Haematuria

Discolouration of the urine

Red colour urine

- Haematuria is the commonest cause for red urine
- Haemoglobinuria
- Myoglobinuria
- Consumption of large quantities of beetroot

Red/orange discolouration

- Rifampicin
- Isoniazid
- Phenazopyridine

- Chlorpromazine
- Thioridazine
- Senna and laxatives containing a phenolphthalein component

Brown colour urine

- nitrofurantoin
- Metronidazole
- Bilirubin in the urine (High-circulating bilirubin - obstructive jaundice)

Haematuria

- Passage of red blood cells in the urine
- Presence of 5 or more red blood cells (RBCs) per high-power field in 3 of 3 consecutive centrifuged specimens obtained at least 1 week apart
- Classified as visible haematuria (VH) or non-visible haematuria (NVH)
- Haematuria is the commonest cause for red urine

Aetiology

In paediatric age

- Acute glomerular nephritis
- IgA nephropathy
- Henoch schonlein purpura
- Urological malignancy (Wilm's tumor)
- Urinary stones
- Trauma
- Bleeding disorders
- Anticoagulant

In young age group (15-40 years)

- Urinary stones
- Cystitis
- Exertional haematuria
- Poly cystic kidney disease
- Genito urinary tuberculosis
- AV malformations
- Truma
- Bleeding status

In middle age and elderly group

- Bladder cancer
- Renal cell carcinoma
- Transitional cell cancer of pelvis and ureter
- Prostate cancer
- Benign prostatic hyperplasia
- Trauma
- Bleeding status

Presentation

- Passage of clots - extraglomerular cause of hematuria
- Fever, abdominal pain, dysuria, frequency, and recent enuresis in older children - urinary tract infection
- Recent trauma to the abdomen – hydronephrosis
- Early-morning periorbital puffiness, weight gain, oliguria, dark-colored urine, edema or hypertension -glomerular cause

- Recent throat or skin infection - postinfectious glomerulonephritis
- Joint pains, skin rashes, and prolonged fever in adolescents - collagen vascular disorder.
- Anemia cannot be accounted for by hematuria alone - systemic lupus erythematosus ,bleeding diathesis
- Skin rashes and arthritis - Henoch-Schönlein purpura , systemic lupus erythematosus

Haematuria

Initial part of micturition

Urethral disease
- Carcinoma of urethra
- Urethral strictures

Mixed or even

Renal pathology

Terminal part of micturition

Pathology in the bladder neck or trigone
- Bladder carcinoma
- Bladder stones

Haematuria

Painful

Calculi
Cystitis
Clot colic

Painless

Malignancy

Investigations

- Urine full report - To confirm haematuria
- Phase contrast microscopy - dysmorphic RBCs suggests a renal (glomerular) source of the hematuria
- Renal function tests
  - Blood urea
  - Serum electrolytes
  - Serum creatinine
- A midstream or clean-catch specimen of urine - culture sensitivity (when urinary tract infection is suspected)

- Full blood count
- Coagulation studies
- Hemoglobin electrophoresis (diagnosis of sickle cell disease or trait)
- Urine calcium-creatinine ratio – Hypercalciuria
- Serum complement levels - if a glomerular cause is suspected
- Antinuclear antibody (ANA) and double-stranded DNA (dsDNA) levels - SLE
- Anti-DNase B levels

- Cystoscopy - Mandatory if patient > 40 years of age
- X-ray Kidney ureter bladder
- USS abdomen
- Intravenous urography
- CT or MRI
- Urine cytology
- Urine tumor markers

Renal biopsy

Indications for performing a kidney biopsy in patients with hematuria

- Significant proteinuria
- Abnormal renal function
- Recurrent persistent hematuria
- Serologic abnormalities (abnormal complement, ANA, or dsDNA levels)
- Recurrent gross hematuria
- A family history of end-stage renal disease

Treatment

- Asymptomatic (isolated) hematuria generally does not require treatment
- Treatment depend on the diagnosis
- Surgical intervention may be necessary in certain anatomic abnormalities, such as ureteropelvic junction obstruction, tumor, or significant urolithiasis

