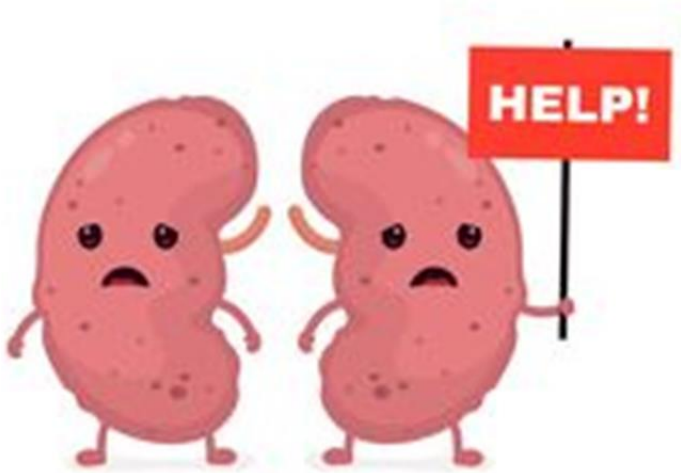
Haematuria

DIFFERENTIAL DIAGNOSES AND APPROACH TO INVESTIGATION

DR SUSIE MINSON

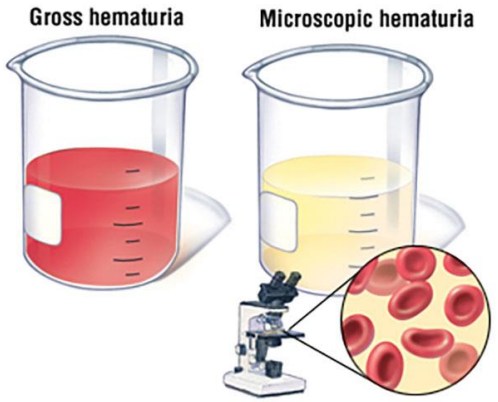
Overview

- Causes
- Red flags
- 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 - causes

- 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

Macroscopic Haematuria - Workup

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

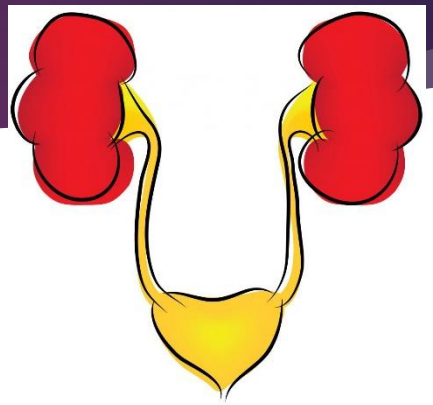
Investigations

- If clear UTI may not need further ix
- Low threshold for USS – will identify tumors, cysts and obstructing stones
- Consider bloods – FBC, coag, renal function
- If recurrent episodes or heavy bleeding the refer to urology for further assessment
- If cola / tea coloured urine then follow microscopic workup pattern

Microscopic

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

Further Workup



- **Urgent assessment**
  - Any suspicion of ALL / ITP / Nephroblastoma
  - CSA
  - Significant hypertension or signs of fluid overload
  - Stones / obstruction

