25*-fold in O . The reasons for these differences in magnitude of renal response to hypoxia between newborns and older puppies are not clear. Elevated levels of plasma angiotensin and increased renal sensitivity to catecholamines, found in newborns may be responsible for these observed differences.

*(P<.05)

## 1078

EFFECT OF $PGE_2$ (P) ON NEONATAL RENAL FUNCTION E.G. John, C. Samayoa, L. Chan, L. Wojdula, L.C. Aschinberg. (Spon. by Dr. I.M. Rosenthal) Abraham Lincoln Sch. of Med., Univ. of Ill., Dept. of Peds., Chicago, Ill.

Various hypotheses have been put forth regarding the role of prostaglandins (PS) on renal blood flow (RBF) and sodium balance during ontogeny. The inability to excrete a sodium load has been attributed in part to low renal PS and juxtamedullary blood flow distribution in the newborn kidneys. We studied the effect of P on RBF and renal function in 1 and 6 wk old puppies. The femoral vein, artery and ureters were catheterized under anesthesia. Glomerular filteration rate (GFR ml/min), PAH clearance ($C_{PAH}$), fractional excretion of sodium ($FE_{Na}$%) and urinary volume (V ml /min) were determined, before (C) and after (E) a bolus injection of P (30 µg/kg/BW), into the left renal artery. In addition in 1 wk old puppies microspheres were used to study RBF and cortical zonal distribution during C and E period. Intrarenal P injection increased V from 0.05 to 0.08 and from 0.06 to 0.09 in 1 and 6 wk old animals respectively. There were no changes in GFR in 1 wk and 6 wk old animals. $C_{PAH}$ decreased in both groups but was significant only in 1 wk old animals* (1 wk C 4.7±0.5 to 3.0± 0.1, 6 wk C 18±3 to E 13±4). $FE_{Na}$ increased 3-fold in 6 wks* and 1.5-fold in 1 wk. Despite a 50% decline in RBF there were no changes in cortical zonal distribution of RBF following P injection, in 1 wk old puppies. These results suggest: 1) The lack of P is not responsible for the neonatal pattern of RBF. 2) Neonatal kidneys are less sensitive to exogenous P induced natriuresis. * (P<.05)

## 1079

REDUCED CONCENTRATION OF RED BLOOD CELL(RBC)CARBONIC ANHYDRASE(CA)IN A PATIENT WITH NEPHROLITHIASIS. Bernard S.Kaplan and Moira Mills.McGill Univ.-Montreal Children's Hosp.Research Inst.,Dept.of Nephrology, Montreal,Canada.

No underlying cause can be found to account for stone formation in about 1/3 of children with nephrolithiasis.We have found a reduction in total RBC CA activity(measured by the nonspecific esterolytic activity of CA on para-nitrophenyl acetate)in a 6½ yr old boy with idiopathic nephrolithiasis.Over a 2 yr period his CA concentrations(n=5)were 1.4-2.7 units/g Hb(mean=2.06). Age-matched controls measured at the same time(n=5)had values of 3.9-5.3(mean=4.46)units/g Hb($p < 0.001$).CA concentrations of 5 other boys with calculi were(n=8)4.35 compared to 4.58 units/g Hb in controls($p > 0.1$).

CA activity of the proband's father's RBC was also reduced(n=2):2.05 units/g Hb compared with 3.6 units/g Hb in controls.However the concentrations of RBC CA activity in the mother and sister were normal.

Polyacrylamide gel electrophoresis of HFH was abnormal in patient and father but not in mother and sister.Neither B nor C peaks could be demonstrated from proband and father.Although urine acidification appeared to be normal in the patient,he did not have normal postprandial alkaline tides.

We thus appear to have identified a patient in whom reduced RBC CA activity may be associated with a propensity to stone formation.