EXTRARENAL COMPLICATION AND LONG-TERM RENAL OUTCOME OF THE PATIENTS WITH CONGENITAL SOLITARY KIDNEY

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Introduction and Aims: Patients with acquired solitary kidney due to nephrectomy are known to have satisfactory renal prognosis. However, according to some recent reports, renal outcome of the patients with congenital solitary kidney is not so good as has been previously recognized. So, we retrospectively reviewed the renal outcome and extrarenal complications in the patients with congenital solitary kidney.

Methods: A total of ten patients comprised of 7 females and 3 males, who were diagnosed to have congenital solitary kidney in infancy, were reviewed. Median age at diagnosis is 0.06 year. Renal function at the latest follow-up and the extrarenal complication were reviewed. Median age at the latest follow-up is 5.07 years.

Results: Solitary kidney was diagnosed by prenatal ultrasound in 4 cases, and by routine check-up ultrasound for infants in 4 cases. In one case, solitary kidney was found in the process of workup for hematuria. In the remaining one case, it was found during the investigation of VATER association. Three cases of syndromic solitary kidney include 22q.11.3 deletion syndrome, VATER association, and Holt-Oram syndrome. In 7 cases, estimated GFR (eGFR) at the latest observation (median age, 11.5 years) was obtained. In two cases, eGFR was lower than 90 ml/min/1.73m2. In 6 cases, cystatin C was analyzed after the age of 3 years, and exceeding the cut-off level of 0.95 ng/ml in 2 cases. In all the 7 female cases, ultrasound study was conducted to evaluate the internal genital organs. Abnormal findings were recognized in 5 patients, including 2 cases of bicornuate uterus, 1 case of subseptate uterus, 1 case of vaginal hypoplasia, and 1 case of cystic dilatation of vagina. In the case of 22q.11.3 deletion syndrome, the chromosomal abnormality was confirmed at the age of 9 years when hypocalcemia due to pseudohypoparathyroidism developed during the long-term follow-up for the solitary kidney since her infancy.

Conclusions: The background of congenital solitary kidney seems to be diverse. Long term follow-up of the patients with congenital solitary kidney for renal function and electrolyte abnormality is warranted. Especially in the female patients, investigation of internal genital organs is of special importance.

ANGIOTENSIN 2 TYPE 1/TYPE 2 GENE POLYMORPHISMS IN TURKISH CHILDREN WITH VESICOURETERAL REFLUX AND RECURRENT URINARY TRACT INFECTIONS

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Introduction and Aims: Vesicoureteral reflux (VUR) and subsequently developing reflux nephropathy is the most important cause of end stage renal disease. Early diagnosis and treatment of VUR is important in order to prevent renal scarring and reflux nephropathy. Genetic factors have been evaluated as risk factors for the development of renal scar and reflux nephropathy in recent years. The aim of this study was to investigate the role of Angiotensin 2 (ATR 2) Type1 and Type2 receptor gene polymorphisms in children with VUR and recurrent urinary tract infection (UTI).

Methods: The study included 100 patients (25 patients who have recurrent UTI without renal scar and 25 patients who have recurrent UTI with renal scar). 25 patients who have VUR without renal scar and 25 patients who have VUR with renal scar). Blood was drawn and analysed for genetic polymorphisms of ATR 2 Type1 and Type2 genes by the PCR_RFLP method.

Results: The distribution of ATR 2 Type1 gene polymorphism was different between patients and healthy controls (p<0.05) but ATR 2 Type2 was similar (p>0.05). There was an association with distribution of ATR 2 Type1 receptor gene polymorphism and renal scar (p<0.05) but there was no difference with ATR 2 Type 2 (p>0.05). In the present study we compared urinary tract infection group with control group for ATR 2 Type 1 gene polymorphism, and we found significantly different (p<0.05). There was no significant difference between vesicoureteral reflux group with control group for ATR 2 Type 1/ Type 2 gene polymorphism.

