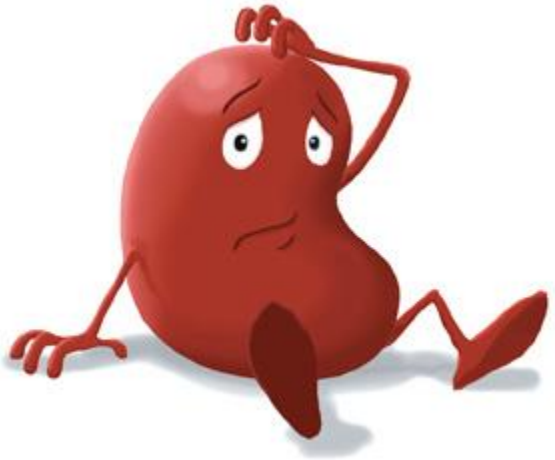
HAEMATURIA



DR. ABHIJIT AACHI

- **Presence of blood in urine is called haematuria.**
- It is abnormal and may be the only indication of pathology in the urinary tract.
- Tiny amounts of blood – microscopic haematuria.
- Substantial haemorrhage – macroscopic haematuria.

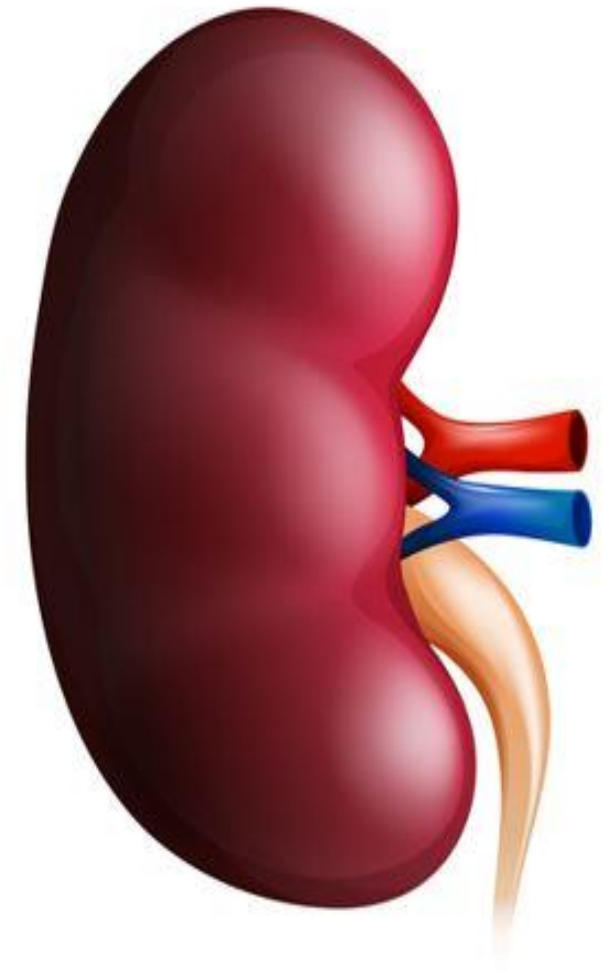
- Haematuria may be intermittent or persistent.
- Haematuria may be asymptomatic or symptomatic.
- Beginning of the act – lower urinary tract cause.
- Uniform staining throughout – prerenal, renal, vesical.
- Towards the end of the act – bladder irritation.
  (stone / infection)
- If there is pain the characteristics of the pain may help to identify the source of bleeding.

