Asstt. Professor Comp. Exam-2024
(Medical Education Department)

07/07/2025

MPA-25

790501

प्रश्न–पुस्तिका संख्या व बारकोड /
Question Booklet No. & Barcode

इस प्रश्न-पुस्तिका को तब तक न खोलें जब तक कहा न जाए। Do not open this Question Booklet until you are asked to do so.

पुस्तिका में पृष्ठों की संख्या : 32
Number of Pages in Booklet : 32
पुस्तिका में प्रश्नों की संख्या : 150
No. of Questions in Booklet : 150

Paper Code : 57

Sub : Nephrology

Exam Date- 03/07/2025

समय : 02:30 घण्टे + 10 मिनट अतिरिक्त*
Time : 02:30 Hours + 10 Minutes Extra*

अधिकतम अंक : 150
Maximum Marks : 150

प्रश्न–पुस्तिका के पेपर की सील/पॉलिथीन बैग को खोलने पर प्रश्न–पत्र हल करने से पूर्व परीक्षार्थी यह सुनिश्चित कर लें कि :

- प्रश्न–पुस्तिका संख्या तथा ओ.एम.आर. उत्तर–पत्रक पर अंकित बारकोड संख्या समान हैं।
- प्रश्न–पुस्तिका एवं ओ.एम.आर. उत्तर–पत्रक के सभी पृष्ठ व सभी प्रश्न सही मुद्रित हैं। समस्त प्रश्न, जैसा कि ऊपर वर्णित है, उपलब्ध हैं तथा कोई भी पृष्ठ कम नहीं है / मुद्रण त्रुटि नहीं है।

किसी भी प्रकार की विसंगति या दोषपूर्ण होने पर परीक्षार्थी वीक्षक से दूसरा प्रश्न–पत्र प्राप्त कर लें। यह सुनिश्चित करने की जिम्मेदारी अभ्यर्थी की होगी। परीक्षा प्रारम्भ होने के 5 मिनट पश्चात् ऐसे किसी दावे/आपत्ति पर कोई विचार नहीं किया जायेगा।

On opening the paper seal/polythene bag of the Question Booklet before attempting the question paper, the candidate should ensure that :

- **Question Booklet Number and Barcode Number of OMR Answer Sheet are same.**
- **All pages & Questions of Question Booklet and OMR Answer Sheet are properly printed. All questions as mentioned above are available and no page is missing/misprinted.**

If there is any discrepancy/defect, candidate must obtain another Question Booklet from Invigilator. Candidate himself shall be responsible for ensuring this. No claim/objection in this regard will be entertained after five minutes of start of examination.

परीक्षार्थियों के लिए निर्देश

1. प्रत्येक प्रश्न के लिये एक विकल्प भरना अनिवार्य है।
2. सभी प्रश्नों के अंक समान हैं।
3. प्रत्येक प्रश्न का मात्र एक ही उत्तर दीजिए। एक से अधिक उत्तर देने की दशा में प्रश्न के उत्तर को गलत माना जाएगा।
4. OMR उत्तर-पत्रक इस प्रश्न-पुस्तिका के अन्दर रखा है। जब आपको प्रश्न-पुस्तिका खोलने को कहा जाए, तो उत्तर-पत्रक निकाल कर ध्यान से केवल नीले बॉल पॉइंट पेन से विवरण भरें।
5. कृपया अपना रोल नम्बर ओ.एम.आर. उत्तर-पत्रक पर सावधानीपूर्वक सही भरें। गलत रोल नम्बर भरने पर परीक्षार्थी स्वयं उत्तरदायी होगा।
6. ओ.एम.आर. उत्तर-पत्रक में करेक्शन पेन/व्हाईटनर/सफेदा का उपयोग निषिद्ध है।
7. प्रत्येक गलत उत्तर के लिए प्रश्न अंक का 1/3 भाग काटा जायेगा। गलत उत्तर से तात्पर्य अशुद्ध उत्तर अथवा किसी भी प्रश्न के एक से अधिक उत्तर से है।
8. प्रत्येक प्रश्न के पाँच विकल्प दिये गये हैं, जिन्हें क्रमशः 1, 2, 3, 4, 5 अंकित किया गया है। अभ्यर्थी को सही उत्तर निर्दिष्ट करते हुए उनमें से केवल एक गोले (बबल) को उत्तर-पत्रक पर नीले बॉल पॉइंट पेन से गहरा करना है।
9. यदि आप प्रश्न का उत्तर नहीं देना चाहते हैं तो उत्तर-पत्रक में पाँचवें (5) विकल्प को गहरा करें। यदि पाँच में से कोई भी गोला गहरा नहीं किया जाता है, तो ऐसे प्रश्न के लिये प्रश्न अंक का 1/3 भाग काटा जायेगा।
10.* प्रश्न-पत्र हल करने के उपरांत अभ्यर्थी अनिवार्य रूप से ओ.एम.आर. उत्तर-पत्रक जाँच लें कि समस्त प्रश्नों के लिये एक विकल्प (गोला) भर दिया गया है। इसके लिये ही निर्धारित समय से 10 मिनट का अतिरिक्त समय दिया गया है।
11. यदि अभ्यर्थी 10% से अधिक प्रश्नों में पाँच विकल्पों में से कोई भी विकल्प अंकित नहीं करता है तो उसको अयोग्य माना जायेगा।
12. मोबाइल फोन अथवा अन्य किसी इलेक्ट्रोनिक यंत्र का परीक्षा हॉल में प्रयोग पूर्णतया वर्जित है। यदि किसी अभ्यर्थी के पास ऐसी कोई वर्जित सामग्री मिलती है तो उसके विरुद्ध आयोग द्वारा नियमानुसार कार्यवाही की जायेगी।