Conclusions: The association of ATR 2 Type 2 gene polymorphism and recurrent UTI with renal scar might be useful for early diagnosis of end stage renal disease.
Conclusions: None of the T pts had any clinical evidence of either cell mediated or humoral rejection secondary to Influenza A/H1N1 vaccine. In the D group, no pt had any statistical significant increase in anti-HLA antibody following vaccination. Our study suggests that influenza A/H1N1 vaccination may be safe and tolerable in pediatric dialysis pts with or without a failed kidney allograft.

SP701 CONVERSION TO SIROLIMUS IN PEDIATRIC RENAL TRANSPLANT RECIPIENTS

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Introduction and Aims: Sirolimus is an immunosuppressive agent that offers potentially significant benefits for pediatric transplant patients. In this study, we investigated the effects and efficacy of sirolimus in pediatric renal transplant recipients.

Methods: We performed a retrospective analysis of 15 renal transplant recipients who underwent sirolimus/everolimus conversion.

Results: Between years 2002-2012, 96 patients were transplanted and sirolimus/everolimus was not used as a baseline immunosuppressive therapy. During follow-up, 13 patients (2 girls, 11 males) were converted to sirolimus and 2 patients were converted to everolimus (2 males). Four patients were transplanted from deceased donors and the rest from living related donors. The median age of these patients was 16.5 year (range 5.3-26). The mean age of transplantation was 10.3±3.9 year (range 3.16-16.5). These 15 patients were converted to sirolimus/everolimus at 24.5±19.1 months after transplantation for biopsy proven chronic allograft nephropathy (CAN) (n=6), BK-virus associated nephropathy (BKVAN) (n=2), progressive decline of renal function and 5 out of 6 patients with CAN had stabilized creatinine after sirolimus/everolimus conversion.

Conclusions: In conclusion, conversion to sirolimus/everolimus is an effective option for selected patients with tolerable side effects.

SP702 NEPHROTOXICITY IN CHILDREN WITH FREQUENTLY RELAPSING NEPHROTIC SYNDROME (FRNS) RECEIVING LONG-TERM ADMINISTRATION OF CYCLOSPORINE (CSA)

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Introduction and Aims: CSA has been established as a treatment of choice for FRNS in children. Recently, we showed a high relapse rate of nephrotic syndrome after 2-year treatment of CSA, suggesting a necessity for long-term administration (Ishikura at al. CJASN 2012).

Methods: A retrospective chart review was conducted in children in whom CSA was continued for more than 3 years for control of FRNS in our institution between 1999 and 2012. Most of the patients received CSA with trough control: for the first 6 months, patients were administered a dose that maintained a whole-blood CSA trough level between 80 and 100 ng/ml; the dose was adjusted over the next 18 months to maintain a trough level between 60 and 80 ng/ml and around 50 ng/ml thereafter. Cyclosporine-induced nephrotoxicity (CIN) was graded with arteriolar hyalinosis and degree of interstitial fibrosis.

Results: 39 patients were studied (mean age at stat of CSA, 11.2 years; 31 males). Mean duration of CSA treatment was 5.1 years. The frequency of CIN was positively related with duration of CSA administration.

Conclusions: Generalized Estimating Equations logistic regression revealed that multi-variable adjusted risk (odds ratio [95%CI]) to have CIN increased with time from the start of long-term CSA administration; 7.73 [1.82-32.92] for 3-5 years, and 11.68 [1.18-75.6] for over 5 years. Mean eGFR was 130±33.4 ml/min per 1.73 m2 (two patients had eGFR=90 [80.8 and 77.6]) at the time of discontinuation of CSA administration.

SP703 THE EFFICACY AND SAFETY OF RITUXIMAB TREATMENT IN CHILDREN WITH IDIOPATHIC NEPHROTIC SYNDROME IN COMPARISON WITH GLUCOCORTICOSTEROIDS AND CYCLOSPORINE A THERAPY - A SINGLE PEDIATRIC NEPHROLOGY CENTER EXPERIENCE

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1Department of Pediatric Cardiology and Nephrology Poznan University of Medical Sciences Poznan Poland

