GUIDELINE

Antenatal Renal and Urological Anomalies

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

Background

Abnormalities of the foetal genito-urinary system are identified by ante-natal ultrasonography in 0.5% of pregnancies[1]. Antenatal Renal Pelvis Dilatation (RPD) affects approximately 1% of foetuses[2]. Elevated RPD indicating the presence of hydronephrosis is the most common urinary tract finding on routine ante-natal scanning and clinical sequelae may range from no functional disturbance, through to acute and chronic renal failure, depending on the underlying cause. Whilst many instances of antenatally diagnosed hydronephrosis are associated with a normal renal prognosis, underlying abnormalities such as spina bifida, posterior urethral valves, obstruction at the pelvi-ureteric junction, duplex system and other congenital anomalies may have significant implications with respect to renal functional outcomes. Foetal RPD measures of > 15 mm have demonstrated an association with renal pathology such as urinary tract obstruction[2]. This diagnosis implies a need for early surgical intervention in most cases. The presence of unexpected renal fluid collections on ultrasound (e.g. urinoma, renal cysts, distended bladder should prompt consideration of a co-existent renal tract anomaly[3].

Defining the extent and severity of hydronephrosis identified on antenatal ultrasound has been confounded by physiological variation in growth occurring normally during gestation, and consequent to differences in definition and diagnostic criteria. The most commonly used method for diagnosing prenatal hydronephrosis is the assessment of the antero-posterior diameter of the renal pelvis[2]. Unfortunately, opinion varies regarding which degrees of renal dilatation require investigation with ultrasound or other modalities in the post-natal period.

The use of antibiotic prophylaxis, surgical intervention for (e.g.) vesico-ureteric reflux and long-term monitoring strategies are also the focus of debate. Meta-analysis of outcomes for mild-moderate RPD have demonstrated an increasing risk of obstruction / VUR with increasing mean foetal pelvis diameter increased from 5mm to 15mm[2].

Other meta-analyses have indicated that milder degrees of pelvis dilatation were more likely to stabilise or improve[4], while moderate to severe cases present a significant risk of association with an underlying pathology[5].

Management of Infants with Mild Antenatal Renal Pelvis Dilation

Infants with a renal pelvis diameter of **7-10mm** on ultrasound are considered to have mild renal dilatation. Infants in whom mild renal dilatation is identified and is persistent on antenatal scan should be managed as follows:

- Refer to PCH Nephrology Unit using eReferrals or with the paper-based Antenatal Fetal Urological Anomalies referral form. This can be faxed to nephrology: 6456-0097.
- Book an outpatient renal ultrasound at PCH for around 2 months of age when you make the referral. The form should be faxed to PCH radiology: 6456-0071. The nephrology team will arrange a clinic appointment if necessary. Note: if the post-natal ultrasound is normal, parents will receive a letter from the nephrology team indicating that no appointment or follow-up is necessary.
- There is no need to commence antibiotic prophylaxis for these babies.

Management of Infants with Moderate-Severe Antenatal Renal Pelvis Dilatation

Infants with a renal pelvis diameter of **> 10mm** on ultrasound are considered to have moderate to severe renal pelvis dilatation. Infants in whom moderate or severe dilatation is present should be managed as follows:

- Ring the on-call surgical registrar at PCH via Switchboard.
- Commence Trimethoprim and Sulfamethoxazole (Co-trimoxazole). To continue until renal US/ other investigations and review have been completed by the surgical team.
- Complete a general surgery eReferral or Antenatal Fetal Urological Anomalies referral form (fax to urology: 6456-2074) and arrange for other investigations as requested by the surgical team. These may include renal ultrasounds/ MCUG at PCH. Fax the request form to PCH radiology: 6456-0097. Note: urgent renal ultrasounds can generally be obtained at short notice at KEMH.

Management of Infants with Other Renal Anomalies

Infants in whom other renal tract anomalies have been identified in utero, should be assessed clinically and discussed with the paediatric consultant on call for post-natal wards prior to consulting Renal or other specialties. Refer to the Antenatal Fetal Urological Anomalies referral for details.

Antibiotic prophylaxis for renal tract dilatation or anomalies

Antibiotic prophylaxis is not required for simple renal pelvis dilatation ≤10mm. For more significant dilatation, Trimethoprim and Sulfamethoxazole (Co-trimoxazole) should be prescribed as per the neonatal medication monograph. The medication should be continued after discharge until urology review, at which time a decision will be made regarding its continuation.

Antenatal Fetal Urological Anomalies Referral Form

Parent Resource

Trimethoprim/Sulfamethoxazole Liquid guide for caregivers

This document can be made available in alternative formats on request.

Document Owner:	Neonatology		
Reviewer / Team:	Neonatal Coordinating Group		
Date First Issued:	August 2011	Last Reviewed:	March 2020
Amendment Dates:	November 2020, August 2021, Dec 2021	Next Review Date:	March 2023
Approved by:	Neonatal Coordinating Group	Date:	28th April 2020
Endorsed by:	Neonatal Coordinating Group	Date:	
Standards Applicable:	NSQHS Standards: Child Safe Standards: 1,10		

Printed or personally saved electronic copies of this document are considered uncontrolled

Healthy kids, healthy communities

Compassion Excellence Collaboration Accountability Equity Respect

Neonatology | Community Health | Mental Health | Perth Children's Hospital