If Microscopic Haematuria

Paediatric age group

- Assement by a Paediatrition

Adult

Macroscopic haematuria

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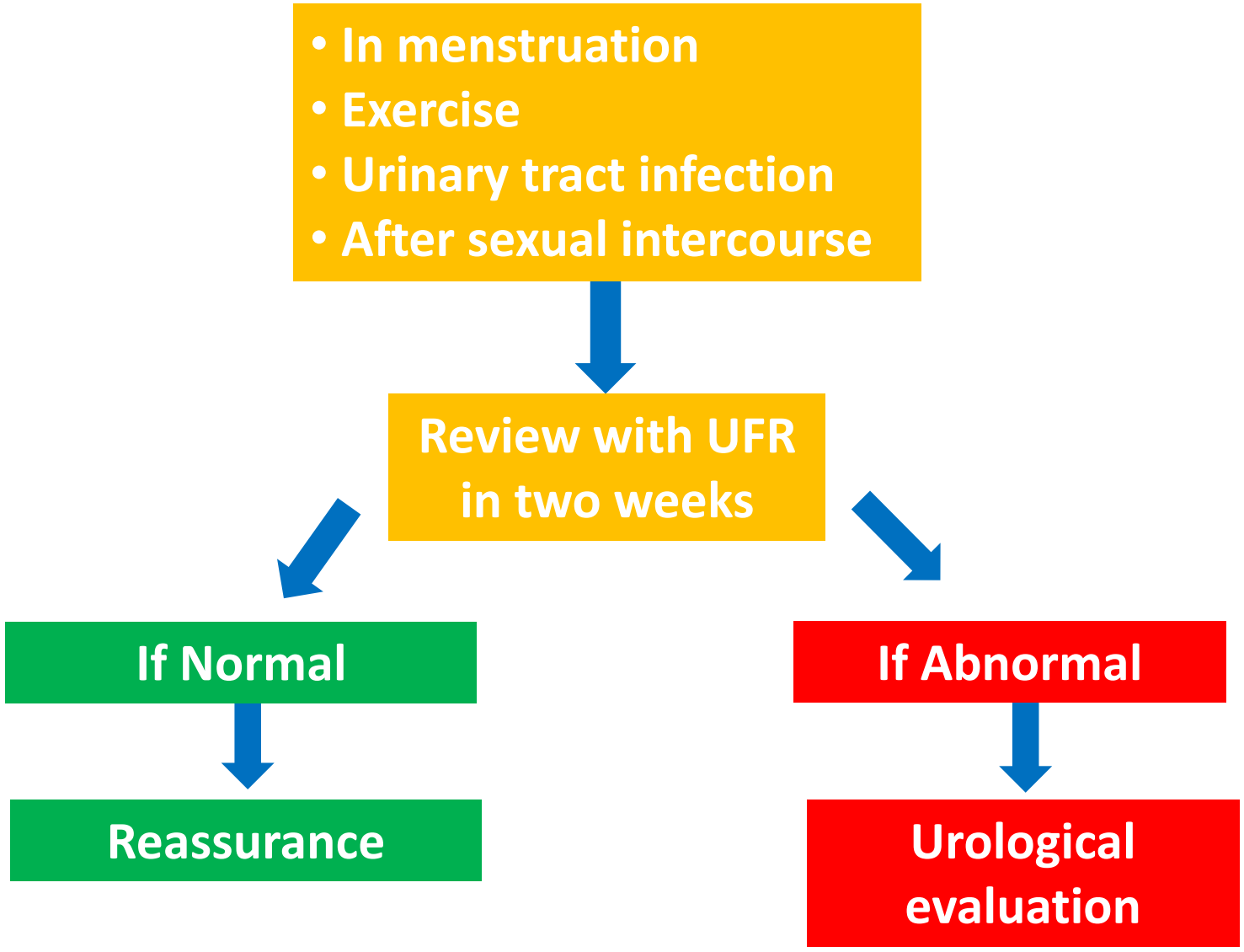
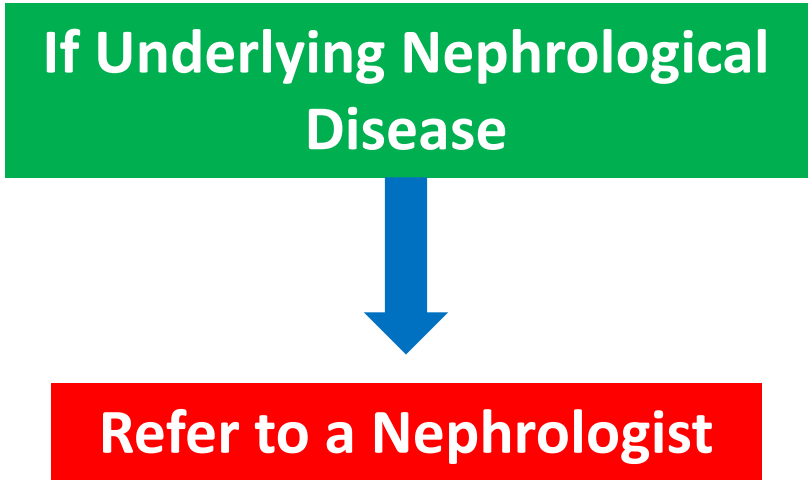
Urological evaluation

If Microscopic Haematuria





- **Other – Urological evaluation**