Introduction and Aims: The main treatment strategy in children with primary glomerulonephritis is based on immunosuppressive therapy with glucocorticosteroids. In some cases of resistance and dependence it is necessary to introduce cyclophosphamide and/or calcineurin inhibitors to induce and maintain remission. The reported toxicity and inadequate clinical response to this therapy drive the search for more effective and safer therapy. Rituximab is the chimeric monoclonal antibody against lymphocytes CD20 that primarily affects and entirely depletes peripheral B cells. According to some preliminary reports, rituximab can be used as an alternative immunosuppressive therapy in primary and secondary glomerulonephritises. The aim of our study was to analyze the efficacy and safety of rituximab non-standard immunosuppressive therapy in children with primary glomerulonephritises, who were not eligible for routine treatment with glucocorticosteroids and cyclosporine A.

Methods: The study group was composed of 25 non-response to standard immunosuppressive therapy children with proteinic glomerulopathies hospitalized between 2010 and 2012 in the Department of Pediatric Cardiology and Nephrology, Poznan University of Medical Sciences in Poland. Fourteen boys and eleven girls were included into the analysis and all have undergone a renal biopsy. These indications included: steroid-resistant nephrotic syndrome (n=21) and steroid-dependent nephrotic syndrome (n=4). The dose of rituximab was established as 375 mg/m2 of body-surface area, administered by intravenous infusion once weekly for 1 to 4 weeks, depending on the lymphocytes CD19 concentration. We evaluate proteinuria and plasma concentration of lymphocytes CD19 at intervals of 6, 12, 18 and 24 months after which patients received a single reminding dose. After 6 months of therapy an attempt to discontinue cyclosporine A was made.

Results: The remission defined as a proteinuria less than 150mg per 24h, was observed in 14 of the 25 children. There was no statistically important differences in leukocyte and/or clinical biochemical side effects, monitored by blood morphology as well as plasma renal and liver markers to arrest subsequent drug administration. However in 10 of the 25 children there was strong correlation between cyclosporine serum concentration and the level of proteinuria.

Conclusions: In conclusion, we postulate that alternative rituximab therapy should be taken under consideration in non-responding to standard therapy nephrotic patients. In these groups the potential benefits of that therapy are higher than expected side-effects. However in comparison with cyclosporine A therapy in primary steroid resistant patients rituximab seems to be less effective than calcineurin inhibitor.

SP704 URINE ACUTE KIDNEY INJURY BIOMARKERS IN PRETERM NEONATES WITH RESPIRATORY DISTRESS SYNDROME

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1Pediatric Nephrology Inonu University Malatya Merkez Turkey

Introduction and Aims: We evaluated urinary Glutathione S transferase pi (GST-π), Beta-2 microglobulin (B2-MG) and N-acetyl-b-D-glucosaminidase (NAG) as markers of acute kidney injury (AKI) in preterm neonates with respiratory distress syndrome (RDS).

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Methods: Urinary AKI biomarkers were measured in 76 preterm neonates with RDS (n=26) and control neonates without RDS (n=50), whose gestational ages were between 28 and 32 weeks. Blood and urine samples were obtained on postnatal day (PND) 3 and 30. While urinary GST-π levels were measured by ELISA method, urinary B2-MG levels were determined by nephelometric method and urinary NAG levels were measured by spectrophotometric method.

Results: There was no significant difference in urinary B2-MG and GST-π levels preterm neonates with and without RDS on PND3 (p>0.05 for each). However, preterm neonates with RDS had significantly higher urinary B2-MG and GST-π levels than the control group on PND30 (p=0.0001 and p=0.004, respectively). Urinary NAG levels were higher in RDS group than those of the controls on PND3 and 30 but these findings were not statistically significant (p=0.05, for each).

Conclusions: Urinary GST-π and B2-MG levels can be employed as urinary AKI biomarkers of tubular damage in preterm neonates with RDS.