CAUSES OF HAEMATURIA

- The causes can be described under four headings :-

1. Lesions of the urinary tract

    A. Congenital
    B. Traumatic
    C. Inflammatory
    D. Neoplastic
    E. Others



➢ KIDNEY :-

A. Congenital

i. POLYCYSTIC KIDNEY DISEASE

B. Traumatic

i. RUPTURE OF THE KIDNEY

C. Inflammatory

i. TB

ii. ACUTE NEPHRITIS

D. Neoplastic

i. ANGIOMA

ii. Ca OF THE KIDNEY

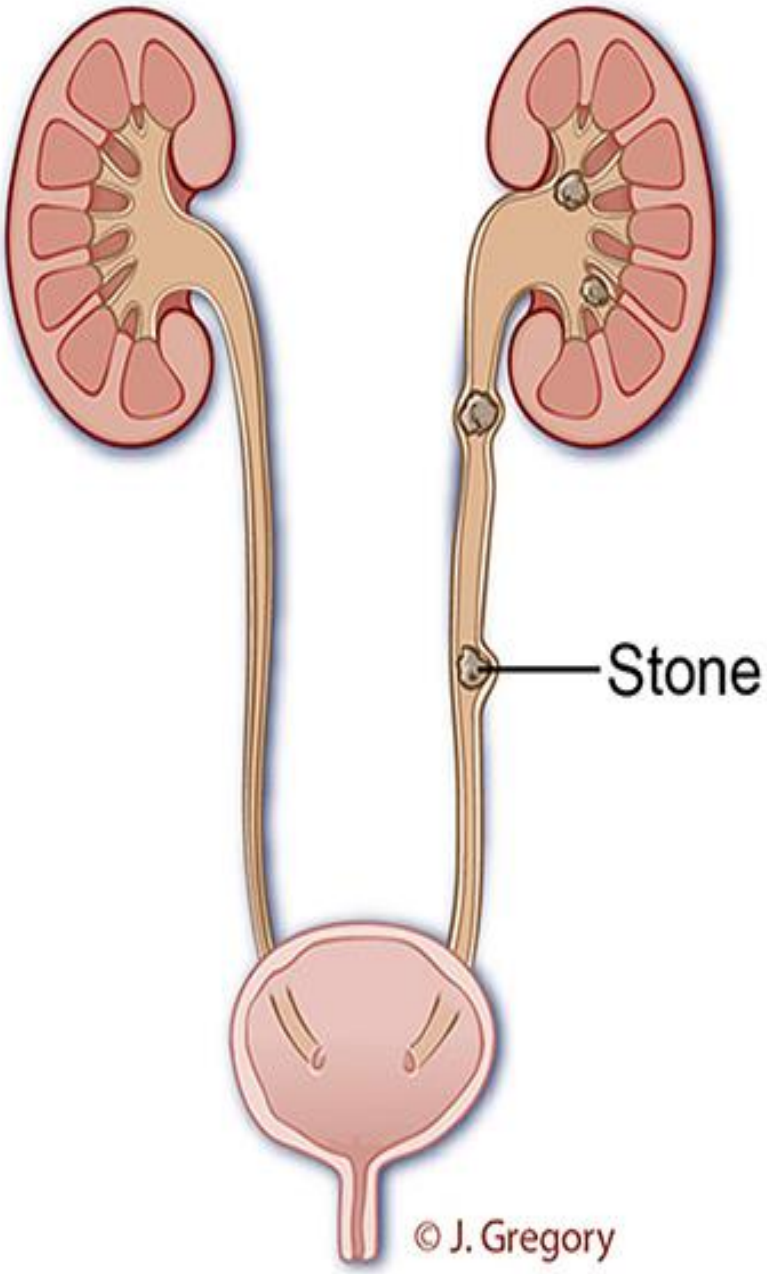
iii. RCC

iv. Ca RENAL PELVIS

E. Others

i. STONE

ii. INFARCTION



➢ URETER :-

i. STONE
ii. Ca OF THE UROTHELIUM
iii. PAPILLOMA OF THE UROTHELIUM

➢ BLADDER :-

A. Traumatic

i. RUPTURE OF THE BLADDER.

