



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
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DEPARTMENT : PHYSICIAN ASSISTANT

COURSE NAME : NEPHROLOGY

UNIT : CLINICAL EXAMINATION OF KIDNEY

**TOPICS : DISORDERS OF URINE VOLUME -
HEMATURIA, PROTEINURIA, OEDEMA**



HEMATURIA



Definition:

- Visible blood in urine.

Pathophysiology:

- Bleeding anywhere in the urinary tract from glomeruli to the urethra.



Causes:

- Infections: UTIs, cystitis.
- Stones: Renal, ureteral, bladder stones.
- Tumors: Bladder cancer, renal cell carcinoma.
- Trauma: Blunt or penetrating injury.
- Glomerulonephritis: Immune-mediated glomerular damage.
- Polycystic kidney disease: Rupture of cysts.
- Coagulopathies: Anticoagulant therapy, hemophilia.



Diagnosis:

- Urinalysis with microscopy.
- Urine culture (for infections).
- Imaging (ultrasound, CT urography).
- Cystoscopy (for bladder evaluation).
- Renal biopsy (if glomerular disease is suspected).



Management:

- Treat underlying cause (e.g., antibiotics for infections, surgery for tumors).
- Supportive care for bleeding disorders.
- Monitor for complications (e.g., anemia).



PROTEINURIA



Transient Proteinuria

Definition:

- Temporary presence of protein in urine.

Causes:

- Fever, exercise, stress, acute illness.



Diagnosis:

- Urine dipstick test.
- Follow-up testing to confirm persistence.

Management:

- Often resolves without specific treatment.



Persistent Proteinuria

Definition:

- Persistent presence of protein in urine on repeated tests.

Pathophysiology:

- Glomerular: Increased permeability of glomerular basement membrane.
- Tubular: Defective reabsorption of filtered protein.



Causes:

- Glomerulonephritis: Immune-mediated damage to glomeruli, Diabetic nephropathy: Hyperglycemia-induced glomerular damage.
- Hypertension: Chronic pressure-induced damage.
- Amyloidosis: Deposition of amyloid proteins in kidneys.
- Lupus nephritis: Autoimmune attack on kidneys.
- Pre-eclampsia: Pregnancy-induced hypertensive renal damage.



Diagnosis:

- Quantitative protein measurement (24-hour urine protein, spot urine protein/creatinine ratio).
- Blood tests (e.g., serum albumin, creatinine, BUN).
- Renal biopsy for definitive diagnosis.



Management:

- Treat underlying cause (e.g., glycemic control in diabetes, immunosuppressants for lupus).
- ACE inhibitors or ARBs to reduce proteinuria.
- Dietary modifications (low protein, low sodium).



OEDEMA



Definition:

- Widespread swelling due to severe fluid retention.

Pathophysiology:

- Combination of increased hydrostatic pressure, decreased oncotic pressure, and capillary permeability.



Causes:

- Severe heart failure: Systemic venous congestion.
- Kidney disease: Nephrotic syndrome, advanced CKD.
- Liver disease: Cirrhosis with hypoalbuminemia.
- Malnutrition: Severe protein deficiency.



Management:

- Treat underlying cause (e.g., heart failure, liver disease).
- Nutritional support.
- Diuretics.
- Monitor and manage electrolyte imbalances.



ASSESSMENT



- What is Hematuria ?
- What is Proteinuria ?