चेतावनी : अगर कोई अभ्यर्थी नकल करते पकड़ा जाता है या उसके पास से कोई अनधिकृत सामग्री पाई जाती है, तो उस अभ्यर्थी के विरुद्ध पुलिस में प्राथमिकी दर्ज कराते हुए **राजस्थान सार्वजनिक परीक्षा (भर्ती में अनुचित साधनों की रोकथाम अध्युपाय) अधिनियम, 2022** तथा अन्य प्रभावी कानून एवं आयोग के नियमों-प्रावधानों के तहत कार्यवाही की जाएगी। साथ ही आयोग ऐसे अभ्यर्थी को भविष्य में होने वाली आयोग की समस्त परीक्षाओं से विवर्जित कर सकता है।

INSTRUCTIONS FOR CANDIDATES

1. **It is mandatory to fill one option for each question.**
2. **All** questions carry equal marks.
3. Only **one** answer is to be given for each question. If more than **one** answers are marked, it would be treated as wrong answer.
4. The **OMR** Answer Sheet is inside this Question Booklet. When you are directed to open the Question Booklet, take out the Answer Sheet and fill in the particulars carefully with **Blue Ball Point Pen** only.
5. Please correctly fill your Roll Number in **OMR** Answer Sheet. Candidates will themselves be responsible for filling wrong Roll No.
6. **Use of Correction Pen/Whitener in the OMR Answer Sheet is strictly forbidden.**
7. **1/3 part of the mark(s) of each question will be deducted for each wrong answer.** A wrong answer means an incorrect answer or more than one answers for any question.
8. **Each question has five options marked as 1, 2, 3, 4, 5. You have to darken only one circle (bubble) indicating the correct answer on the Answer Sheet using BLUE BALL POINT PEN.**
9. **If you are not attempting a question then you have to darken the circle '5'. If none of the five circles is darkened, one third (1/3) part of the marks of question shall be deducted.**
10.* **After solving question paper, candidate must ascertain that he/she has darkened one of the circles (bubbles) for each of the questions. Extra time of 10 minutes beyond scheduled time, is provided for this.**
11. **A candidate who has not darkened any of the five circles in more than 10% questions shall be disqualified.**
12. **Mobile Phone or any other electronic gadget in the examination hall is strictly prohibited. A candidate found with any of such objectionable material with him/her will be strictly dealt with as per rules.**

Warning : If a candidate is found copying or if any unauthorized material is found in his/her possession, F.I.R. would be lodged against him/her in the Police Station and he/she would be liable to be prosecuted under **Rajasthan Public Examination (Measures for Prevention of Unfair means in Recruitment) Act, 2022 & any other laws applicable and Commission's Rules-Regulations.** Commission may also debar him/her permanently from all future examinations.

उत्तर–पत्रक में दो प्रतियाँ हैं – मूल प्रति और कार्बन प्रति। परीक्षा समाप्ति पर परीक्षा कक्ष छोड़ने से पूर्व परीक्षार्थी उत्तर–पत्रक की दोनों प्रतियाँ वीक्षक को सौंपेंगे, परीक्षार्थी स्वयं कार्बन प्रति अलग नहीं करें। वीक्षक उत्तर–पत्रक की मूल प्रति को अपने पास जमा कर, कार्बन प्रति को मूल प्रति से कट लाइन से मोड़ कर सावधानीपूर्वक अलग कर परीक्षार्थी को सौंपेंगे, जिसे परीक्षार्थी अपने साथ ले जायेंगे। परीक्षार्थी को उत्तर–पत्रक की कार्बन प्रति चयन प्रक्रिया पूर्ण होने तक सुरक्षित रखनी होगी एवं आयोग द्वारा माँगे जाने पर प्रस्तुत करनी होगी।

1. A 70-year-old woman with a history of multiple myeloma was admitted for treatment of hypercalcemia. Investigations: serum calcium 3.4 mmol/L (2.2–2.6), serum creatinine 110 µmol/L (60–110), urinary protein : creatinine ratio 50 mg/mmol. He was initially treated with intravenous 0.9% saline and intravenous pamidronate. Because of recurrent hypercalcemia, she was given pamidronate every 4 to 6 weeks. After 12 months, the following results were obtained: serum calcium 2.69 mmol/L (2.2–2.6), serum creatinine 256 µmol/L (60–110), 24 hour urine protein 8.9 grams. What would be the most likely finding on renal biopsy ?

(1) Acute interstitial nephritis

(2) Cast nephropathy

(3) Focal segmental glomerulosclerosis

(4) LCDD

(5) Question not attempted

2. Which histologic feature on renal biopsy suggests a "secondary" FSGS pattern related to "structural-functional adaption" ?

