

Syllabus for the post of

Associate Professor, Nephrology, Class-I (Advt. No. 33/2023-24)

Marks – 200

Questions – 200

Medium - English

1. BASIC SCIENCES:

Applied basic sciences knowledge relevant to the field of nephrology including electrolyte and acid base disorders, Investigative techniques, selection and interpretation of results; Pathogenesis of renal diseases and renal histopathology, Diseases of the urinary tract (glomerular diseases urinary tract infection, tubulointerstitial diseases, inherited diseases, toxic nephropathies, systemic diseases with renal involvement, renal stone disease, urinary tract obstruction, vascular diseases of kidney, hypertension, neoplasia etc), Renal failure (diagnosis and medical management), Principles and practice of dialysis, Renal transplantation and Transplant immunology, Biostatistics and clinical epidemiology, Ethics, psychosocial, economics of management of renal diseases, human organ transplant act and medicolegal aspects of transplantation.

2. ASSESSMENT OF RENAL DISEASE

History and clinical examination of patients with renal disease, Urinalysis and microscopy, Clinical assessment of renal function, Renal function in the newborn infant, The aging kidney, Imaging in renal disease, Renal biopsy Immunological investigation of renal disease

3. BASICS- Embryology of the kidney

Anatomy of the kidney, Renal circulation, Solute transport / Both organic and inorganic, Renal Acidification Urine Concentration & Dilution, Role of kidney in blood pressure regulation, Endocrine and Autocrine function of the kidney

4. PHARMACOLOGY AND DRUG

Handling of drugs in kidney disease Drug- induced nephropathies, Clinical use of diuretics, Systemic cancer therapies and the kidney

5. FLUID AND ELECTROLYTE DISORDERS

Hypo/hyponatremia, Disorders of water balance, Hypo/hyperkalemia, Hypo/hypercalcemia, Hypo/hyperphosphatemia, Hypo/hypermagnesemia, Clinical acid- base disorders

6. EPIDEMIOLOGY AND RISK FACTORS

Epidemiology of kidney disease Kidney disease in Indian subcontinents, Risk factors of CKD Nephron endowment, Aging and kidney disease, CKDu (chronic kidney disease of unknown etiology)

7. PEDIATRIC NEPHROLOGY

Malformation of the kidney; Fluid, Electrolyte; Acid base disturbance, Disease of kidney and Urinary track, Dialysis in Children

8. Urologic Aspects of Pediatric Nephrology

Anomalies of the urinary tract, The pathophysiologic consequences of urinary tract obstruction, Special fetal and neonatal issues genitourinary (GU) issues; Urinary tract infection (UTI) in infancy, childhood, adolescence; Vesicoureteral reflux (VUR) , Neurogenic bladder, Enuresis in Children, Urinary tract trauma, Renal tumours in children

9. GLOMERULAR DISEASE

Proteinuria and/or hematuria, Nephrotic syndrome, Minimal change disease Focal segmental glomerulosclerosis, Immunoglobulin A nephropathy and Henoch- Schönlein purpura, Membranous nephropathy, Mesangiocapillary glomerulonephritis, Acute endocapillary glomerulonephritis, Crescentic glomerulonephritis, Antiglomerular basement membrane (Goodpasture's) disease, Infection- related glomerulonephritis, Malignancy- associated glomerular disease, Glomerular disease in the tropics

10. THE KIDNEY IN SYSTEMIC DISEASE

Diabetes mellitus, Amyloid and immunotactoid glomerulopathy, Plasma cell dyscrasias Sarcoidosis, Systemic vasculitis, Mixed cryoglobulinemias and hepatitis C infection, Systemic lupus erythematosus, Scleroderma- systemic, sclerosis Rheumatoid arthritis, connective tissue disease, and sjögren's syndrome, Sickle cell nephropathy, Cancer and the kidney

11. TUBULAR DISEASE

Isolated defects of tubular function, Fanconi syndrome, Renal tubular acidosis, Hypokalemia, tubular disorders, Nephrogenic diabetes insipidus

12. CHRONIC INTERSTITIAL DISEASE

Analgesic nephropathy, Nonsteroidal anti- inflammatory drugs and the kidney, Nephrotoxic metals Balkan nephropathy, Aristochic acid nephropathy ('Chinese herb nephropathy') and other rare causes of chronic interstitial nephritis

13. URINARY TRACT INFECTION

Lower and upper urinary tract infection in adults, Urinary tract infection in children, Renal tuberculosis or other mycobacterial infections, Fungal infections and the kidney, UTI in Pregnancy and Graft pyelonephritis

14. RENAL STONE DISEASE

Medical management of stone disease, Surgical management of stone disease, Nephrocalcinosis, Renal stone disease in children

15. ACUTE KIDNEY INJURY (AKI)

Clinical approach to AKI, Renal replacement therapies in AKI, Dialysis and hemoperfusion treatment of acute poisoning, Glomerulonephritis, vasculitis, and nephritic syndrome, Acute tubulointerstitial nephritis, Hemolytic uremic syndrome and thrombotic thrombocytopenic purpura, Hepatorenal syndrome, Ischemic AKI, Pigment- induced AKI, AKI in tropical countries, AKI in infants and children, AKI in pregnancy AKI in the elderly

16. CHRONIC KIDNEY DISEASE (CKD)

Assessment of CKD, Endocrine disorders in CKD, Sexual disorders in CKD, Hypertension in CKD, Cardiovascular risk factors in CKD, Gastrointestinal disorders in CKD, Liver disorder in CKD, Hematological disorders in CKD, Skeletal disorders in CKD, β 2- Microglobulin amyloidosis in CKD, Immune function in CKD, Coagulation disorders in CKD, Dermatologic disorders in CKD, Neuropsychiatric disorders in CKD

17. SPECIAL PROBLEMS IN CKD

CKD in the elderly, CKD in diabetic patients, CKD in pregnancy, CKD in children, Growth and endocrine disturbances in children with CKD

18. DIALYSIS

Dialysis strategies, Vascular access Hemodialysis, hemofiltration and hemodiafiltration, Peritoneal dialysis, Adequacy of dialysis, Medical management of the dialysis patient, Psychological aspects of treatment for renal failure

19. RENAL TRANSPLANTATION

Donor & Recipient issues, Transplantation immunobiology, Medical & surgical complications following transplantation, Early management of transplant recipients, Immunosuppression for renal transplantation, Chronic complications in transplant recipients, CMV, BKV and other virus related renal damage.

20. INHERITED RENAL DISEASE

Investigation of inherited renal disease, Autosomal dominant polycystic kidney disease, Nephronophthisis, Alport's syndrome, Primary hyperoxalurias

21. STRUCTURAL AND CONGENITAL ABNORMALITIES

Renal dysplasia, Vesicoureteric reflux and reflux nephropathy, Urinary tract obstruction, Congenital abnormalities of the urinary tract, Medullary sponge kidney

- 22. RESEARCH METHODOLOGY.**
- 23. MEDICO LEGAL ASPECTS RELEVANT TO THE DISCIPLINE.**
- 24. INDIAN MEDICAL COUNCIL (PROFESSIONAL CONDUCT, ETIQUETTE AND ETHICS) REGULATIONS, 2002.**
- 25. CURRENT TRENDS AND RECENT ADVANCEMENTS IN THE FIELD OF NEPHROLOGY.**