163 CONGENITAL NEPHROSIS WITH GONADAL DYSGENESIS IN TWINS

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Non-Finnish type congenital nephrosis is uncommon and of heterogen ous etiology. We report congenital nephrosis occurring in monozy gotic twin boys. Family history is otherwise negative for renal disease. The parents are not of Finnish origin and there is no consanguinity. The pregnancy was unremarkable and the placenta not enlarged as in the Finnish variety.

At 10 weeks of age both boys presented with diarrhea. The first twin died suddenly in acute renal failure in another hospital; the second was transferred to our care. A diagnosis of congenital nephrosis was made on admission. Rapid deterioration in renal and respiratory function ensued and the infant died at 12 weeks of age. Post-mortem examination revealed microcystic renal disease with glomeruli showing variable and segmental mesangial hypercellularity and sclerosis. The microscopic appearances were most consistent with diffuse glomerular mesangial as described by Habib et al. In addition, gonadal dysgenesis was also seen. The outer zone of the testes resembled ovarian stroma with a few immature tubular structures as well as a polyovular follicular appearance.

This case represents a rare example of congenital nephrosis associated with abnormal gonadogenesis perhaps best explained by a common insult in embryological development. This association may be representative of the nephropathies previously documented with gonadal dysgenesis and may represent a distinct category of congenital nephrosis.

164 HLA ANTIGENS IN END-STAGE REFLUX NEPHROPATHY (ESRN).

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It has been suggested that primary vesicoureteral reflux (VUR) and/or the susceptibility to develop renal damage from VUR might be determined by gene(s) in linkage disequilibrium with the major histocompatibility complex (MHC). To test this hypothesis, we compared the frequencies of HLA antigens in 44 patients with ESRN with those observed in 526 blood donors used as controls (C). The frequencies of the individual antigens, as well as all possible combinations of HLA-A and HLA-B antigens, were studied.

	Male & Female			Male			Female		
Antigen	C(n526)	VUR(n44)	P	C(n270)	VUR(n18)	P	C(n256)	VUR(n26)	P
B8	21.5	25.0		20.7	38.9		22.3	15.4	
B12	26.0	40.9	.03	24.8	22.2		27.3	53.8	.01
BW15	15.8	27.3	.05	18.1	27.8		13.3	26.9	
A1-B8	18.2	28.5		17.8	38.9	.05	18.8	15.4	
A9-B8	2.8	6.8		2.2	16.7	.01	3.5	0	
A9-BW15	3.0	9.1		2.6	16.7	.02	3.5	3.8	
B7-B12	2.7	11.4	.01	3.3	0		2.0	19.2	.01
B8-BW15	1.9	9.1	.02	1.5	11.1	.05	2.3	7.7	

HLA-BW15, HLA-B12 and HLA-B8 individually or in combination, tended to occur in higher than normal frequency in ESRN. These results suggest that there is an association between the MHC and a genetic predisposition to develop VUR or renal damage from VUR. This finding might add a new insight into the pathogenesis of reflux nephropathy, since the antigens involved have been found in association with organ specific autoimmune and atopic diseases.

165 IMMUNOGENETIC ASPECT IN THE PATIENTS WITH GN

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The subjects of this study consisted of, the First Group which was of 60 cases of acute poststreptococcal GN - which was further classified into the First Group-A which was of 37 cases who had been cured within 12 months and the First Group-B whose cure had taken more than 12 months (23 cases); and the 2nd Group consisting of 129 cases found to have primary GN (chance proteinuria and/or hematuria) at a regular physical examination by urine test, of whom, 22 cases were of chronic GN (2nd Group-A). The typing of the HLA antigens were done in the method of Terasaki's microdroplet lymphocyte cytotoxity. RESULTS: In the First Group-A, there was not a difference in frequencies of the antigen while significant increase of HLA-B12 was observed in the First Group-B (χ^2=16.6), showing a distinct difference from the First Group-A. In the 2nd Group, also, significant increase of HLA-B12 was observed (χ^2=14.0). In the 2nd Group-A, correlation of HLA-B12 was more significant (χ^2=27.8). CONCLUSION: From the fact that the common correlation with the specific HLA antigen, that is HLA-B12, between the asymptomatic GN which is found by group urine test such as the case of school children's regular examination and the acutely caused nephritis which delays in cure, it seems possible to assume that these are etiologically considered to be the same type of disease and that HLA-B12 or it's related genes can be responsible for causing and delaying the cure of Glomerulonephritis.