(1) Adhesions or synechiae to Bowman capsule

(2) Glomerulomegaly and perihilar segmental sclerosis and hyalinosis

(3) Hypertrophy and hyperplasia of the visceral epithelial cells

(4) Diffuse mesangial hypercellularity

(5) Question not attempted

3. Which of the following best describes CFHR nephropathy ?

(1) C_3 glomerulopathy associated with C_3 nephritic factor

(2) C_3 glomerulopathy associated with complete absence of CFHR

(3) C_3 glomerulopathy associated with heterozygous mutation of CFHR

(4) C_3 glomerulopathy associated with autoantibodies against CFHR

(5) Question not attempted

4. The key investigation for the diagnosis of immunotactoid glomerulopathy is :

(1) Immunofixation or immunoelectrophoresis of serum proteins

(2) Bone marrow aspiration

(3) Immunofluorescence examination of kidney biopsy sample

(4) Electron microscopy of kidney biopsy sample

(5) Question not attempted

5. A 29-year-old man presented with a 7-month history of polyuria, polydipsia and worsening shortness of breath on exertion for the past 3 weeks. He had also experienced pain in both feet but could not remember injuring them recently. On examination blood pressure was 165/83 mm Hg, there were bi-basal crepitations on auscultation of the chest and a number of abdominal telangectasia. His serum creatinine is 290 µmol/L, with protein/creatinine ratio of 312 mg/mmol. A renal biopsy was performed. Which of the following is most likely to be found on electron microscopy ?

(1) "Zebra bodies" in cytoplasm of podocytes

(2) Subendothelial electron dense deposits

(3) Mesangial fibrils deposits

(4) Mesangial electron dense deposits

(5) Question not attempted

6. Microcysts in distal tubules without interstitial inflammation in kidneys is characteristic MRI finding of CTID associated with -

(1) Lithium

(2) Hypokalemia

(3) Hyperuricemia

(4) Hyperoxaluria

(5) Question not attempted

7. Which is false with respect to Immune check point inhibitor associated AKI ?

(1) Usually an early complication occurring within a few weeks (< 4 weeks) of therapy

(2) Most common form of injury is ATIN

(3) Atezolizumab has the strongest association with renal adverse events

(4) Increased risk with combination of immune-check point inhibitor use

(5) Question not attempted

8. Drug induced acute interstitial nephritis is mediated by which of the following pathogenic mechanism ?

(1) Type I hypersensitivity reaction

(2) Type II hypersensitivity reaction

(3) Type III hypersensitivity reaction

(4) Type IV hypersensitivity reaction

(5) Question not attempted

9. Which of the following statements is not true of Uddanam Nephropathy ?
   (1) It is named after Uddanam area, which is a lush green region with rich coconut and cashew plantations in Srikakulam district, Karnataka state, India.
   (2) Histologically it is characterized by glomeruli being essentially normal with no increase in cellularity, segmental lesions, or crescents. Tubular atrophy, peri-tubular lymphomononuclear inflammation, and interstitial fibrosis are the dominant findings in renal biopsy.
   (3) Male sex, agricultural worker, increasing age are the main epidemiological risk factors of Uddanam nephropathy.
   (4) No conclusive cause of Uddanam nephropathy has yet been found.
   (5) Question not attempted

10. In acute interstitial nephritis, all are true except
   (1) The commonest cause is drug induced.
   (2) Blood eosinophila is seen only in 30% of cases, yet eosinophiluria is seen up to 70% of cases.
   (3) Should be suspected in any non-oliguric acute renal failure.
   (4) Predominant infiltration of the tubulo-intersitium with eosinophils on renal biopsy is more suggestive of a viral etiology.
   (5) Question not attempted

11. Which of the following is not a formula for calculated eGFR ?
   (1) Cockroft Gault formula
   (2) Shwartz formula
   (3) DuBois formula
   (4) MDRD formula
   (5) Question not attempted

12. True statement regarding : Hyperphosphatemia in CKD :
   (1) Increased risk for vascular calcification and mortality.
   (2) Each 1 mg/dL increment in serum phosphate concentration associated with 50% greater prevalence of coronary artery disease in pre dialysis CKD population.
   (3) White compared to blacks are more likely to develop more severe hyperphosphatemia
   (4) Rising FGF23 occurs along with visible hyperphosphatemia.
   (5) Question not attempted

13. True statement regarding classification of chronic kidney disease :
   (1) KDIGO puts forward the heat map combining GFR and hypertension severity.
   (2) The composite of risk is very high suggested by Green in the heat map.
   (3) Burden of complications are high in CKD stage 4–5 with GFR < 30 ml/min/1.73 m^2.
   (4) Susceptibility to side effects of medication or diagnostic and therapeutic procedures are increased with the level of albuminuria.
   (5) Question not attempted

14. True statement regarding Nutritional Management of CKD

(1) Recommended levels of dietary protein of high quality of .8 gm/kg/day.

(2) An increase in saturated fatty acid and a decrease in α-3 PUFA intake has been advocated for cardio protection.

(3) High fructose diet reduces inflammatory biomarkers and blood pressure.

(4) In non dialyses CKD daily sodium intake is recommended to upper limit of 4.3 gm/day.

(5) Question not attempted

15. True statement regarding Antibody mediated pure red cell aplasia in CKD.

(1) Rapid fall in hemoglobin in patient receiving ESA therapy, associated with dramatic reduction in reticulocyte count ($< 20 \times 10^9$/L)

(2) Use of darbepoetin can be effective treatment.

(3) Bone marrow shows normal erythroid progenitor cells.

(4) Anti erythropoietic antibodies are negative.

(5) Question not attempted

16. True statement regarding : Cardiomyopathy in dialysis patient –

(1) Systolic dysfunction is very common in CKD.

(2) Diastolic dysfunction is the strongest predictor of recurring heart failure in dialysis patient.

(3) In asymptomatic CKD-5D the proportion of patients with systolic dysfunction is at 7 times higher than in community.

(4) K/D0Q1 recommends echocardiography be repeated at 3 months intervals in dialysis patients.

(5) Question not attempted

17. Viral hepatitis is a typical complication of hemodialysis treatment. Which statement describes viral hepatitis in advanced CKD correctly ?

(1) Hepatitis B virus (HBV) infection leads to chronic infection in the majority of affected CKD patients.

