Haematuria and Proteinuria

DIFFERENTIAL DIAGNOSES AND APPROACH TO INVESTIGATION

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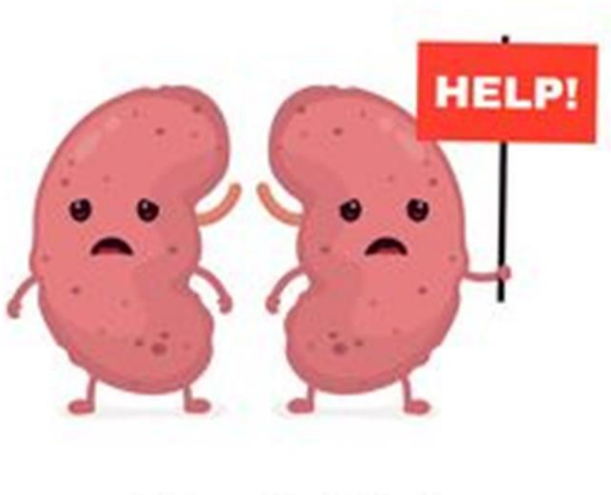
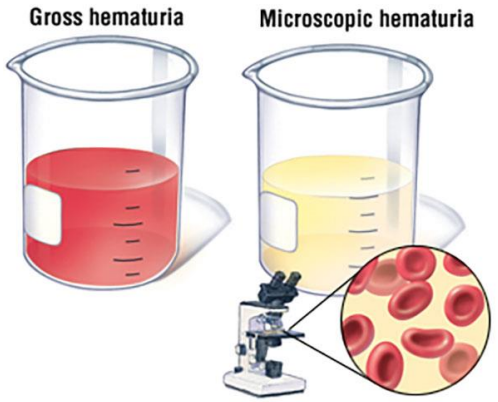
Overview

- Causes
- Red flags / when to refer
- Approach to workup and monitoring



Haematuria

- May be presentation of underlying pathology
- Can be the presenting feature or may be found incidentally
- Differential and investigations depends on whether macroscopic or microscopic



Macroscopic Haematuria

- Usually presenting feature
- Red blood in stream or seen in nappy
- Differential diagnoses
  - Not blood – urate crystals, beetroot, drugs
  - Trauma – perineal or abdominal, consider CSA
  - Bleeding tendency – Leukaemia, ITP
  - UTI / urethritis
  - Nephroblastoma
  - Nephritis / nephropathy
  - stones

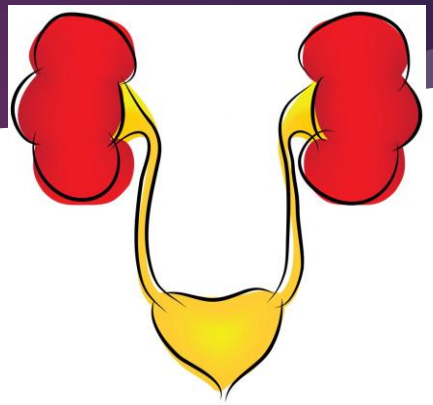
Microscopic

- More commonly chance finding
  - UTI
  - Nephritis (broad group, HSP, post strep most common)
  - Alports syndrome
  - ADPKD
  - Vulvovagninits
  - Ideopathic
  - Overlap with macroscopic

History and Examination

- History
  - Bleeding from other sites
  - Trauma
  - Fever / dysuria
  - Food and drugs
  - Painful?
- Examination
  - trauma
  - Abdominal mass
  - Rashes – petichie / HSP
  - BP and signs of fluid overload
  - Other findings on urine dip

Further Workup



- **Urgent referral**
  - Any suspicion of ALL / ITP / Nephroblastoma
  - CSA
  - Significant hypertension or signs of fluid overload
  - Stones
  - Macroscopic hameaturia

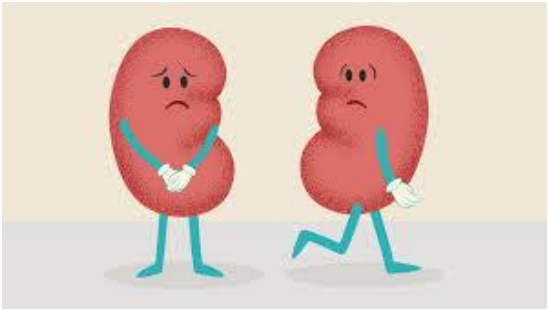
- **General paeds referral**
- Painless haematuria repeated on 2 occaisions when well – paeds referral
- Renal USS, FBC, UE, LFT, C3C4, ASOT, Bone profile, Immunoglobulins

Proteinuria

- May signify underlying pathology
- May be normal in febrile illness
- Usually requires further investigation
- Can be presenting feature or may be found incidentally

Differential Diagnoses

- Normal orthostatic response
- Fever
- UTI
- Nephrotic syndrome
- Renal pathology- glomerulonephritis / renal failure / renal leak



Heavy proteinuria

- 3 or 4+ on dipstick
- Likely to be significant
- UTI
- Nephrotic syndrome or renal pathology
- Nephrotic syndrome

Nephrotic Syndrome

- Heavy proteinuria, oedema, hypoalbuminaemia
- Periorbital oedema, ascites, hypertension
- Associated with significant morbidity
- 1st presentation should be admitted

Proteinuria - History and Examination

- Dysuria, fever
- Family history
- History of haematuria
- BP and signs of fluid overload
- Rest of urine dip
- Oedema, ascites or rashes

Workup

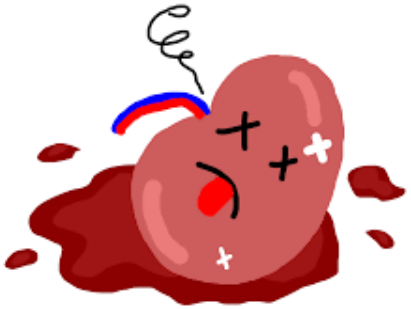
- Urgent referral if possible nephrotic syndrome
- If features of UTI treat
- If <3+ and child is well then repeat urine dip 3 x over 2/52 with 1st morning urine dipped
- IF <3+ and child was febrile repeat on 1st morning urine when child well.
- Further quantification can be done with Urine protein:creatinine ratio

Persistent Proteinuria

- Should be referred
- Significant proportion with have underlying renal pathology
- At time of referral request
  - Renal uss
  - UE, LFT, C3/4, immunoglobulins, ASOT

Summary

- Haematuria and proteinuria are relatively common findings in children
- May be normal and resolve spontaneously
- May be a feature of significant acute or chronic underlying pathology



Thank You