

Paper II: - Technical Subject

1. General
 - 1.1 Anatomy of the kidney and urinary tract
 - 1.2 Physiology of the kidney and urinary tract
 - 1.3 Immunological basic of kidney damage
 - 1.4 Pathophysiology of Haematuria
 - 1.5 Pathophysiology of proteinuria
 - 1.6 Physiology of fluid and electrolytes balance
 - 1.7 Physiology of acid and base balance
 - 1.8 Investigations related to kidney diseases
2. Glomerular diseases
 - 2.1 Glomerulonephritis
 - 2.1.1 Primary
 - 2.1.2 Postinfections GN
 - 2.1.3 Systematic disease causing glomerulonephritis
 - 2.1.3.1 SLE
 - 2.1.3.2 PAN
 - 2.1.3.3 Good pasture syndrome
 - 2.1.3.4 Wegener's Granuloma
 - 2.1.3.5 Churg's strauss syndrome
3. Systematic diseases affecting glomerulous
 - 3.1 Diabetes mellitus
 - 3.2 Hypertension
 - 3.3 Amyloidosis
4. Functional defects and the Diseases of the Renal Tubules and Urinary Tract
 - 4.1 Renal tubular acidosis
 - 4.2 Renal Glycosuria
 - 4.3 Fanconi Syndrome
 - 4.4 Urinary tract infection
 - 4.5 Acute and chronic pyelonephritis
 - 4.6 Renal tuberculosis
5. Obstruction of the urinary tract
 - 5.1 Calculous disease of the kidney and urinary tract
 - 5.2 Cancer urinary bladder
 - 5.3 Enlarged prostate
 - 5.4 Urethral Stricture
6. Pigment Nephropathy
 - 6.1 Rhabdomyolysis
 - 6.2 Haemolysis
7. Drug induced renal disease
 - 7.1 Analgesics nephropathy
8. Malignant disease of the kidney
 - 8.1 Hypernephroma

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- 8.2 Wilm's tumour
9. Failure of the renal functions
 - 9.1 Acute renal failure
 - 9.2 Chronic renal failure
10. Metabolism
 - 10.1 Calcium and phosphorus metabolism
11. Renal replacement therapy
 - 11.1 Dialysis
 - 11.1.1 Peritoneal
 - 11.1.1.1 Intermittent peritoneal dialysis
 - 11.1.1.2 Chronic ambulatory peritoneal dialysis
 - 11.1.2 Haemodialysis
 - 11.1.3 Vascular access for haemodialysis
 - 11.1.4 Renal transplantation
 - 11.1.4.1 Donor–Live related or unrelated, cadaveric
 - 11.1.4.2 Pre-transplant management
 - 11.1.4.2 Post-transplant management
12. Congenital diseases of the kidney
 - 12.1 Hereditary nephritis
 - 12.2 Adult polycystic kidney disease
 - 12.3 Medullary sponge kidney
13. Renal Vascular Disease causing Hypertension
 - 13.1 Renal artery stenosis
14. Acid-base Balance
 - 14.1 Acidosis
 - 14.1.1 Respiratory
 - 14.1.2 Metabolic
 - 14.2 Alkalosis
 - 14.2.1 Respiratory
 - 14.2.2 Metabolic
15. Electrolyte Imbalance
 - 15.1 Sodium
 - 15.1.1 Hpyernatraemia
 - 15.1.2 Hypernatraemia
 - 15.2 Potassium
 - 15.2.1 Hpyernatraemia
 - 15.2.2 Hypernatraemia
16. Prescribing drugs in renal failure
17. Deit in renal Diseases

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Model Questions

1. A 25 years old female patient presented to the medical OPD with the complaints of generalized swelling of one month duration. She gave the history of joint pain and fever on and off. Investigation revealed:– Hb.-10gm/dl. Total WBC count - 3800/cmm., Platelets - 75000/cmm. & urine albumin - +++
 - a) What is the most likely diagnosis?
 - b) What other investigations would you like to do?
 - c) How would you manage the case?

2. A young man of good build was brought to the emergency with the history of reduced urine output (250 ml. in 24 hours) of two days duration. He gives history of severe physical assault five days prior to onset of oliguria. He remained in good health before.

Laboratory investigation:

Hb. - 12gm/dl., WBC count - 9000cmm., ESR- 20mm/1hr, N -76%, L-24%, E - 0%, M - 0%, Serum creatinine - 1400 micro.mol/l, Blood urea - 14 mmol/l, Serum sodium - 129 mmol/l, Serum K + - 6.8mmol/l, Serum Ca+-2.0mmol/l, Urine R/E & M/E-Alb.-+, WBC -3-4/Hpf., RBC - 1/2 Hpf.

- Q1. What are the significant features in the above data?
 - Q2. What is the probable diagnosis?
 - Q3. What test would you like to do to confirm your Diagnosis?
 - Q4. How would you manage the case?
3. Write down the pathophysiology of haematuria. How would you manage a case of renal tuberculosis?
 4. Write down the pathophysiology of glomerulonephritis. How would you manage a case of Idiopathic Membranous glomerulonephritis?