(2) Acute HBV infection in CKD patients is typically severe, characterized by jaundice and fever.

(3) HBV infection can be easily prevented in CKD patients by vaccination as recommended to the general population.

(4) The clinical course of hepatitis C infection is largely different in CKD patients and those with normal renal function.

(5) Question not attempted

18. Causes of Hypo-responsiveness to erythropoietin stimulating agent therapy are all except :
(1) Inflammation
(2) Vitamin B_{12} deficiency
(3) Uraemia
(4) Hypoparathyroidism
(5) Question not attempted

19. Which is not true - High Phosphate levels lead to high PTH values because
(1) Reduces Serum calcium and thus increased PTH.
(2) Reduces Vit D3 leading to increased PTH.
(3) Resistance to action of Vit D3 leading to increased PTH.
(4) Increased Serum calcium and thus increased PTH.
(5) Question not attempted

20. Treatment of MBD in CKDG3 doesn't include
(1) Treating acidosis
(2) Treating Vit D def
(3) Calcimimetics
(4) PO4 binder
(5) Question not attempted

21. Markers of bone formation use in CKD are all except :
(1) Alkaline phosphatase
(2) Bone specific alkaline phosphatase
(3) Osteocalcin
(4) Tartarate resistant acid phosphatase
(5) Question not attempted

22. Adverse effects of hyperglycemia in diabetic kidney disease are least likely to be mediated by which of the following pathway ?
(1) Up-regulation of Protein Kinase C pathway.
(2) Conversion of glucose to sorbitol and eventually to fructose by polyol pathway.
(3) Production of Advance glycation end products.
(4) Elevated adiponectin levels.
(5) Question not attempted

23. You are treating a 25 year old hemodialysis patient for infective endocarditis. You are worried about therapeutic drug levels of antimicrobial agents. Which of the following drugs is not significantly cleared by hemodialysis, so it do not require supplemental dose administration after dialysis and can be administered at specific times independent of hemodialysis ?
(1) Meropenam (2) Flucloxacillin
(3) Tobramycin (4) Tiecoplanin
(5) Question not attempted

24. Which of the following fact regarding drug dosing patients with renal insufficiency is not true ?
(1) Because of reduced clearance from body, loading doses of renal excreted drugs should be reduced and individualized in patients with CKD.
(2) With exceptions, dose modification usually is not clinically necessary until GFR is below 30 ml/min.
(3) Use of MDRD or CKD-EPI formula for eGFR estimation may lead to drug dosing recommendations different from those of manufacturer's.
(4) In patients with severe acute kidney injury (AKI) and no anticipation of immediate recovery, the drugs should be prescribed in dosages appropriate for GFR below 10 ml/min.
(5) Question not attempted

25. Which of the following is not recommended test for iron status ?

(1) TSat

(2) Percent Hypochromic RBCs

(3) Retic Hb content

(4) Erythrocyte Hb content

(5) Question not attempted

26. Which of the following lab abnormalities are not classical to CKD related dyslipidemia ?

(1) High triglycerides

(2) High HDL

(3) Change in composition of LDL

(4) No change in total cholesterol

(5) Question not attempted

27. 76-year-old bed-ridden man with CKD stage G3aA1 was inadvertently prescribed high dose diuretics. He is brought to emergency department with acute confusional state. He has dry mucous membranes, decreased skin turgor, fever, tachypnea, and a blood pressure of 142/82 mm Hg without orthostatic changes. The serum sodium concentration is 168 mEq per litre, and the body weight is 68 kg. Hypernatremia caused by pure water depletion due to insensible losses is diagnosed, and an infusion of 5 percent dextrose is planned. How much fall in serum sodium is anticipated in this case after infusion of 1 litre 5% Dextrose solution ?

(1) 4.8 meq (2) 5.4 meq

(3) 6 meq (4) 6.4 meq

(5) Question not attempted

28. A 67-year gentleman with a history of metastatic melanoma is undergoing therapy with nivolumab. After 6 weeks, the patient develops AKI with creatinine rising to 3.8 mg/dL. Urine analysis shows Protein 1+ and 4-5 WBCs/HPF with no RBCs. Which of the following statement regarding AKI with Immune checkpoint inhibitors is correct ?

(1) Most common cause of AKI is ATN.

(2) Nivolumab also associated with autoimmune nephritis.

(3) Use of ICI is associated with increased risk of rejection in post renal transplant patient.

(4) Incidence of AKI with ICI is 15-18%.

(5) Question not attempted

29. True statement regarding NGAL as predictor of AKI :

(1) Urinary NGAL increases 10 folds and serum NGAL 5 folds within 4 hours of cardiopulmonary bypass in children who later develop AKI.

(2) 4 hours urine NGAL correlated with etiology and timing of AKI.

(3) Urinary NGAL are specific to kidney and are released when necrosis or apoptosis of proximal tubular cells occur.

(4) During transient AKI, NGAL as biomarker may be raised despite serum creatinine being normal.