METABOLISM

166 Properties of the guanylate cyclase (G.c.) activity in puromycine of aminosid nephrotic (PAN) rats.

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The G.c. properties have been studied in isolated glomeruli from normal and PAN rats (after a single I.V. injection of puromycine of aminosid).

In normal rats, the G.c. activity is elevenfold lower in mechanical disrupted glomeruli than in intact glomeruli. The effects of agents, known for their stimulation effect on soluble enzyme (NaN3) or membrane bound enzyme (Triton), suggest that the glomeruli G.c. is essentially membrane bound. After fractionnation and 105 000 g centrifugation the data show the liberation of the membrane bound G.c. and probably the existence of a membrane bound effector able to inhibit this enzyme.

12 days after PA injection, the G.c. activity in intact glomeruli is not statistically different to the normal rats. But in disrupted glomeruli (homogenate) the G.c. activity is up to 300% higher than in normal rats. The differences seen after fractionnation and 105 000 g centrifugation between normal and PAN rats suggest that the G.c. activity is more stable in PAN glomeruli, demonstrated furthermore by progressive ultrasonication. The G.c. properties and stability changes could be attributed to a membrane structure change of the 12 days-PAN glomerular cells. Therefore the G.c. activity regulation is involved in the glomerular functions changes occuring in the nephrotic rats.

167 EVIDENCE SUGGESTING ABNORMAL MUSCLE PROTEIN SYNTHESIS AND DEGRADATION IN UREMIA.

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Children with chronic renal disease have decreased growth and diminished muscle mass suggesting that altered protein metabolism occurs in these children. We studied the effect of moderate, stable uremia in young, growing rats made uremic by 5/6 nephrectomy. Two weeks postop the uremic animals weighed less than the sham-operated controls (191 vs. 251 g) and plasma urea nitrogen levels were elevated (57.4 vs. 16.1 mg/dl). Muscle composition, as reflected in protein, water, total RNA and ATP content was unaltered when measured per gram wet weight. While total RNA concentration was unchanged in uremia, sucrose density centrifugation revealed an increase in the percentage of RNA sedimenting as 60s + 40s ribosomal subunits, suggesting a relative block in peptide chain initiation. Subunit levels were approximately 30% higher both in the post-fed state and after a 48 hour fast. 3-methylhistidine production, a measure of myofibrillar protein breakdown was no different under normal feeding conditions but was significantly elevated after 48 hours of fasting. Taken together, these findings suggest that the decreased anabolism seen in uremia may be related to increased polysome disaggregation and consequent decreased "efficiency" of muscle protein synthesis. Protein degradation may be effected as well after the imposition of additional metabolic stress (PHS grant AM 24061 and MDA).

168 METABOLIC VIABILITY (MV) OF KIDNEY TUBULES AFTER HYPOTHERMIC PRESERVATION (HP) IN DIFFERENT PRESERVATION SOLUTIONS

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It is generally assumed that the survival of kidneys preserved for transplantation is limited by deterioration of cellular metabolism that occurs during HP in pure electrolyte solutions. The alternative use of species-specific serum (SSS) has proved to be difficult. The present study was designed to find whether other solutions could reduce the metabolic changes. Methods: Glucose production (GP) of isolated rat kidney tubules was used as MV test. Kidney tubules were preserved up to 24 hrs at 8°C in different solutions(I: Collins; II: Krebs-Henseleit; III: bovine serum; IV: rat serum; V: filtered fraction of IV with mol. wt.< 10,000). Solutions I and II were also tested after addition of different substrates (amino acids and fatty acids). The results were compared to the values obtained from fresh kidney tubules (100%). Results: GP was 4% in I, 31% in II, 46% in III, rising to 101% in IV and to 85% in V. Addition of substrates resulted in moderate increase in II (up to 50%) and no change in I and III. Conclusions: Whereas addition of substrates can improve the MV of kidneys, optimal preservation can be obtained only with SSS or its filtered fraction - a better alternative to pure electrolyte solutions.