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P-035 VASCULAR ENDOTHELIAL GROWTH FACTOR IN PAEDIATRIC RENAL TRANSPLANT RECIPIENTS

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Introduction: Vascular endothelial growth factor (VEGF) is an endothelial-specific growth factor that promotes endothelial cell proliferation, differentiation and survival, mediates endothelium-dependent vasodilatation, induces microvascular hyperpermeability and participates in interstitial matrix remodelling. VEGF expression is most prominent in glomerular podocytes and in tubular epithelial cells in the kidney. There remains ongoing work on the role of VEGF in normal renal physiology and in animal models of transplantation where VEGF production may influence susceptibility to acute rejection and chronic allograft damage.
Material and methods: Prospective study measuring VEGF-C by Human VEGF Quantikine ELISA Kit (R&D Systems, Oxon, UK) in 5 paediatric renal transplant recipients (pRTR) at 15 timepoints and compared to 16 age-matched and sex-matched healthy paediatric controls.
Results: 5 pRTR (60% (3) male) aged 4.4–15.3 (median 10.5) years of whom 60% (3) had ESKD due to CAKUT underwent 15 VEGF measurements at 0.2–12.1 (median 2.1) months after first kidney only transplantation (100% (5) living-related and 80% (4) pre-emptive) with eGFR of 52.4–87.5 (median 78.4) mls/min/1.73m^2 at follow-up of 2.3–6.7 (median 6.3) years. Patients underwent 1–2 (median 2) percutaneous renal transplant biopsies showing evidence of chronic changes but there were no biopsy-proven acute rejection episodes. Mean VEGF-C levels were 4.27 +/− 1.04 ng/ml in pRTR and 4.33 +/− 1.47 ng/ml in the healthy controls.
Conclusions: VEGF levels were stable in our pRTR and comparable to healthy controls although this was a stable cohort of living related renal transplant recipients who did not have any biopsy-proven acute rejection episodes, which are normally characterised by an acute inflammatory lymphocytic infiltrate, tubulitis and endothelialitis. VEGF may be important in the generation of this inflammatory response and the general controlled variation in VEGF production may influence susceptibility to acute allograft rejection. This hypothesis needs to be investigated further in pRTR undergoing episodes of acute allograft rejection.

P-036 RISK FACTORS OF LEFT VENTRICULAR MASS INCREASE IN CHILDREN WITH CHRONIC KIDNEY DISEASE

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Introduction: Left ventricular hypertrophy (LVH) is a major risk factor of cardiovascular complications. The study aimed to identify risk factors that contribute to LVH progression in children with chronic kidney disease (CKD) during 1 year observation.
Material and methods: The study was conducted in a group of 48 children (17 girls and 31 boys) with CKD stage 1 to 5. The patients' mean age was 11 years and mean GFR was 32 ml/min/1.73m^2. Serum creatinine, BNP, ADMA and oxyLDL levels were measured. Ambulatory blood pressure measurements (ABPM) were performed. Echocardiographic examinations were carried out with a HP 5500 device. The 95th percentile of LV mass index relative to height age was used to define LVH.
Results: LVH was detected in 22 children. There were no significant differences in biochemical parameters and blood pressure values between children with the progression vs regression of LVMI (change >15%). Twenty-six children without LVH at first observation developed a LVMI increase of >15% during 12-month observation. In this group lower height (124.7 vs 134.4 cm; $p = 0.001$) and significantly higher night blood pressure (BP) values were observed: systolic (100.0 vs. 96.8 mmHg; $p = 0.024$), diastolic BP (57.0 vs. 54.7 mmHg; $p = 0.006$) and mean arterial pressure (73.7 vs. 70.0 mmHg, $p = 0.001$). In addition, higher systolic, diastolic BP and MAP values in 24 h measurements were found.
Conclusions: BNP concentration is not a predictive index of left ventricular hypertrophy. Night blood pressure is a significant risk factor of LVH development in children with chronic kidney disease. Regular ABPM measurements and intensive hypotensive treatment are important elements of cardioprotection.

P-037 THE ROLE OF THE URINARY ANTIMICROBIAL PEPTIDE CATHELICIDIN LEVELS IN EARLY DIAGNOSIS OF URINARY TRACT INFECTION, DIFFERENTIATION OF CYSTITIS-PYELONEPHRITIS AND PREDICTION OF THE RESISTANT MICROORGANISMS

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Introduction: Urinary tract infections(UTI) can lead to renal scarring resulting in hypertension and end-stage renal failure. Therefore, different markers such as antimicrobial peptide cathelicidin are studied for early diagnosis of UTI.
In this study, we investigated the role of urinary cathelicidin levels(UCL) in early diagnosis of UTI, differentiation of cystitis-pyelonephritis and prediction of the resistant microorganisms.
Material and methods: 109 patients(58 female, 23 male) with suspected UTI and 63 healthy children were included in the study. On admission, complete urine analysis and urine cultures of the patients were studied. Demographic data and associated renal diseases were recorded. Fifty eight patients were included in the cystitis subgroup, 17 in the pyelonephritis and 34 in the sterile pyuria subgroup. UCL were measured in all patients and control group.
Results: The median(IQR) age of patients was 84(72;1–216) months. UCL levels in the patient and and control groups were 14.99 ± 5.43 and 15.18 ± 4.52 ng/ml respectively, and no significant difference was present. There was no significant difference in UCL of the subgroups compared with each other and the control group($p > 0.05$). In cystitis subgroup, UCL in patients infected with E Coli($n = 43$) were significantly lower than in patients infected with microorganism other than E.coli ($n = 11$)($p = 0.044$). There was no significant relation between antibiotic resistance and UCL($p > 0.05$). Children with accompanying renal disease($n = 8$) in the sterile pyuria subgroup had significantly higher UCL than those without renal disease($n = 26$)($p = 0.033$).
Conclusions: UCL in patients with suspected UTI is not useful in early and differential diagnosis of cystitis and pyelonephritis, and in prediction of antibiotic resistance. However, it may provide early recognition of UTI with microorganisms other than E.coli and may help to decide effective early empirical treatment of these patients. High UCL in children with sterile pyuria and accompanying kidney disease in our study suggest that urinary cathelicidin may be protective against urinary tract infections in this group.