(5) Question not attempted

30. Amphotericin induced Acute kidney injury
(1) The nephrotoxicity is reported to occur in 30% of patients receiving this treatment.
(2) It directly affects the loop of Henle.
(3) Its nephrotoxicity causes sodium, potassium and magnesium wasting.
(4) It is known to provoke efferent arteriolar vasoconstriction.
(5) Question not attempted

31. Which of the following study is a RCT on use of N-acetycysteine (NAC) for prevention of AKI in patients undergoing contrast study ?
(1) PROTECT (2) PRESERVE
(3) RESCUE (4) PREVENT
(5) Question not attempted

32. A 50-year-old patient develops Acute Tubular Necrosis (ATN) following prolonged hypotension during septic shock. Serum creatinine rises from 1.0 mg/dL to 3.2 mg/dL over 48 hours, and urine microscopy reveals muddy brown granular casts. Based on the predominant histopathological and pathophysiological features of ischemic ATN, which segment of the renal tubule is most severely affected and primarily responsible for the observed injury ?
(1) SI segment of proximal convoluted tubule
(2) Distal convoluted tubule, due to its role in concentrating urine and exposure to hypoxic stress
(3) Thick ascending limb of the loop of Henle
(4) S3 segment of proximal convoluted tubule
(5) Question not attempted

33. Which of the following is false fact regarding use of isolated ultrafiltration in Acute Decompensated Heart Failure (ADHF) ?
(1) Whenever available, extracorporeal ultrafiltration is recommended for the primary management of patients with decompensated heart failure, as first line therapy.
(2) In the Ultrafiltration Versus Intravenous Diuretics for Patients Hospitalized for Acute Decompensated Heart Failure (UNLOAD) trial, hypervolemic patients with heart failure who were randomized to isolated ultrafiltration had more rapid fluid loss and decreased rehospitalizations within 90 days as compared with patients randomized to diuretic therapy.
(3) In Cardiorenal Rescue Study in Acute Decompensated Heart Failure (CARRESS-HF) trial, ultrafiltration was inferior to diuretic therapy with respect to the bivariate endpoint of change in serum creatinine level and body weight 96 hours after enrollment.
(4) Studies have not demonstrated any beneficial effects of isolated ultra filtration in ADHF, in terms of differences in kidney function or patient survival.
(5) Question not attempted

34. According to Cairo-Bishop definition, diagnosis of laboratory tumor lysis syndrome requires at least two of the lab criteria achieved in the same 24-hour interval from 3 days before to 7 days after chemotherapy initiation. Which one of the following is not a diagnostic criteria of tumor lysis syndrome ?

(1) Uric acid ≥ 8.0 mg/dL or ≥ 25% increase from baseline

(2) Potassium ≥ 6.0 mmol/L or ≥ 25% increase from baseline

(3) Magnesium < 1.8 mg/dL or > 25% decrease from baseline.

(4) Calcium ≤ 7.0 mg/dL or ≥ 25% decrease from baseline

(5) Question not attempted

35. A 58 year old female was diagnosed with metastatic lung cancer. She was started with Pembrolizumab, a noval immune checkpoint inhibitor type of chemotherapeutic agent. After 3 cycles her serum creatinine is increased to 2.4 mg/dL. Renal biopsy was performed at this point. What would be the most likely histological finding in this case ?

(1) Acute tubular Necrosis

(2) Thrombotic microangiopathy

(3) Acute interstitial Nephritis

(4) Crystal deposition in collecting ducts

(5) Question not attempted

36. A 60-year-old male with history of benign prostatic hypertrophy presents complaining of nausea and vomiting. Laboratory values include serum Na of 145 mmol/L, Blood Urea Nitrogen (BUN) of 45 mg/dL, creatinine of 2.0 mg/dL, urine Na of 08 meq/L, and urine creatinine of 80 mg/dL. Which of the following is the MOST likely diagnosis ?

(1) Prerenal AKI

(2) Acute Tubular Necrosis (ATN)

(3) Glomerulonephritis

(4) Postrenal failure

(5) Question not attempted

37. Factional excretion of sodium (FENa) is very usefulness marker to distinguish pre-renal AKI from ATN. However, in certain conditions FENa of >1% may be seen even in cases of pre-renal AKI. Which of the following pre-renal AKI conditions are associated with FENa > 1% ?

A. Prerenal AKI in patients receiving diuretics,

B. Patients with metabolic alkalosis and bicarbonaturia.

C. Patients underlying CKD.

D. Multiple myeloma with cast nephropathy

E. Villous adenoma with diarrhoea

(1) A, B, C (2) A, C, E

(3) A, B, D (4) B, C, E

(5) Question not attempted

38. Pathology in STEC-HUS are all except
(1) Glomerular capillaries are the main site of damage
(2) Arteriolar thrombosis is common mainly at the hilum of glomeruli
(3) There is increased number of lymphocytes within the mesangium
(4) Cortical infarcts are seen in extensive thrombosis
(5) Question not attempted

39. Diagnostic criteria of hepatorenal syndrome in cirrhosis are all except
(1) Cirrhosis with ascites
(2) Serum creatinine > 210 micro mol/L
(3) Abscence of shock
(4) No current or recent treatment with nephrotoxic drugs
(5) Question not attempted

40. True regarding ANCA associated vasculitis :
(1) Cardiac disease is seen in 40% of Granulomatous polyangiitis involving the mitral valve
(2) 10% of Eosinophilic granulomatous polyangiitis show evidences of myocarditis
(3) A positive antinuclear antibody can produce a false positive perinuclear ANCA pattern
(4) Malignancy is present at the time of diagnosis in 20% of patients with ANCA vasculitis.
(5) Question not attempted

41. A 26-year-old woman was admitted to hospital feeling generally unwell with headache, blurred vision and a reduced urine output. She was normally fit and well. She had been referred to the dermatology service several months earlier with skin changes in her hands but she failed to attend the appointment. On examination, she had thickened skin from her hands to above her elbows with two peri-ungual ulcers on her right hand. Her BP was 164/96 mm Hg. Investigations: hemoglobin 9.2 g/dL, platelet count 74×10^9/L, serum urea 87 mg/dL, serum creatinine 3.28 mg/dL, urinalysis blood - protein+. What is the most beneficial treatment ?
(1) ACE inhibitor
(2) Glucocorticoids
(3) Hemodialysis
(4) Plasma exchange
(5) Question not attempted

