haematuria

see also urinary tract infections (UTIs) / cystitis, urology, renal medicine

- RCH guideline - haematuria

aetiology by site

haematologic

- coagulopathy
- sickle haemoglobinopathies

glomerular (esp. if glomerular RBCs &/or red cell casts)

- primary glomerular disease
- multisystem disease:
    - SLE, HSP, HUS, PAN, Wegener's granulomatosis, Goodpasture's syndrome

non-glomerular renal

- white cell casts (but these may be absent?):
    - TB
    - pyelonephritis
    - acute interstitial nephritis
    - papillary necrosis
    - polycystic kidney disease
- medullary sponge kidney
- renal infarction
- tumour
- vascular malformation
- trauma

post-renal

- stones
- tumour of ureter, bladder, urethra
- cystitis
- TB
- prostatitis, urethritis
- urinary catheter
- exercise
- benign prostatic hypertrophy

most common causes by age:

< 20 yrs:

- GN, UTI

20-40yrs:

- UTI, stone, trauma, Ca bladder/kidney

40-60yrs males:

- Ca bladder, stone, UTI, Ca kidney, BPH if > 60yrs

40-60yrs females:

- UTI, stone, Ca bladder/kidney

general approach

haematuria characteristics

- blood noted only on initiation suggests urethral cause, blood seen mainly on last few drops suggests prostatic or bladder neck source, whilst haematuria throughout urination suggests source in bladder, ureter or kidney.
- brown or smoky-colored urine usually has a renal source
- blood clots indicate non-glomerular renal or lower urinary tract source
- if cyclic with menses, may be due to endometriosis of ureter or bladder

associated symptoms/historical features:

- flank pain suggests calculus, neoplasm, renal infarction, obstruction or infection as a cause
- symptoms of dysuria, frequency or suprapubic pain suggests cystitis or urethritis
- in adult men, perineal pain, dysuria and terminal haematuria suggests prostatitis
- recent sore throat suggests possibility of post-streptococcal GN
- foreign travel or residence suggests schistosomiasis or TB
- drugs may cause acute interstitial nephritis, papillary necrosis, or haemorrhagic cystitis
- FH of HbS, polycystic or other kidney disease or renal calculi
- 15-20% of individuals exhibit haematuria after strenuous exercise which resolves in a few days

examination findings:

- arthritis, skin lesions, HT or oedema suggest GN

- new heart murmur (endocarditis) or AF suggests renal embolism
- costovertebral angle tenderness suggests pyelonephritis, stone disease
- enlarged kidney suggests polycystic kidney or malignancy
- prostatic examination may offer clues to presence of prostatitis, BPH or malignancy
- ext. genitalia may reveal urethral meatal lesion
- PV exam to exclude vulvovaginal causes of bleeding
- urinalysis with m/c/s if ? infective
- pathology tests - urea and creatinine
- if suspect calculi, polycystic kidney, tumour or obstruction then IVP or if C/I then US
- if active gross haematuria or no upper lesion then consider cystoscopy
- if elderly pt and other features are unhelpful then consider urinary cytology
- if asymptomatic, with no other abnormality on urinalysis, and not azotaemic, hypertensive, or severely anaemic, & who have no evidence of intrinsic renal disease, may be followed up as outpatients (?except if known bleeding disorder), others should generally be admitted for prompt evaluation.
- extensive OP evaluation is usually not undertaken for pts < 40 yrs with isolated episode of haematuria, but most patients over 40yrs should have a thorough evaluation