### Table: Postnatal days

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<tr>
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<th>Postnatal days 3</th>
<th>Postnatal days 30</th>
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<tr>
<td>BUN (mg/dl)</td>
<td>18.0 (7.0-33.5)</td>
<td>14.0 (5.0-21.0)</td>
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<tr>
<td>Cr (mg/dl)</td>
<td>0.99 (0.89-1.12)</td>
<td>0.52 (0.46-0.65)</td>
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<tr>
<td>Uric acid (mg/dl)</td>
<td>5.1 (3.8-8.4)</td>
<td>1.1 (1.0-2.1)</td>
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<tr>
<td>Estimated GFR (ml/min/1.73m²)</td>
<td>13.2 (11.6-14.4)</td>
<td>25.3 (21.8-30.4)</td>
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<tr>
<td>GST-π (mg/L)</td>
<td>6.6 (4.8-7.7)</td>
<td>12.0 (8.8-151.6)</td>
</tr>
<tr>
<td>B2-MG (mg/L)</td>
<td>4.3 (2.9-7.3)</td>
<td>10.6 (3.6-23.2)</td>
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<tr>
<td>NAG (U/L)</td>
<td>3.6 (2.2-4.1)</td>
<td>8.7 (3.7-11.8)</td>
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<td>FENa (%)</td>
<td>4.8 (2.6-6.7)</td>
<td>1.4 (1.1-2.9)</td>
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### Table: Causes of Chronic Renal Failure in Russian Children: 5-Year Single-Center Study

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<th>Causes of Chronic Renal Failure in Russian Children: 5-Year Single-Center Study</th>
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<td>Introduction and Aims: Chronic renal failure (CRF) in children is the result of heterogeneous diseases of kidney and urinary tract. The aim of the study was to evaluate the prevalence and epidemiology of CRF in Russian children with chronic kidney diseases (CKD). Methods: 2653 children aged 1.0-17.0 years with various inherited and acquired CKD admitted to the tertiary pediatric nephrology centre between 2007 and 2012 were retrospectively studied. Among them 56 children (2.1%) progressed to CRF which was defined as stable increasing serum creatinine level &gt;100 µmol/L. Results: Causes of childhood CRF included: chronic glomerulonephritis (GN) in 20 (35.7%), renal hypoplasia/dysplasia in 12 (21.4%), tubular diseases in 10 (17.9%), obstructive uropathy/reflux nephropathy in 7 (12.5%), hemolytic uremic syndrome (HUS) in 4 (7.1%), Alport’s syndrome in 3 (5.4%). Among children with GN there were 13 (23.2%) patients with initial non-familial steroid-resistant nephrotic syndrome, including FSGS in 7 (53.9%), membranoproliferative GN in 5 (38.5%) and mesangial proliferative GN in 1 (7.6%). The median age of patients progressed to CRF was 13 (IQR: 8.0; 16.0) years. Children with GN developed CRF at the age of 8.5 (3.5; 14.5), tubular diseases - in 9.5 (9.0; 12.0), hypoplasia/dysplasia - in 15.0 (8.0; 16.0), obstructive uropathy/reflux nephropathy - in 15.0 (13.0; 16.0), HUS - in 15.0 (6.8; 15.0) and Alport’s syndrome - in 16.5 (15.6; 17.0) years (p&lt;0.0057). There were 12 (21.4%) patients with congenital syndromes and kidney involvement progressed to CRF: Alport’s syndrome (n=3), Bardet-Biedl syndrome (n=2), Senior-Loken syndrome (n=2), Frasier syndrome (n=1), Denys Drash syndrome (n=1), Cockayne syndrome (n=1), tuberous sclerosis (n=1, autosomal recessive polycystic kidney disease (n=1), 14 (25%) children with CRF reached end-stage renal disease (ESRD) during period of follow up, including Alport’s syndrome in 3/3 (100%), nephronophthisis in 4/10 (40%), glomerulopathies in 5/20 (25%), renal hypoplasia/dysplasia in 1/12 (14.3%) and obstructive uropathy in 1/7 (14.3%). Among patients with ESRD 11 children (78.6%) have undergone living donor kidney transplantation and other 3 patients (21.4%) are receiving peritoneal dialysis (n=2) and hemodialysis (n=1). Conclusions: Our data indicate that the incidence rate of CRF in children with CKD was 2.1%. Chronic glomerulonephritis is the major cause of CRF, accounting for 35.7% of patients. Steroid-resistant nephrotic syndrome with FSGS is the most prevalent type of glomerulopathies progressed to CRF. There are a high proportion of patients (21.4%) with congenital syndromes and kidney involvement developed CRF during the childhood.</td>
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### Table: Growth of Children with Pre-Dialysis Chronic Kidney Disease in Japan

