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Introduction: Posterior urethral valves (PUV) is a congenital anomaly associated with both chronic kidney disease (CKD) and urological complications, and is a leading cause of end stage kidney disease in young males. The aims of this study were to investigate and describe factors contributing to the impact of caring for a child with PUV and to determine the extent to which families view their care as family-centered, and whether this can affect the impact of care.

Methods: Primary caregivers of children with PUV receiving care at single centre completed the Impact on Family Scale (IOFS) and the Measures of Processes of Care (MPOC). Parents of children who were on dialysis or had received a transplant were excluded. The IOFS asks 15 questions with a possible response for each from 1 to 4 and thus provides a maximal Total Impact Score of 60. The MPOC measures the extent to which clinical care is family-centered. Univariate analyses were used to assess the relationship between child-related, demographic variables and the IOFS scores. Variables of interest included child age, CKD stage, number of hospitalisations in last 12 months and need for intermittent catheterisation. Household variables included socioeconomic status, distance to treating centre and number of caregivers.

Results: A total of 36 primary caregivers completed both questionnaires. The mean age of patients was 7.1 ± 5.0 years. A moderate/severe CKD was present in 32% of the patients. Higher frequency of hospital admissions, living outside a major city and a lower socioeconomic status were each associated with a higher Total Impact Score. After Bonferroni’s correction of p value, the only statistically significant difference in Total Impact Score was found between mild CKD and moderate/severe CKD. Caregivers of children with moderate/severe CKD scored higher on the IOFS compared to those caring for children with mild CKD (38.0 ±8.00 vs. 22.2 ±8.65, p<0.0003). 87.5% of parents in the moderate/severe CKD group compared to <15% of parents in the mild CKD group “lived from day to day” and “wondered whether to treat their child as special”. In general, caregivers rated highly on the MPOC, but reported lower scores in subscales related to information provision. There was no significant correlation between IOFS and MPOC scores.

Conclusion: The impact of caring for a child with PUV is variable and is strongly determined by the severity of the associated CKD. The impact of caring for boys with PUV and more severe CKD is quantitatively similar to that seen in life-threatening childhood illnesses. Further research is required to show whether improving family-centeredness of care can reduce the impact of caring for boys with PUV.

SAT-318

BLOOD PRESSURE OUTCOMES IN NEONATAL INTENSIVE CARE UNIT GRADUATES WITH IDIOPATHIC HYPERTENSION

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Introduction: Hypertension (HTN) occurs in 1% to 2.5% of all neonates admitted to neonatal intensive care units (NICU) and the risk of hypertension is reportedly correlated with the degree of prematurity. Robust, long-term outcome data on resolution of “idiopathic” neonatal hypertension is missing.

Methods: We conducted a multicenter, retrospective study of infants who were diagnosed with hypertension without identifiable etiology during NICU admission and were discharged from NICU on anti-HTN medications between 1/1/2012 and 05/31/2016 with outpatient follow up for up to 2 years.

Results: 122 subjects were enrolled from 13 Children’s Hospitals in North America with median gestational age of 28 weeks + 3 days at birth and median follow up of 364 days (table 1). At 1 year of life, 96 (78.7%) came off anti-HTN medication and only 9 (7.4%) children remained on medication by 2 years of age. Calcium channel blockers were the most often used anti-HTN medication in the study population (see Figure 1).

Conclusions: The majority of patients discharged from NICU with idiopathic hypertension were off anti-hypertensive medication by 2 years of age or younger. Risk for persistent hypertension should be investigated in future studies.

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ESTIMATING GFR IN PREGNANCY: COMPARISON BETWEEN 24-HOUR CREATININE CLEARANCE RATE AND NANRA EQUATION

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Introduction: Currently there is no validated serum creatinine based eGFR equation available to accurately measure renal function in pregnancy, partly because pregnancy related weight and body surface area changes are not representative of an increase in serum creatinine production. In order to perform accurate renal function measurements in pregnancy, 24-hour urine collections are required to measure the 24-hour creatinine clearance rate. The purpose of this study is to assess the accuracy of the non-weight based, serum creatinine based NANRA equation for calculating eGFR in the setting of pregnancy, as well as assessing the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, and a CKD-EPI adjusted Body Surface Area (BSA) equation.

Methods: Based at a hospital in New South Wales, Australia, 39 pregnant patients agreed to partake in the study between 2016 and 2017 with the aim to obtain two 24-hour urine collections with simultaneous serum creatinine levels throughout their pregnancy. The calculated 24-hour creatinine clearance rate was compared to eGFR measured in three ways: NANRA equation, CKD-EPI equation, and the CKD-EPI adjusted BSA equation. Levels of concordance were measured using a Bland-Altman plot, with an a priori bias acceptance ±1.5ml/min used to evaluate the results.

NANRA equation

eGFR = [(140-age) x (Height)^2 x (0.02588/Serum Creatinine)

CKD-EPI equation

eGFR = 141 x min (Serum creatinine /kappa, 1) ^0.742 x max(Serum creatinine/kappa, 1) ^1.209 x 0.991^Alpha x 1.018 [if female] x 1.159 [if black]

Kappa = 0.7 if female, 0.9 if male

Alpha = -0.329 if female, -0.411 if male

min = minimum of serum creatinine/kappa or 1

max = maximum of serum creatinine/kappa or 1

CKD-EPI adjusted BSA equation

eGFR = [CKD-EPI / 1.73] x BSA

BSA = 0.00184 x (patient height in cm)^0.725 x (patient weight in kg)^0.425

Results: 39 patients provided a total of 53 synchronous urine and serum creatinine samples during their pregnancy. Gestational age ranged from 15 to 33 weeks at sample collection, with a mean gestational age of 22 weeks. The mean 24-hour creatinine clearance rate was 143.87 ml/min (±38.61). The NANRA equation had a bias of -6.99ml/min [95% limit of agreement, -83.84 to 69.85] compared to the 24-hour creatinine clearance rate. The CKD-EPI and CKD-EPI adjusted BSA equation had biases of +21.19ml/min [95% limit of agreement, -54.15 to 96.3] and +18.60ml/min [95% limit of agreement, -48.19 to 85.4] respectively.