B. Inflammatory

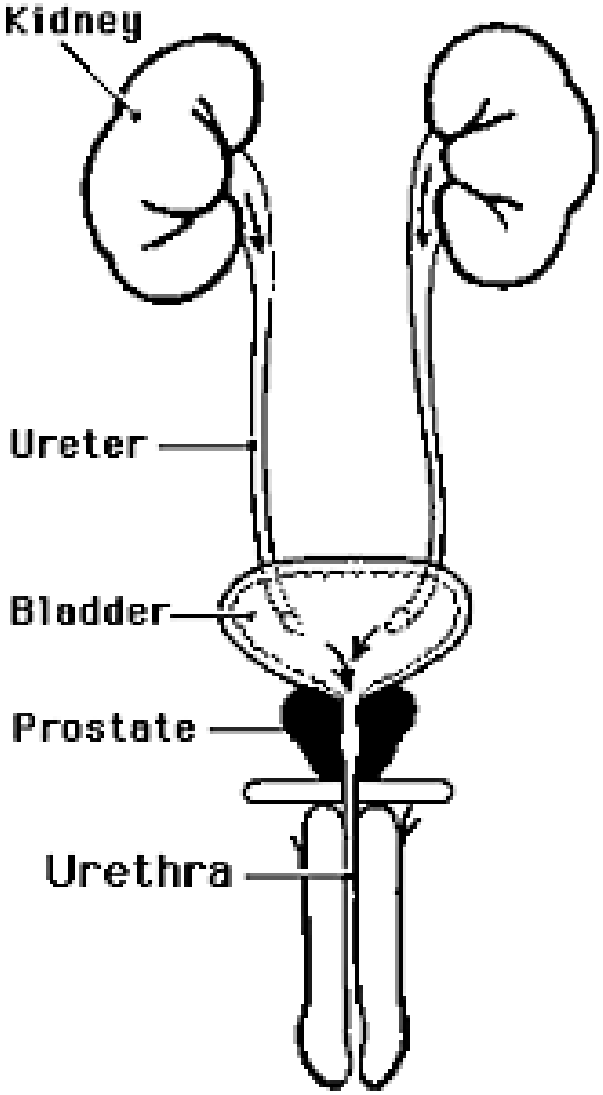
i. CYSTITIS
ii. TB
iii. BILHARZIASIS

C. Neoplastic

i. PAPILLOMA OF THE BLADDER
ii. Ca OF THE BLADDER

D. Others

i. STONE



➢ PROSTATE :-

i. BPH
ii. Ca PROSTATE
iii. PROSTATITIS

➢ URETHRA :-

A. Traumatic
   i. RUPTURE OF THE URETHRA.

B. Inflammatory
   i. ACUTE URETHRITIS

C. Neoplastic
   i. TRANSITIONAL CELL Ca.

D. Others
   i. STONE

2. Disease of the adjacent viscera involving the urinary tract.
    A. Acute appendicitis.
    B. Salpingitis
    C. Pelvic abscess
    D. Ca rectum
    E. Cervix uteri

3. After ingestion of certain drugs.
    A. Anticoagulant drugs
    B. Hexamine
    C. Sulphonamides & Salicylates (in large doses)