42. A 26-year-old woman presented with a facial rash and arthralgia. Her BP was 116/66 mm Hg. Urinalysis showed blood 2+, protein 2+. Investigations: serum creatinine 88 μmol/L (60-110), 24-h urinary total protein 0.8 g, anti-double-stranded DNA antibodies (ELISA) 229 U/mL (<73). A diagnosis of systemic lupus erythematosus was made and she was started with Prednisolone 60 mg daily and azathioprine 2 mg/kg/day. On the same day, a renal biopsy was performed that showed class II lupus nephritis. What is the most appropriate further management ?
(1) Add cyclosporine
(2) Add intravenous methyl-prednisolone 1 g for 3 days
(3) No change
(4) Stop azathioprine, start cyclophosphamide
(5) Question not attempted

43. Which of the following statement is true regarding role of renal biopsy in patients with suspected plasma cell disorders with renal dysfunction ?

(1) Renal biopsy in such cases is associated with increased bleeding risk and should not be attempted.

(2) Presence of cast nephropathy is associated with more severe systemic disease and higher mortality than other form of histological findings.

(3) Renal biopsy should be attempted in case of non-selective proteinuria.

(4) Renal biopsy is not required since it will not alter the line of management.

(5) Question not attempted

44. According to revised consensus recommendations of the International Club of Ascites, diagnostic criteria for hepatorenal syndrome type 1 include all except :

(1) Cirrhosis with ascites.

(2) Serum creatinine of more than 1.5 mg/dL.

(3) No improvement in serum creatinine after at least 2 days of diuretic withdrawal and plasma volume expansion with albumin.

(4) Absence of structural kidney injury as indicated by proteinuria greater than 500 mg/day, microhematuria (>50 red blood cells per high-power field), and/or abnormal renal ultrasound findings.

(5) Question not attempted

45. Which of the following statements about urogenital TB is incorrect ?

(1) It is more common in children compared to adults.

(2) Most commonly presents as lower urinary tract symptoms.

(3) Both male and female infertility may be seen.

(4) Constitution symptoms such as fever, weight loss, night sweats occur in less than 20% patients.

(5) Question not attempted

46. What is the most common histological lesion observed in glomerulonephritis associated with plasmodium malariae ?

(1) MemGN (2) MesPGN

(3) IgAN (4) FSGS

(5) Question not attempted

47. Which of the following antitubercular drugs do not need dose modification in dialysis dependent ESRD patients ?

A. Rifampicin,

B. Capreomycin,

C. Moxifloxacin,

D. Ethionamide,

E. Isoniazid.

(1) Only A, C

(2) Only A, C, E

(3) Only A, C, D, E

(4) Only A, B, C

(5) Question not attempted

48. All are renal disease associated with HB V infections except
(1) Membranous nephropathy
(2) MCD
(3) MPGN (Type I and III)
(4) Polyarteritis Nodosa
(5) Question not attempted

49. All of the following are indications for performing Micturating cystourethrography in children with UTI, except
(1) Abnormal ultrasound scan
(2) Recurrent UTI
(3) During treatment of UTI if there is no improvement within the 1st 48 hours of antibiotic therapy
(4) UTI caused by non-E.coliuropathogens in children less than 2 years
(5) Question not attempted

50. Risk factors associated with UTIs in healthy men include, all except –
(1) Intercourse with an infected female partner
(2) Anal intercourse
(3) Circumcision
(4) Diabetes
(5) Question not attempted

51. Which two bacteria are the two most common culprits for occurrence of uncomplicated Urinary Tract Infection (UTI) in sexually active young women ?
(1) Escherichia coli, coagulase negative staphylococci
(2) Escherichia coli, klebsiella pneumonie
(3) Escherichia coli, proteus mirabilis
(4) Escherichia coli, enterococci
(5) Question not attempted

52. Recurrent UTI is common in postmenopausal females. Which of the following intervention is least likely to be effective in reducing frequency of recurrent infections ?
(1) Fluid intake of at least 3 litres per day
(2) Regular intake of cranberry juice
(3) Topical estrogen cream application
(4) Avoidance of spermicidal jelly
(5) Question not attempted

53. True regarding Emphysematous pyelonephritis :
(1) Diabetes is seen in 20% of patients with this clinical presentation
(2) Candida species can cause emphysematous pyelonephritis
(3) It usually occurs bilaterally in 40-50% patients
(4) Obstruction is the cause seen in 50% population
(5) Question not attempted

54. Which of the following is true about calcium oxalate stones ?
(1) Diet low in calcium is advised.
(2) Diet low in sodium is advised.
(3) Bisphosphonates are indicated.
(4) High dose vitamin C has some benefit.
(5) Question not attempted

55. A 10 year old boy presents with a history of multiple episodes of urolithiasis. Genetic testing reveals a mutation in the SLC7A9 gene. Which of the following is not included in the first line treatment of this patient ?
(1) Increase fluid intake
(2) Urinary alkalization
(3) D-penicillamine
(4) Low sodium diet
(5) Question not attempted

