Congenital Abnormalities of the Kidney and Urinary Tract UHL Neonatal guideline

University Hospitals of Leicester NHS Trust

Trust ref: C34/2009

1. Introduction and Who Guideline applies to

This guideline is aimed at all Health care professionals involved in the care of infants within the Neonatal Service.2. Guideline Standards and Procedures

Key Points;

- Many babies are found to have renal anomalies on antenatal ultrasound scans.
- If outpatient investigation is felt to be appropriate the please indicate the antenatal findings on the radiology request form and mention that this is if it is a high risk request.
- These babies are followed up in a multidisciplinary clinic with involvement from paediatricians, neonatologists and paediatric urologist.
- Small numbers of babies may need review in conjunction with a specialist paediatric nephrologist.
- Investigations should be requested according to the flow chart below.

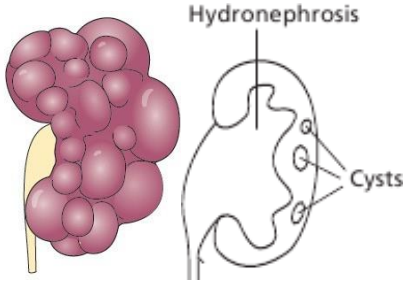
Background

Congenital abnormalities of the kidney and urinary tract are fairly common. Most abnormalities seen on antenatal ultrasound resolve spontaneously.
There is a lack of good quality evidence as to how these babies should be followed up.
Postnatal investigations are designed to identify babies that have significant renal pathology.
These guidelines are in line with the East Midlands Renal Network guidelines.
In Leicester, there is a multidisciplinary renal follow up clinic for babies born with suspected congenital abnormalities of the kidney and urinary tract.

This clinic is run by the following team who are available for advice:

Mr. Ashok RajimwaleConsultant Paediatric Surgeon and Urologist
Dr. Angela HallAssociate Specialist with an interest in Nephrology
Dr. Pradeep NagisettyConsultant Paediatric with a special interest in Nephrology

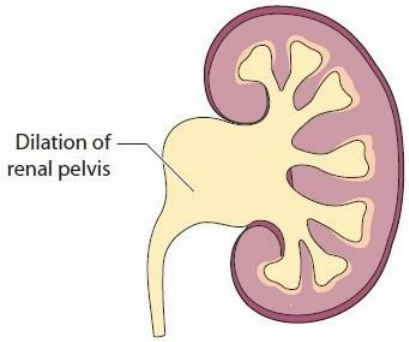
A.



Babies that have unilateral cystic kidney disease need:

- Routine renal USS (include clinical details and maternal hospital number to allow for appropriate triage)
- Referral letter to the joint renal clinic

Babies with significant bilateral cystic kidney disease need further discussion with the Consultant Neonatologist on service and the renal team.



B.

Moderate risk: Babies found to have any of the following, fall into a moderate risk group

- Severe unilateral hydronephrosis ≥20 mm with pelvicalyceal dilatation
- Bilateral hydronephrosis ≥7mm but less than 10mm
- Complex duplex i.e. significant hydronephrosis or non-obstructing ureterocoele
- Hydronephrosis ≥7mm and < 10mm in a single functioning kidney

Low risk: Babies found to have any of the following fall into a low risk group

- Simple duplex kidney
- Unilateral hydronephrosis <20mm with normal contralateral kidney
- Unilateral MCDK with normal contralateral kidney
- Unilateral renal agenesis with normal contralateral kidney
- Unilateral renal dysplasia / hypoplasia with normal contralateral kidney
- Other renal abnormality e.g. horseshoe kidney with no hydronephrosis, normal contralateral kidney and normal liquor volume

For moderate and low risk babies:

Antenatal Counselling: is often performed by the fetal medicine team, neonatologist and urologist in Leicester.