4. General disorders :-

A. Blood disorders

i. PURPURA
ii. SICKLE CELL ANAEMIA
iii. HAEMOPHILIA
iv. SCURVY
v. MALARIA

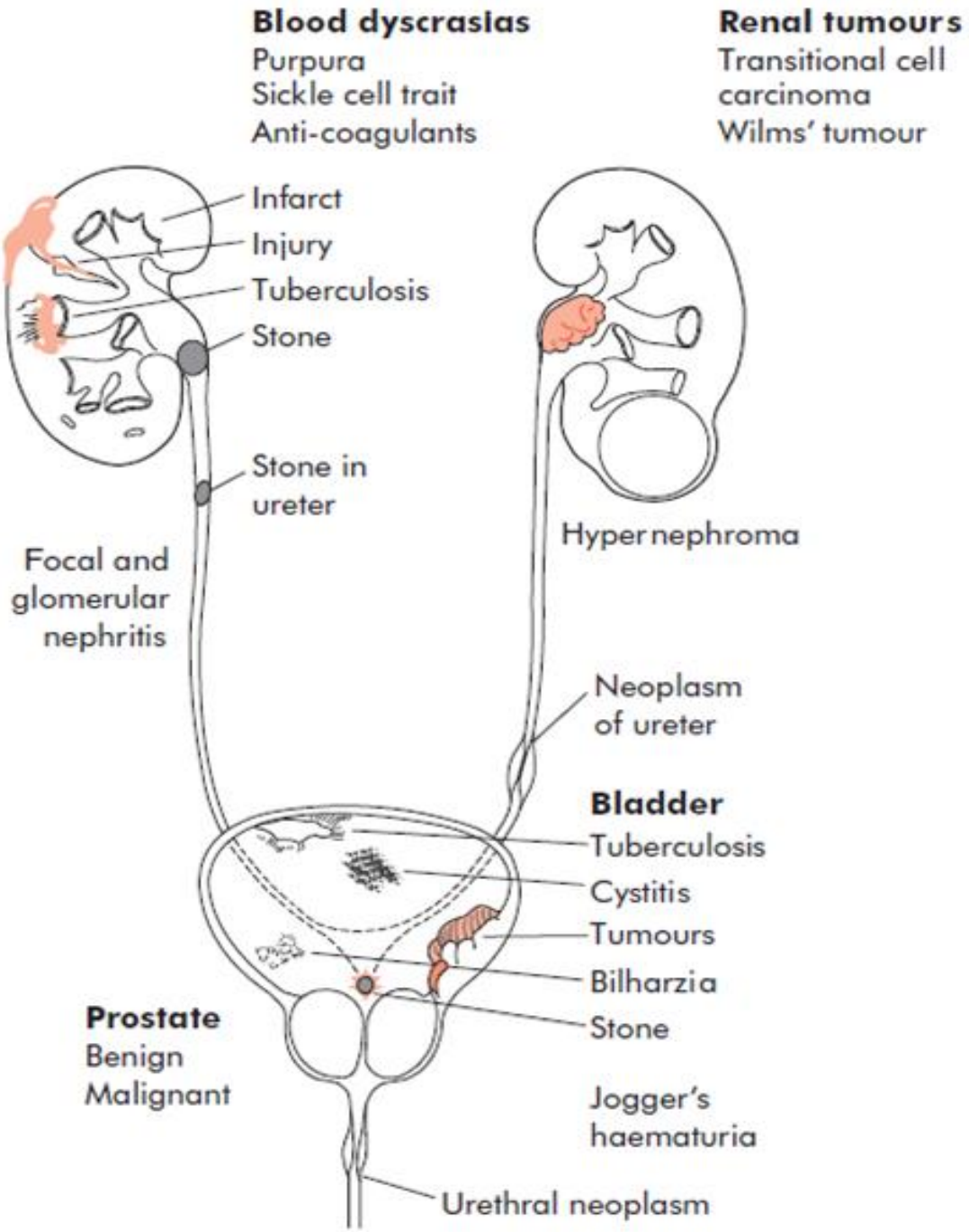
B. Infarction

i. ARTERIAL EMBOLI FROM MYOCARDIAL INFARCT
ii. SUBACUTE BACTERIAL ENDOCARDITIS

C. Congestion

i. RHF
ii. RENAL VEIN THROMBOSIS

D. Collagen diseases


Blood dyscrasias
Purpura
Sickle cell trait
Anti-coagulants
Renal tumours
Transitional cell carcinoma
Wilms' tumour
Infarct
Injury
Tuberculosis
Stone
Stone in ureter
Focal and glomerular nephritis
Hypernephroma
Neoplasm of ureter
Bladder
Tuberculosis
Cystitis
Tumours
Bilharzia
Stone
Prostate
Benign
Malignant
Jogger's haematuria
Urethral neoplasm

SIGNS AND SYMPTOMS

- Most of the patients who present with haematuria are asymptomatic.
- Few patients present with symptoms.
- Presence of at least 5 RBC's per HPF in 3 of 3 consecutive centrifuged specimens 1 week apart.

