PAEDIATRIC ACUTE CARE GUIDELINE	
Haematuria	
Scope (Staff):	All Emergency Department Clinicians
Scope (Area):	Emergency Department

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Haematuria

Background

- Small numbers of red cells are normally excreted in urine
- Blood in the urine can originate at any site in the urinary tract, but in contrast to adults, lower tract haematuria is relatively uncommon in children
- Blood in urine may come from somewhere other than the urinary tract (e.g. vaginal haemorrhage, rectal fissure)

Causes of red urine

Not everything staining the urine pink, brown or red is haematuria:

- Urine dipsticks for haematuria are very sensitive and will also be positive in the presence of haemaglobinuria and myoglobinuria
- Dyes and foodstuffs (e.g. beetroot, blackberries) can colour the urine pink/red
- Urates in the urine of neonates may also stain the nappy pink
- Drugs (e.g. rifampicin, phenothiazines, phenolphthalein)
- Porphyria

Features of Upper Tract Haematuria may include:

- Brown urine
- Protein is often present
- RBC's are often small and misshapen
- RBC casts and tubular casts may be seen

Features of Lower Tract Haematuria may include:

- Blood towards the end of the urine stream
- Often pink or red in colour
- RBC's are of normal shape
- No proteinuria

Aetiology

- Microscopic haematuria in the setting of an acute febrile illness can be normal
- Asymptomatic micro-haematuria in children without other signs of renal disease (hypertension, oedema, proteinuria, urinary casts, poor growth or renal impairment) is relatively common
- Consider ITP, HSP and coagulation disorders

Glomerular Haematuria verses Non-glomerular Haematuria

Glomerular Haematuria	Non-glomerular Haematuria
• Glomerulonephritis • Familial Nephritis (Alport Syndrome) • Thin Basement Membrane Disease • IgA Nephropathy	• UTI • Idiopathic hypercalciuria • Stones • Anatomical abnormalities • Tumours • Trauma • Sickle Cell Disease (in relevant ethnic groups)

Assessment

Investigations in Emergency Department
• Blood pressure (raised) • Urine microscopy (abnormal RBC morphology + casts) • Urine culture • Urinalysis for protein • Plasma urea, creatinine and electrolytes • FBC • Coagulation screen • Plasma calcium, PO4, albumin

Investigations to Consider
• Urine calcium:creatinine ratio • Urine protein:creatinine ratio • Streptococcal serology • C3, C4 • ANF • Abdominal X-Ray • Renal ultrasound • Sickle cell electrophoresis

Management

- All cases of haematuria should be followed up by the family doctor, a paediatrician or paediatric nephrologist

References
External Review: Frank Willis (Consultant – Department of Nephrology): July 2015

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