56. A 30-year-old woman has history of nephrolithiasis since the age of 18. She admits to multiple surgical procedures including shock wave lithotripsy and percutaneous nephrolithotomy. She denies any history of gout and primary hyperparathyroidism. Family history is positive for kidney stones in her father. Stone analysis showed pure calcium phosphate. Laboratory evaluation showed serum sodium 137 mEq/L, potassium 4.5 mEq/L, chloride 110 mEq/L, total CO_2 content 20 mEq/L, serum total calcium of 9.8 mg/dL, phosphorus 3.4 mg/dL, and PTH of 67 pg/ mL (normal 10–65). Twenty-four hour urine showed total volume 3.1 L, pH 6.90 (normal <6.02), calcium 300 mg/day (normal <200 mg/day), sodium 160 mEq/day (normal <200) oxalate 25 mg/day (normal <40 mg/day), citrate 20 mg/day (normal >320 mg/day), sulfate 30 mEq/day (normal <40 mmol/day). The most likely cause of kidney stones is
(1) Idiopathic hypercalcuria
(2) Chronic diarrhoea
(3) Proximal renal tubular acidosis
(4) Distal renal tubular acidosis
(5) Question not attempted

57. A 50-year-old man presents with right-sided ureteral colic and on subsequent investigation is found to have a 4-mm distal ureteral calculus with no hydronephrosis. He has a normal eGFR. In the absence of ongoing pain or sepsis, what is the most appropriate management option ?
(1) Acute endoscopic lasertripsy
(2) Decompression with ureteric stenting
(3) Trial of medical expulsive therapy
(4) Percutaneous nephrostomy
(5) Question not attempted

58. Typical crystals seen in urine defines underlying pathology
(1) Struvite crystals are pear and diamond shaped
(2) Cystine crystals are Hexagon shaped
(3) Indinavir crystals are coffin lid shaped
(4) Calcium oxalate crystals are needle shaped crystals
(5) Question not attempted

59. True about Loss of acute autoregulatory response in kidney :
(1) It has its impact on volume regulation
(2) Chronic stabilization of renal hemodynamics
(3) Increased susceptibility for hypertensive renal injury
(4) Suggests no need for aggressive management of hypertension
(5) Question not attempted

60. Major criteria in modified diagnostic criteria for Takayasu arteritis are all except :
(1) High ESR
(2) Carotid tenderness
(3) Distal brachiocephalic trunk lesion
(4) Right mid subclavian lesions
(5) Question not attempted

61. Malignant hypertension all are true except
(1) Previous history of hypertension is seen in 10% cases.
(2) Posterior reversible encephalopathy can be a presentation in these patients.
(3) It is the intra renal renin angiotensin system activation seen around the period of transition to a malignant phase of hypertension.
(4) Characteristic features on pathology is fibrinoid necrosis and endarteritis proliferans.
(5) Question not attempted

62. Which of the centrally acting antihypertensive drug in CKD patients has been associated with a positive result on the direct Coombs test in patients with and without hemolytic anemia ?
(1) Cloninidine
(2) Methyldopa
(3) Guanfacine
(4) Rilmenidine
(5) Question not attempted

63. The 2021 KDIGO hypertension management guidelines recommend that adults with high BP and CKD be treated with a target systolic blood pressure (SBP) of < 120 mm Hg, when tolerated, using standardized office BP measurement. In which of the following condition, reducing SBP to such stringent low levels was observed to be most beneficial ?
(1) Diabetic kidney disease
(2) ADPKD
(3) Post renal transplant hypertension
(4) Renal artery stenosis with renovascular hypertension
(5) Question not attempted

64. All of following are part of KDIGO 2021 guideline recommendations for standardized office BP measurement in preference to routine office BP measurement for the management of high BP in adults, except :
(1) Have the patient relax, sitting in a chair (feet on floor, back supported) for > 5 min
(2) The patient should avoid caffeine, exercise, and smoking for at least 30 min before measurement.
(3) Neither the patient nor the observer should talk during the rest period or during the measurement.
(4) Due to inaccuracy and significant inter-device variability, use of oscillometric devices is not recommended for measurement of office BP.
(5) Question not attempted

65. Tubulo glomerular feedback involves

(1) Vasoconstriction of afferent arteriole

(2) Vasodilatation of afferent arteriole

(3) Vasoconstriction of efferent arteriole

(4) Vasodilatation of efferent arteriole

(5) Question not attempted

66. In case of hypertensive emergency, what should be mean blood pressure reduction target during first hour of hospital visit, from initial baseline ?

(1) Less than 10%

(2) 20–25%

(3) 30–40%

(4) There is no specific target, mean BP should be brought to less than 110 mm Hg within minutes.

(5) Question not attempted

67. On reviewing a recently completed 24-h ambulatory BP recording on a 52-year-old man with hypertension and stage 2 CKD (eGFR 76 ml/min per 1.73 m^2), it is noted that the mean night time systolic BP (SBP) is about 5% less than the mean daytime SBP. Which one of the following is true regarding the relationship between diurnal BP variation assessed with ambulatory BP monitoring and CKD ?

(1) A nocturnal fall in mean SBP 10% occurs only in patients with elevated 24 h SBP levels.

(2) Non-dipping does not appear in patients with CKD until the GFR has fallen below approximately 30 ml/min per 1.73 m^2.

(3) Non-dipping has been shown to be associated with the presence of CKD in patients with type 1 but not T2DM.

(4) Patients with nocturnal fall in SBP of less than 10% have a more rapid decline in GFR compared with those who are.