1. Abdominal pain
2. Decreased urinary force
3. hesitancy
4. incomplete voiding
5. Fever
6. Frequent urination
7. Pain during urination
8. Pain in the flank
9. Urinary urgency

DIFFERENTIAL DIAGNOSIS

- Onset of urination (initial hematuria)
  - urethra or prostate
- Throughout urination (total hematuria)
  - bladder, ureter, or kidneys
- End of urination (terminal hematuria)
  - bladder or prostate

- Abdominal pain – inflammation of the kidney or ureter caused by trauma, infection, or tumor

- Decreased urinary force
- Hesitancy
- incomplete voiding

1. lower urinary tract
2. BPH, enlarged prostate
3. tumor

- Fever – infection, typically kidney infection, prostate infection, or urethral infection

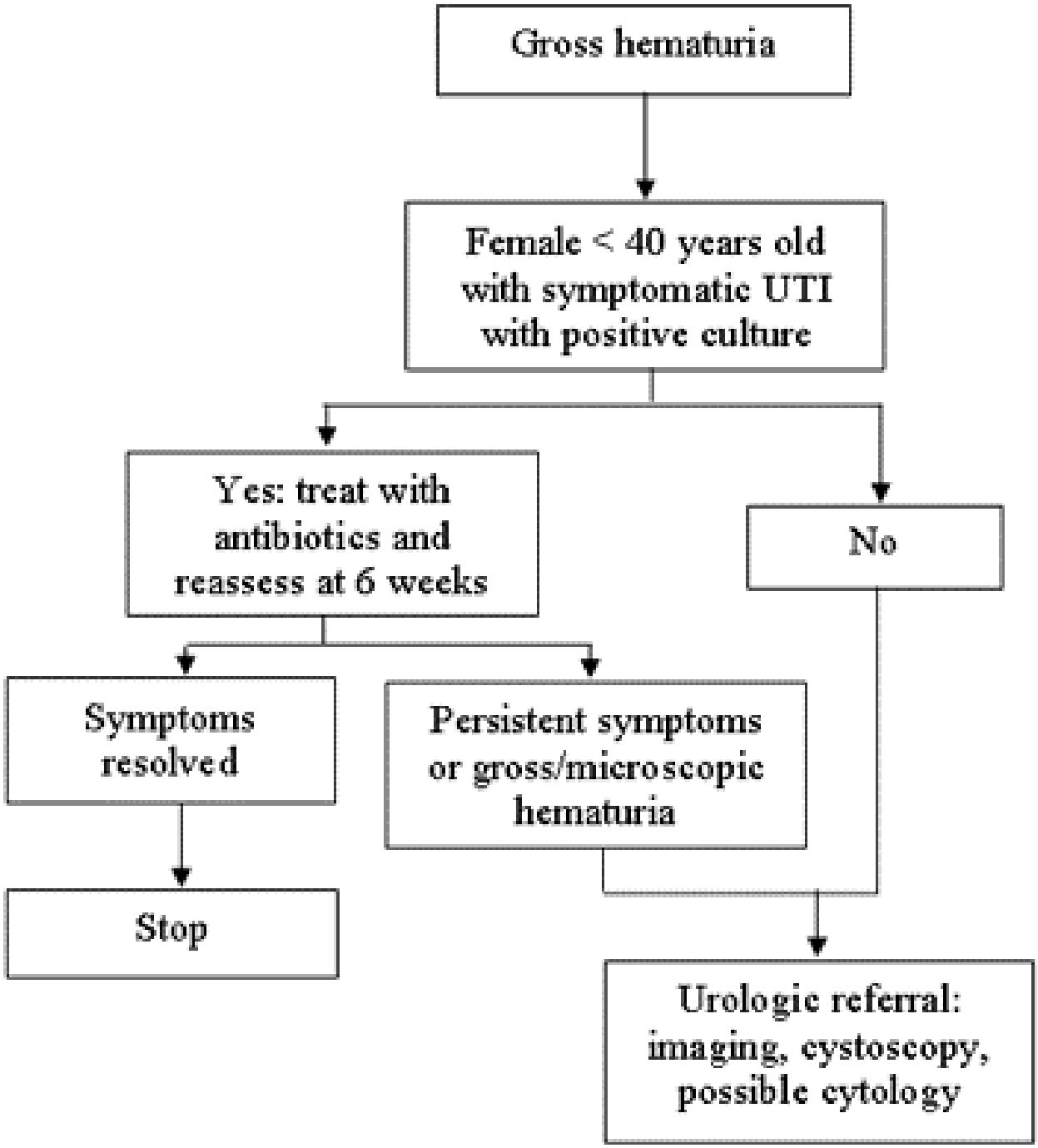
- Pain in the flank – kidney trauma or tumor