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<th>Growth of Children with Pre-Dialysis Chronic Kidney Disease in Japan</th>
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<td>Introduction and Aims: Short stature is a clinically important issue in children with chronic kidney disease (CKD), and is associated with significant morbidity and mortality. As a result of advances in pediatric nephrology, children with CKD should achieve final adult height consistent with their genetic potential. Methods: We conducted epidemiological surveys of 119 medical institutions in Japan treating children with CKD stage 3-5 in 2011. Of 447 children surveyed, data (height and CKD stage) were available for 284. Height standard deviation score (height SDS) was calculated for all available children. Distributions of height SDS were determined according to primary disease (Congenital anomalies of the kidney and urinary tract [CAKUT] vs. non-CAKUT) and gestational age at birth (&lt;37 weeks vs. ≥37 weeks).</td>
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**Note:** The above paragraphs are a natural language representation of a page from a scientific publication, focusing on the key findings and methodologies discussed within the text. The data and conclusions presented in the text are derived from a comprehensive study involving multiple aspects of pediatric nephrology, focusing on the epidemiology and management of renal diseases in children. The details provided in the table sections are illustrative of the type of data and findings typically presented in such research, offering a glimpse into the methodologies and results discussed throughout the document.
We performed t-test for height SDS of each CKD stage compared to the healthy Japanese population, and trend-test for subgroup analysis. Patients who had multiple congenital anomaly syndromes that caused growth retardation were excluded.

Results: The study included 182 boys and 102 girls; 184, 87, and 13 children were of CKD stage 3, 4, and 5, respectively. CACKT accounted for 62.0% of primary disease. Age was 10.1±4.5 years. Height SDS was below the mean in the majority of children of both sexes from stage 3. Mean height SDS of CKD stage 3, 4, and 5 was -1.1±1.3, -1.7±1.7, and -2.7±1.8, respectively, of significantly short stature compared to the healthy Japanese population (p<0.001 in each stage). Height SDS significantly decreased with increase of CKD stage from 3 to 5 (p<0.001); in CACKT group (p<0.001) but not in non-CACKT group (p=0.13); and in gestational age at birth <37 weeks (p<0.001) but not in ≥37 weeks (p=0.07) group. Growth hormone was used in 11/184 (6.0%), 20/87 (23.0%), and 4/13 (30.8%) patients with CKD stage 3, 4, and 5, respectively.

Conclusions: This study indicated that growth impairment started from early CKD stage, and height SDS significantly decreased with increase of CKD stage. It is important to detect CKD early and introduce growth hormone at an appropriate time to improve final height with management of complications and nutrition in children with CKD.

Abstracts
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SP708
THE INFLUENCE OF ENVIRONMENTAL FACTORS ON KIDNEYS IN CHILDREN: PROBLEMS AND PERSPECTIVES (CLINICAL AND EXPERIMENTAL STUDY)
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Introduction and Aims: Modern scientists have no doubt that the majority of non-communicable diseases develop due to the action of environmental factors. Understanding of mechanisms of renal pathology which develops under environmental influence will allow to improve diagnostics and propose individual modes of renal diseases correction and prophylaxis. Aim: Assess the possible role of environmental factors in the development of renal pathology in children by means of clinical and experimental research.

Methods: 99 children aged 1 to 18 years suffering from different nephropathies were examined, among them 38 children who live in districts with high pollution level and 61 patients who live in districts with low pollution level. Healthy children complete control group. Determination of macro- and microelements of hair and blood serum was performed by spectrophotometric method with the use of atomic absorption spectrophotometer "Suntum". The experimental part of the work was carried out on 3 months old Wistar rats and the corresponding newborn period. The main group (50 adult rats) was exposed below-lev electromagnetic radiation of centimeter range (1-10 cm) with radiation flux density up to 3 mW/cm² for 4 hours every day of 1 month before and during pregnancy. Control group consisted of 26 age-matched healthy children, with no clinical evidence of renal or cardiac diseases and with quite normal ECG recordings. Each of the examined children was subjected to the 12-lead standard ECG examination, only patients with possible heart conduction abnormalities, BSPM (body surface potential mapping) recordings collected using HP 7100 Fukuda Denshi system, were used. Basing on the source ECG data, an original technique of V AT difference map was then applied.

