

Clinical Guideline

**CONGENITAL RENAL ANOMALIES INCLUDING
ANTENATAL HYDRONEPHROSIS: POSTNATAL
MANAGEMENT**

SETTING	Neonatal Intensive Care (NICU) and paediatric / paediatric nephro-urology units in University Hospitals Bristol NHS Foundation Trust (UH Bristol) and NICU at North Bristol Trust (NBT)
FOR STAFF	Clinical and administrative staff
PATIENTS	Babies with antenatally detected antenatal hydronephrosis (ANH) and/or congenital renal anomalies

GUIDANCE

Antenatal hydronephrosis (ANH) is defined by a renal pelvis diameter (RPD) in the 'antero-posterior' transverse plane >7mm during 2nd and/or 3rd trimester of pregnancy¹.

Antenatal management (for information)

Pregnant women in whom foetal congenital anomalies of the kidneys and urinary tract (including ANH) have been detected at the anomaly screening ultrasound scan (U/S) at 20 weeks should receive further U/S scans during the course of the pregnancy as directed during antenatal care.

Where anomalies / ANH resolve on further antenatal U/S, referrals for postnatal follow-up will not be made; however pregnant women in whom foetal renal anomalies / ANH are confirmed on subsequent antenatal U/S should be notified to consultant neonatologists at UH Bristol or NBT.

Women booked at NBT with fetuses at high risk of bilateral / bladder outlet obstruction; (see red pathway, recommendation 4; page 2) will require transfer of their antenatal care to UHB and be delivered at St Michael's hospital.

Where urgent postnatal referral is required (red and amber pathways, recommendations 4-6; page 2), parents may wish to be referred to paediatric nephrology and / or urology consultants for antenatal counselling. This referral will generally be made by the foetal medicine team (but does not preclude the need to notify neonatal teams who will refer the baby, once born, to nephrology and / or urology services)

Recommendations for postnatal management (NICU teams):

1. Offer parents information on:
 - a. antenatal hydronephrosis (<https://www.infokid.org.uk/antenatal-hydronephrosis>);
 - b. renal agenesis (<https://www.infokid.org.uk/renal-agenesis>);
 - c. multicystic dysplastic kidney (MDK; <https://www.infokid.org.uk/MCDK>).

In most cases this information will already have been offered antenatally

2. Prescribe TRIMETHOPRIM 2mg/kg to be taken as a single evening dose for infants with ANH (not MDK / single kidney) following delivery (NICU team at UH Bristol and NBT).
3. Undertake newborn baby check, per local NIPE guidance, in particular checking for genital and spinal abnormalities.

4. **RED PATHWAY:** Liaise urgently with on service paediatric urology or surgery registrar and arrange urgent postnatal investigations (ultrasound and micturating cystourethrogram (MCUG)) to be undertaken at 24-48 hours of age, prior to discharge from hospital if:
 - a. Male infant with bilateral RPD (>7mm) AND hydroureter AND abnormal bladder on antenatal ultrasound AND/OR any features on antenatal ultrasound suggestive of posterior urethral valves (PUV)
 - b. Bilateral RPD > 20mm
 - c. Single kidney with RPD > 20mm
5. **AMBER PATHWAY:** Refer urgently to on service paediatric urology or surgery registrar, who will arrange for postnatal investigations (e.g. ultrasound / MCUG) to be undertaken at 3-7 days of age (as day case, unless existing inpatient) if:
 - a. Unilateral RPD > 30mm on antenatal ultrasound
6. **AMBER PATHWAY:** Refer urgently to on service paediatric nephrology registrar or consultant who will arrange for postnatal investigations (e.g. ultrasound / MCUG) to be undertaken at 3-7 days of age (as day case, unless existing inpatient) if:
 - a. Male infant with bilateral RPD (>7mm) on antenatal ultrasound but not fulfilling other criteria for investigations prior to discharge in red pathway above)
7. **GREEN PATHWAY:**
 - a. Refer all other babies not requiring urgent or earlier U/S (per points 4-6 above) to paediatric nephrology consultants, either electronically (e.g. Medway) or by letter (see appendix 1 and 2)
 - b. Request postnatal U/S to be undertaken at 2-4 weeks of age (attending renal consultant at BRHC will arrange U/S for babies born at NBT) and advise parents / carers to expect an appointment with the nephrology team at 6-12 weeks of age.
 - i. Advise parents / carers to contact renal secretaries at UHBristol (tel [REDACTED]) if an appointment for ultrasound has not been received within 2 weeks of birth