- Urinary urgency, pain, or frequency – bladder cancer

MANAGEMENT

» INVESTIGATIONS

» TREATMENT


Gross hematuria
Female < 40 years old with symptomatic UTI with positive culture
Yes: treat with antibiotics and reassess at 6 weeks
No
Symptoms resolved
Persistent symptoms or gross/microscopic hematuria
Stop
Urologic referral: imaging, cystoscopy, possible cytology

INVESTIGATIONS

1. Complete urine examination :-

- Urine analysis involves checking the composition of the urine.
- presence of WBC along with RBC indicates UTI.
- If infection in the urinary tract is suspected urine culture is done to check for presence of bacteria and other pathogens.

2. Blood test :-

- Blood test is also a common diagnostic approach.
- If there is presence of wastes in the blood sample, then it signifies impairment of the kidney function.

3. Imaging tests :-

- CT urography (latest DD method)
- Ultrasound
- IVP

4. Cystoscopy :-

- Cystoscopy involves optical examination of bladder with the help of a scope.
- In this procedure, a thin tube fixed with a tiny camera is introduced in the urethra and images of the bladder are taken.
- The images are examined carefully for making out abnormalities in the bladder.

5. Dipstick Test :-

- For a patient with hematuria, dipstick analysis is usually performed to identify any case of urinary tract disorder.

- Cellulose strips are used to check the amount of blood present in the urine.

- if the strip changes its colour to dark green after dipping in the urine sample, it indicates the presence of blood in the urine.

6. Renal biopsy in patients with hematuria :-
    i. Significant proteinuria
    ii. Abnormal renal function
    iii. Recurrent persistent hematuria
    iv. Recurrent gross hematuria
    v. Family H/O end stage renal disease

7. BUN

8. Serum creatinine

9. Serologic testing

TREATMENT

- Hematuria treatment ranges from antibiotic therapy to surgery, depending on the underlying cause.

1. Benign prostatic hyperplasia (BPH) may be treated in many ways.

Medication (e.g., terazosin) is often prescribed to treat BPH.

When the condition does not respond to these measures, surgical removal of all or part of the gland may be recommended.

TURP.

2. Kidney and bladder stones typically require procedures that remove or break up the stones, and measures to prevent their recurrence.

3. Kidney disease is treated according to diagnosis. In severe cases, dialysis may be necessary.

4. Medications (e.g., quinine, rifampin, phenytoin) that cause hematuria are discontinued.

5. Trauma-induced hematuria (e.g., a blow to the kidneys) is treated according to the severity of the injury, ranging from bed rest and close clinical observation to surgical repair or, in extreme cases, removal of the damaged tissue or organ.

6. Cancerous tumors found in the kidney, ureters, prostate, or bladder may be treated with radiotherapy, chemotherapy, and surgery.

7. Urinary tract blockages are treated with correction or removal of the blockage.

8. Viral infections of the urinary tract and sexually transmitted diseases (STDs) are treated with medication.

PROGNOSIS OF HAEMATURIA

Prognosis differs according to the underlying condition and the patient's response to treatment.