Results: Differences between the VAT values found for the two examined children groups, normal and with ESRF, were significantly present in the region of the right upper thorax, entire left thorax and nearly total back. Such pattern in ventricular activation propagation time within the intraventricular conduction system indicates a pathological electric transmission within the anterior fascicle of His bundle.

Conclusions: 1. VAT maps (isochrone maps) reflect precisely a trajectory of activation in the both heart ventricles. 2. Differences in the VAT values enable in young patients with ESRF to detect early disturbances in left His bundle branch despite the normal 12-lead ECG examination. 3. Further study on the larger group of children with ESRF treated with peritoneal dialysis is required to verify the preliminary observations presented herein.
**SP712** CLINICAL AND LABORATORY PREDICTORS FOR PERITONEAL DIALYSIS AMONG DENGUE SHOCK (DSS) PATIENTS WITH ACUTE KIDNEY INJURY ADMITTED AT THE PHILIPPINE CHILDREN’S MEDICAL CENTER FROM YEAR 2010-2011

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1Nephrology Philippine Children’s Medical Center Quezon City Philippines

Introduction and Aims: The precise mechanism of renal injury among Dengue patients is not known. Patient who have ATN will usually require early dialysis. However, on admission to the hospital, it is difficult to distinguish DSS patients with ATN from patients with reversible prerenal cause that will respond to simple hydration. Our understanding of the complex pathogenesis of tubular injury in Dengue AKI is very limited that until it is sufficiently increased, therapeutic strategies will continue to fail. This study sought to explore the correlation between clinical and laboratory parameters, heart rate, respiratory rate, oxygen saturation, bicarbonate and creatinin level in predicting the need for dialysis among DSS patients at PCMC Specific Objectives: to determine if the following factors are predictive of the need for dialysis: decrease in estimated creatinine clearance by 75% or <35 mL/min/BSA with urine output of <0.3 mL/kg/hr X 24 hours or anuria of 12 hours, assest the usefulness of urinary sediment scoring (USS) in predicting the need for dialysis.

Methods: This retrospective study covered 60 newly admitted cases of Dengue Shock Syndrome III and IV at the Philippine Children’s Medical Center between January 2010 to December 2011.

Results: Data form 60 patients were available for analysis. Comparison of the demographic characteristics between patients who required dialysis and those who did not show no significant difference as proven by all p values >0.05. Of the difference between clinical and laboratory parameters, there was a significant difference in Heart rate, Respiratory rate, oxygen saturation, bicarbonate and base excess as proven by all p values <0.05. The heart rate and Respiratory rate were significantly higher among those who needed dialysis than those who did not. The estimated creatinine clearance was significantly lower among those who needed dialysis than who did not. Conclusion: Our data indicate that a decrease in estimated creatinine clearance by 75% or <35 mL/min/BSA with urine output of <0.3 mL/kg/hr X 24 hours or anuria of 12 hours, assest the usefulness of urinary sediment scoring (USS) in predicting the need for dialysis.

**SP714** NEPHRECTOMY FOR THE FAILED RENAL ALLOGRAFT IN CHILDREN: PREDICTORS AND OUTCOMES

Susan Minson1, Marina Muhoz1, Inés Vergara1, Martín Mraz1, Robert Vaughan1, Lesley Rees1, Jonathon Olshuff1, Francis Calder1 and Ruksana Shroff1

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Introduction and Aims: The indications for removal of a failed renal allograft and its impact on subsequent dialysis and retransplantation remains uncertain.

Methods: We performed a 10 year review of allograft failure to review factors that determine a need for transplant nephrectomy, and patient outcomes in children with or without nephrectomy.

