Clinical Design & Innovation
Person-centred, co-ordinated care

PAEDIATRICS

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ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Urinary Tract Infection

BACKGROUND

- Approx. 8% of girls and 2% of boys will have a symptomatic UTI in childhood
- Commoner in uncircumcised males
- E. coli is the causative organism in 90%
- Accurate diagnosis via urine culture is essential
- 30% of children with UTI have vesicoureteric reflux

PREDISPOSING FACTORS

- Congenital structural abnormalities
- Uncircumcised males
- Incomplete bladder voiding or infrequent voiding
- Constipation

OBTAINING URINE

- Clean catch is the best method
- High contamination of bag specimens

PREVENTING RECURRENCE

- Address dysfunctional voiding and constipation
- Encourage adequate fluid intake
- Encourage regular voiding and complete bladder emptying
- Recommend good perineal hygiene

PROPHYLAXIS

- Antibiotic prophylaxis is generally not recommended.
- Surgery is not routinely recommended

HISTORY

- **Infants:**
  - Fever
  - Irritability
  - Lethargy
  - Poor feeding
  - Vomiting
- **Children:**
  - Abdominal pain
  - Dysuria
  - Urgency & frequency
  - Reluctance to void
- Malodourous urine and renal angle pain uncommon

EXAMINATION

- Often normal
- Centiles & BP
- Examine lower back and perineal area
- Check for renal angle tenderness & renal masses
- Out rule constipation

INVESTIGATIONS

- Urinalysis
- Urine microscopy, culture and sensitivity
- Renal ultrasound
- MCUG if under 6 months
- DMSA / ultrasound to detect scarring
- Out rule constipation

TREATMENT

- If under 6 months or signs of pyelonephritis, will require admission for IV antibiotics
- Refer to CHI guideline for treatment
- Urine sensitivities will guide antibiotic treatment
- It is not recommended to send a repeat urine test for “test of cure” if child is asymptomatic.

IMAGING

- Renal ultrasound performed during the acute infection or 6 weeks later depending on age of patient, response to treatment and whether or not they have atypical or recurrent UTI (See NICE Guidelines)
- MCUG in infants < 6 months with atypical or recurrent UTI performed as soon as possible after acute infection.
- Recent international guidelines do not recommend MCUG after first episode of UTI in infants (only recommended after second episode or if abnormalities found on renal ultrasound)
- DMSA in children with atypical or recurrent UTI performed 4-6 months after acute infection may be considered

RECURRENT UTI

- Two or more episodes

ATYPICAL UTI

- Seriously ill
- Poor urine flow
- Abdominal or bladder mass
- Raised creatinine
- Septicaemia
- Failure to respond to treatment with suitable antibiotics within 48 hours
- Infection with non-E. coli organisms

REFERRAL

- Infants < 3 months
- Pyelonephritis or renal abscess
- Obstruction of urinary tract
- Congenital renal abnormalities
- Significant vesicoureteric reflux
- Renal/bladder stones
- Bowel/bladder dysfunction
- High risk of serious UTI

TAKE HOME MESSAGES

- UTI to be considered in all infants with fever
- Clean catch is the best method of collection
- If under 6 months: Ultrasound and MCUG
- Renal scars in 10% of UTIs

Ref: UTI Form 10/23. CDI/0061/2.0/2023

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