References

1. NHS Fetal anomaly screening programme 18+0 to 20+6 weeks fetal anomaly scan - National standards and guidance for England 2010, updated 2015
<http://fetalanomaly.screening.nhs.uk/standardsandpolicies>

RELATED DOCUMENTS

[Pelvi-ureteric junction dysfunction](#)

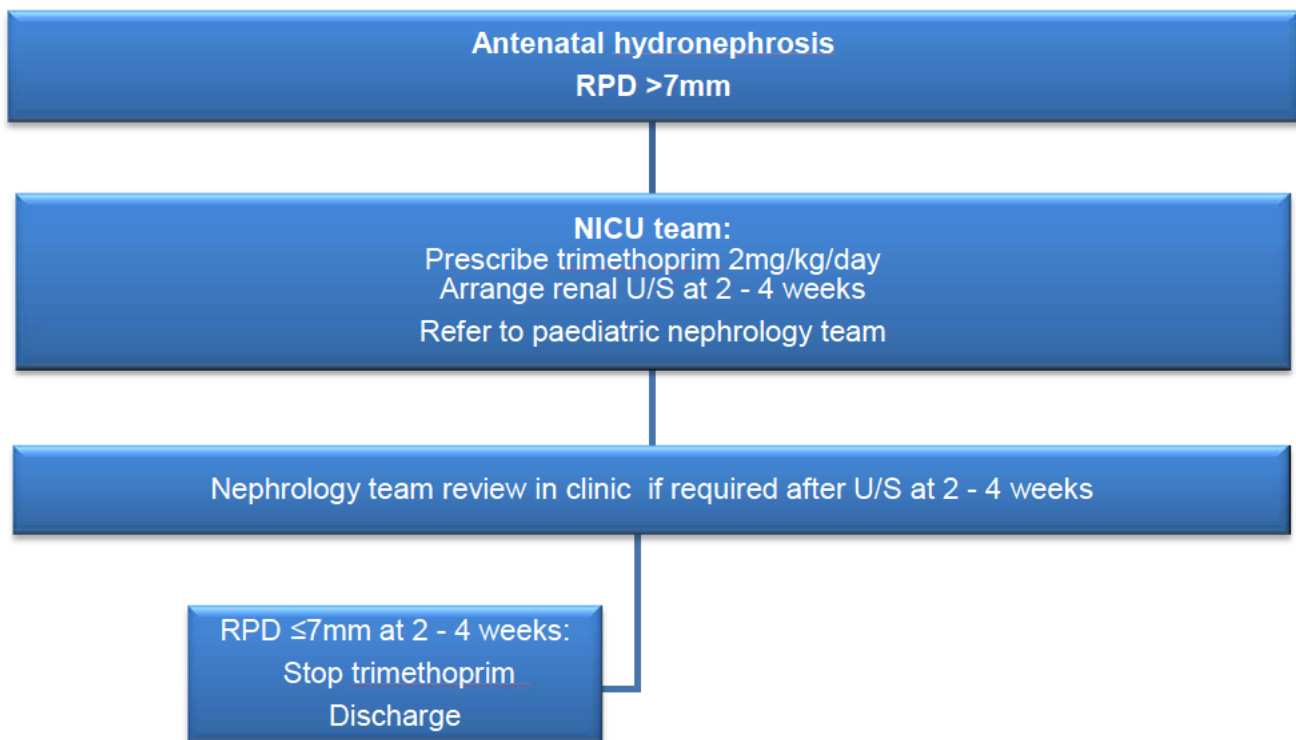
AUTHORISING BODIES

Paediatric nephrology, urology, neonatology governance groups

SAFETY QUERIES

Consultant nephrologist or urologist on call via UHB Switchboard

POSTNATAL MANAGEMENT OF ANTENATAL HYDRONEPHROSIS: FLOW CHART



EXCEPTIONS:

- 1) Liaise urgently with on service paediatric urology or surgery registrar and arrange urgent postnatal investigations (ultrasound / MCUG) to be undertaken **at 24-48 hours of age prior to discharge from hospital** if (on antenatal ultrasound):
 - a) Male infant with bilateral RPD (>7mm) AND hydroureter AND abnormal bladder on antenatal ultrasound AND/OR any features on antenatal ultrasound suggestive of posterior urethral valves (PUV)
 - b) Bilateral RPD > 20mm
 - c) Single kidney with RPD > 20mm

[RED PATHWAY]
- 2) Refer urgently to on service paediatric urology or surgery registrar who will arrange for postnatal investigations (e.g ultrasound / MCUG) to be undertaken at 3-7 days of age (as day case, unless existing inpatient) if (on antenatal ultrasound):
 - a) Unilateral RPD > 30mm on antenatal ultrasound

[AMBER PATHWAY]
- 3) Refer urgently to paediatric nephrology registrar or consultant who will arrange for postnatal investigations (e.g ultrasound / MCUG) to be undertaken at 3-7 days of age (as day case, unless existing inpatient) if (on antenatal ultrasound):
 - a) Male infant with bilateral RPD (>7mm) on antenatal ultrasound but not fulfilling other criteria for investigations prior to discharge in 1)

[AMBER PATHWAY]
- 4) Refer routinely to paediatric nephrology team who will arrange follow-up and postnatal investigations as indicated if (on antenatal ultrasound):
 - a) Congenital anomalies of urinary tract (multicystic dysplastic kidney / renal agenesis / duplex / horseshoe kidney) without hydronephrosis. Do not start trimethoprim if no ANH

[GREEN PATHWAY]

Appendix 2: Congenital Renal Anomalies

Referral Form

NAME:
ADDRESS:

MRN:
D.O.B:
ATTACH PATIENT LABEL

FOR ALL REFERRALS:

Has patient had urgent referral to Paediatric Urology or Nephrology per below? YES / NO

- 1) **[RED PATHWAY]:** Liaise urgently with on service paediatric urology / surgery registrar and arrange urgent for postnatal investigations (ultrasound / MCUG) to be undertaken at 24-48 hours of age prior to discharge from hospital if (on antenatal ultrasound):
 - a) Male infant with bilateral RPD (>7mm) AND hydroureter AND abnormal bladder on antenatal ultrasound AND/OR any features on antenatal ultrasound suggestive of posterior urethral valves (PUV)
 - b) Bilateral RPD > 20mm
 - c) Single kidney with RPD > 20mm
- 2) **[AMBER PATHWAY]:** Refer urgently to on service paediatric urology / surgery registrar who will arrange for postnatal investigations (e.g ultrasound / MCUG) to be undertaken at 3-7 days of age (as day case, unless existing inpatient) if:
 - a) Unilateral RPD > 30mm on antenatal ultrasound
- 3) **[AMBER PATHWAY]:** Refer urgently to paediatric nephrology registrar / consultant who will arrange for postnatal investigations (ultrasound / MCUG) to be undertaken at 3-7 days of age (as day case, unless existing inpatient) if:
 - a) Male infant with bilateral RPD (>7mm) on antenatal ultrasound but not fulfilling other criteria for investigations prior to discharge in 1)

FOR OUTPATIENT REFERRALS ONLY - TO BE COMPLETED BY NICU REFERRING TEAM:

A. Reason for referral:

Antenatal hydronephrosis (ANH): Yes / No (please circle) give trimethoprim
 Multicystic dysplastic kidney (MCDK): Yes / No (please circle) no trimethoprim
 Absent kidney: Yes / No (please circle) no trimethoprim
 Other (please state): Yes / No (please circle) no trimethoprim

B. ANTENATAL SCANS – dates and results (please give measurements):

Date	Gestation (weeks)	Renal pelvis diameter: right kidney	Renal pelvis diameter: left kidney	Other comments
1.				
2.				
3.				

C. Birth weight:

Signed (Requesting Doctor):

D. Trimethoprim (2mg/kg): Yes / No (please circle)

Date of completion:

FOR NICU TEAM/SECRETARY

EMAIL REFERRAL TO NEPHROLOGY SECRETARIES
 PUT COPY IN NOTES

Yes / No (please circle)
 Yes / No (please circle)