Results: 42 children developed graft failure over 10-years. Eight had graft failure within 4 weeks and were excluded. Of the remaining 34 children, 18 (53%) required transplant nephrectomy. The median graft survival was 1.1 [range 0.2-10.6] vs 7.5 [1.5-15.0] years in the nephrectomy and non-nephrectomy groups respectively; p=0.011. Children with graft failure within 1-year of transplantation were four-times more likely to require a transplant nephrectomy than those with graft failure after 1-year (p=0.04). Patients with a primary diagnosis of CAKUT were significantly less likely to require a transplant nephrectomy than those with glomerular disease (p = 0.0066 Renal biopsy performed 68 weeks prior to graft loss showed Banff grade II acute rejection in 13/18 children who required subsequent nephrectomy vs 3/13 who did not need nephrectomy (p=0.01).

Inflammation (fever, graft tenderness and raised CRP) was seen in 66% of nephrectomised children. Banff II rejection on biopsy, an inflammatory response and the time post-transplantation significantly and independently predicted the need for nephrectomy (p=0.0003). HLA antibody levels were increased in association with higher circulatig HLA antibody levels.

**SP715** THE ROLE OF HYDROXYPROLINURIA IN RENAL SCARS FORMATION IN CHILDREN WITH VESICOURETERAL REFUX

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Republic of Moldova

Introduction and Aims: Children with urinary tract infection and vesicoureteral reflux (VUR) may lead to reflux-urethrophy (RN). The intestinal tissue is characterized by the considerable content of collagen. At collagen destruction products of its degradation are liberated in the blood and excreted in urine. Reveal of hydroxproline concentration (a component of amino acid in collagen) in biological liquids can be used as an early marker of renal damage. The aim of this study is to estimate the correlation between urine excretion of hydroxyproline (HPL) and peptid legate (HPL) and the degree of renal scars.

Methods: The study group (I) consisted of 71 (52 girls) patients aged 5,69±0,44 y. with VUR, including: A - 9 VUR without scars, B - 41 VUR with mild RN (scars 1-3) and C - 21 VUR with severe RN - 3 scars, diagnosed with TDMA. Ten healthy children served as controls,aged 6,24 ± 0,31 y. Urinary excretion and ratios over creatinine of HPL and HPL were measured by ELISA.

Results: The renal excretion of primary HPL and HPL in VUR patients were higher compared to the control group (p<0.05). The highest urine concentration of HPL was found in subgroup B and C. HPL in the urine of children with severe RN were twice higher than in the control group and subgroup A (p<0.05). A positive correlation was found between urinary HPL and the degree of RN.
**Methods:** The serum levels of cytokines were determined by ELISA (analyzer cytokines (MCP-1 and IL-23) and their changes after standard antibacterial treatment infiltration. The aim of our study was to determine serum levels of proinflammatory metalloprotease stimulation, increases angiogenesis and reduces CD8+ T-cell leads to the tubulointerstitial fibrosis development. IL-23 also regulates matrix increase of extracellular matrix accumulation through TGF activation, which altogether

**Results:** During the study period 33.3% of stage 1V CKD, 55% of ESRD patients and 44.4% of renal allograft recipients had growth impairment. The mean height SDS were -1.14±1.22, -1.98±2.23 and -1.69±2.1 in stage 1V-IV CKD, ESRD patients and renal allograft recipients, respectively. The mean height SDS was significantly higher in renal allograft recipients when compared with ESRD patients (p<0.04). Underweight was seen in 42.8% of stage 1V-IV CKD, 65% of ESRD patients and only 14.8% of renal allograft recipients. Obesity was seen 11.1% of renal allograft recipients, 5% of stage I-IV and ESRD patients. The mean body mass index (BMI) SDS was -0.62±1.45, -1.22 ±1.52 and 0.08±1.40 in stage 1V-IV CKD, ESRD patients and renal allograft recipients, respectively. The mean BMI SDS was significantly higher in renal allograft recipients as compared to ESRD patients (p<0.04).

**Conclusions:** Growth impairment and malnutrition remain challenging problems of the children with CKD. Successful kidney transplantation may improve the growth and nutritional status of children with CKD and ESRD.