Postnatal management:

- Babies should be examined for signs of renal disease. Check that the baby is passing urine normally.
- If a baby is unwell, senior review should be sought.
- Routine blood tests for renal function are rarely useful in moderate and low risk babies and should not be routinely done
- Babies should not be commenced on antibiotic prophylaxis routinely
- Outpatient ultrasound should be requested. Please include maternal details and the details of the antenatal findings to allow for appropriate triage
- A referral to the joint renal clinic should be made
- Parents should be notified about the symptoms and signs of UTI
- Parent information leaflets are available at http://www.infokid.org.uk/

Suggested Out Patient Investigations:

Hydronephrosis

- MCUG should be considered following post natal ultrasound to look for vesicoureteric reflux
- If significant reflux is seen, antibiotic prophylaxis is commenced and the ultrasound repeated to look for progression of dilatation
- Antibiotic prophylaxis is often continued until out of nappies and free of UTIs

If there is progressive hydronephrosis or the antenatal scans suggest upper tract obstruction, a MAG 3 test should be ordered(hyperlink MCUG guideline of childrens

Multicystic Dysplastic Kidney

- Serial ultrasound investigations usually show regression of the cysts
- A DMSA scan will usually show no functioning renal tissue on the affected side. This test is also useful to look for renal scars in cases of recurrent UTI
- MCDK usually regresses by 4 or 5 years of age. It is important to check blood pressure and a urine dipstick at follow up visits
- Failure to regress and secondary hypertension would be indications for surgical intervention

Urgent Ultrasound investigation

If there is a strong index of suspicion of posterior urethral valves (for example antenatal bladder abnormalities, oligohydramnios or a postnatal poor urinary stream, the baby should be managed at the LRI, serum creatinine should be measured and an inpatient ultrasound should be arranged

For high risk babies **without** a strong index of suspicion for posterior urethral valves, serum creatinine should be measured prior to discharge. Remember that creatinine on the first few days may be unreliable. The urinary stream should be documented. If there is a normal stream and a normal creatinine for age, the baby can be discharged and an urgent outpatient ultrasound should be arranged: please write the antenatal findings and 'high risk protocol, please scan within a week' on the request form.

Please email: ImagingEscalations@uhl-tr.nhs.uk to notify them that the request has been made.
The neonatal assistants will keep a record that the scan has been requested and check the result after 48 hours, notifying the neonatal service consultant of the results.

3. Education and Training

None

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Investigations for (A) cystic or dysplastic kidneys and (B) antenatal pelvic dilatation/ hydronephrosis arranged as per information above (100%).	Audit of clinical records	NNU Consultant		Local audit group

5. Supporting References

East Midlands Renal Network Guidelines

Parent Information Leaflets available at http://www.infokid.org.uk/

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Sidhu G. Outcome of isolated hydronephrosis, a systematic review and meta-analysis. *Paediatr Nephrol.20*06: 21 (2) 218-24

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Children MCUG guideline to be hyperlink

6. Key Words

Cystic, Hydronephrosis, Nephrologist, Renal

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.

As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

CONTACT AND REVIEW DETAILS			
Guideline Lead (Name and Title) Author : Jonathan Cusack, Consultant Neonatologist			**Executive Lead** Chief Medical Officer
Details of Changes made during review:			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
18/11/2009	**1**	Neonatal Guidelines Meeting	original guideline ratified
2/7/2013 - 17/9/2013	**2**	Neonatal Guidelines Meeting Neonatal Governance Meeting	ratified after modifications
15/7/2014	**3**	R E Miralles	Minor editorial amendments
Dec 2016 - Jan 2017	**4**	Neonatal Guidelines Meeting Neonatal Governance Meeting	significant amendments by author JMC) - alignment with East Midlands Renal Network guideline
Jan 2020	**5**	Neonatal Guidelines Meeting Neonatal Governance Meeting	
Jan 2024	**6**	Neonatal Guidelines Meeting Neonatal Governance Meeting	**Added** - If outpatient investigation is felt to be appropriate the please indicate the antenatal findings on the radiology request form and mention that this is if it is a high risk request. **Updated** UHL specialist list. **Added** the renal team to discussion in cases of significant bilateral cystic kidney disease **Updated** - Babies should not be commenced on antibiotic prophylaxis routinely