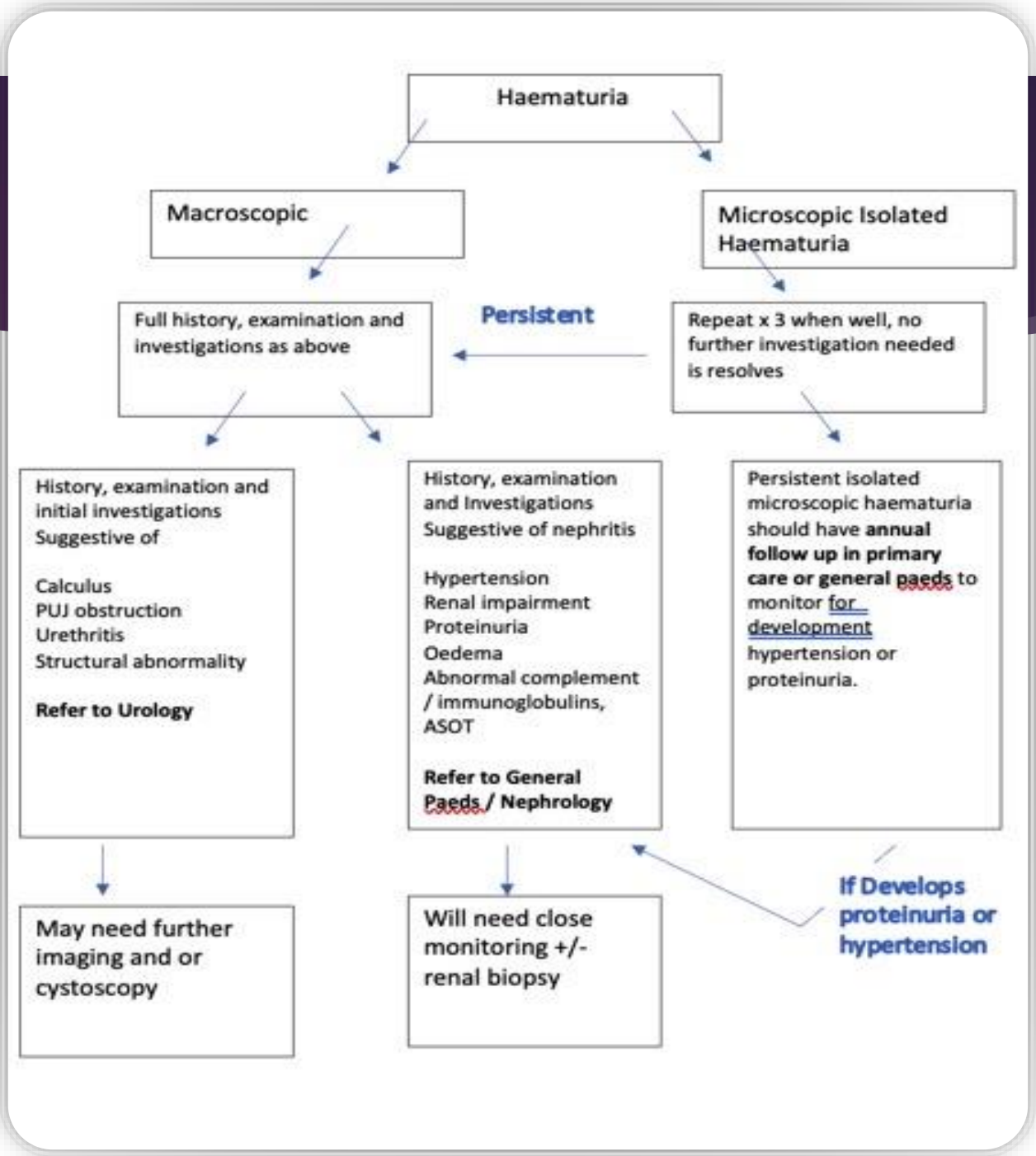
Microscopic Hameaturia - workup

- Aiming to identify children with nephritis, progressive renal disease and those with underlying systemic disease
- If well repeat x 3 when well
- Many children will be normal and only need monitoring

- **History**
  - sore throats
  - episodes or cola / tea coloured urine
  - vulvovaginitis
  - family history or renal pathology or haematuria
- **Examination**
  - rashes and fluid overload
  - blood pressure
- - urine dip

Initial Investigations

- UE
- LFT
- Coag
- ASOT
- ANA
- C3 / C4
- Immunoglobulins
- USS
- Urine albumin:creatinine ratio


Haematuria
Macroscopic
Microscopic Isolated Haematuria
Persistent
Full history, examination and investigations as above
Repeat x 3 when well, no further investigation needed is resolves
History, examination and initial investigations Suggestive of
Calculus
PUJ obstruction
Urethritis
Structural abnormality
Refer to Urology
History, examination and Investigations Suggestive of nephritis
Hypertension
Renal impairment
Proteinuria
Oedema
Abnormal complement / immunoglobulins, ASOT
Refer to General Paeds / Nephrology
Persistent isolated microscopic haematuria should have annual follow up in primary care or general paeds to monitor for development hypertension or proteinuria.
If Develops proteinuria or hypertension
May need further imaging and or cystoscopy
Will need close monitoring +/- renal biopsy

Summary

- Haematuria is a common presentation.
- Management depends on macroscopic or microscopic and on acuity.
- Key aims to identify significant underlying renal or systemic pathology and to identify children who need ongoing monitoring.
- Some children will need referral for renal biopsy but most can be monitored in primary / secondary care.