(5) Question not attempted

68. Principle of various modalities of dialysis - True except :

(1) Intermittent hemodialysis works on principle of diffusion and ultrafiltration

(2) CRRT works as convective in hemodialysis mode while diffusion in hemofilteration mode

(3) SLED works on diffusion +/– ultrafiltration mode

(4) Peritoneal dialysis works on diffusion by peritoneal membrane

(5) Question not attempted

69. What percentage of tunneled catheters develop thrombosis within 1 year ?
(1) 10-20% (2) 30-50%
(3) 60-70% (4) >80%
(5) Question not attempted

70. First-line treatment for a thrombosed TCC with preserved flow is :
(1) Tissue plasminogen activator lock
(2) Catheter exchange
(3) Systemic anticoagulation
(4) Mechanical declotting
(5) Question not attempted

71. Causes of intradialytic hypotension
(1) Ultrafiltration rate >.25 ml/min/kg
(2) High dialysate sodium
(3) Autonomic neuropathy
(4) Increased sensitivity of renin-angiotensin and arginine vasopressin system
(5) Question not attempted

72. Which finding on lung ultrasound most strongly correlates with volume overload in patients on Hemodialysis ?
(1) Pleural effusion
(2) ≥3 B-lines per intercostal space
(3) Consolidation
(4) A-lines
(5) Question not attempted

73. According to AAMI standards, what is the maximum acceptable access recirculation percentage in a well-functioning hemodialysis circuit ?
(1) 5% (2) 10%
(3) 15% (4) 20%
(5) Question not attempted

74. Hemodialysis access
(1) Preoperative mapping of Arteriovenous fistula has limited values for those fistulas that would clot immediately
(2) The threshold for preoperative arterial diameters would be more than 4 mm for a successful AV fistula
(3) The progressive preoperative increase in vein diameter >3 mm of vein is associated with improved fistula maturation
(4) There is lack of benefit of surveillance and preemptive angioplasty on AV graft outcome
(5) Question not attempted

75. A patient's blood appears dark red in the arterial line, and the venous pressure alarm triggers. What is the next step ?
(1) Administer heparin bolus
(2) Check for needle dislodgement
(3) Clamp lines and return blood with saline
(4) Increase blood flow rate
(5) Question not attempted

76. Which action is **not** useful when the BP falls frequently during dialysis ?
(1) Decrease dialysate temperature
(2) Apply abdominal pressure
(3) Reduce the ultrafiltration rate
(4) Increase postdialysis target weight
(5) Question not attempted

77. Which is the least preferable timing for initial trial cannulation of a new AV fistula ?

(1) First dialysis day of the week
(2) Non-dialysis day of week
(3) Mid-dialysis day of week
(4) Last dialysis day of week
(5) Question not attempted

78. The International Organization for Standardization (ISO) has developed minimum standards for the purity of the water used to prepare dialysis solution and the purity of the final dialysis solution. What are current ISO recommendations for product water used to prepare dialysis solution ?

(1) Colony-forming units (CFU)/mL of bacteria <0.1 and <0.03 endotoxin units (EU)/mL of endotoxin.
(2) Colony-forming units (CFU)/mL of bacteria <100 and <0.25 endotoxin units (EU)/mL of endotoxin.
(3) Colony-forming units (CFU)/mL of bacteria <200 and <1.0 endotoxin units (EU)/mL of endotoxin.
(4) Colony-forming units (CFU)/mL of bacteria <500 and <5.0 endotoxin units (EU)/mL of endotoxin.
(5) Question not attempted

79. Access recirculation is not increased by which of the following parameter ?

(1) Inadvertently reversal of arterial and venous needle positions.
(2) Use of central venous catheter vs. AV fistula.
(3) Juxta-anastomosis stenosis of AV fistula.
(4) Use of 17G needle vs. 16G needle for hemodialysis.
(5) Question not attempted

80. Because of the multifaceted care required before starting HD, timely referral to a nephrologist is essential. Studies have documented multiple beneficial effects on patient outcome. Improvement in which of the following parameter is not associated with early referral to Nephrology team ?

(1) All cause hospitalization
(2) Higher use of dialysis catheters
(3) ESRD risk
(4) Anemia
(5) Question not attempted

81. Peginesatide is an EPO-mimetic peptide. It was shown to be an effective treatment for anti-EPO antibody-mediated pure RBC-Aplasia because of a lack of cross-reactivity with anti-EPO antibodies. Approximately a year after its introduction, peginesatide had to be withdrawn from the market. What was the main reason behind withdrawal of this molecule ?

(1) Increased rate of heart failure related hospitalization

(2) Episodes of severe hypersensitivity reaction

(3) Increased risk of lymphoma

(4) Increased incidence of sudden cardiac death

(5) Question not attempted

82. During CRRT process, to avoid hemo-concentration and filter clotting, filtration fraction should be kept below-

(1) 10% (2) 25%

(3) 40% (4) 50%

(5) Question not attempted

83. 35-year-old male diagnose case of anti GBM disease need to start on Therapeutic plasma exchange. His weight is 70 kg, HCT is 0.45, and Blood volume is 70 ml/kg. What will be his calculated plasma volume ?

(1) 2650 ml (2) 2800 ml

(3) 2950 ml (4) 3100 ml

(5) Question not attempted

84. True statement regarding Nutritional consideration for CAPD patients :

(1) The prevalence rates of Protein energy malnutrition ranges from 18% to 56% when on CAPD.

(2) A daily intake of 3 gm of good protein intake per kg of body weight is often recommended.

(3) The risk of hyperkalemia is more common in patients on Continuous Ambulatory Peritoneal Dialysis (CAPD).

(4) Energy requirement of 40 K cal/kg/day is recommended in CAPD.

(5) Question not attempted

85. A patient has a 4 hour D/P Creatinine of 0.88 and D/D0 glucose of 0.35. Which of the following best describes the anticipated clinical findings using 1.5% dextrose dialysate and CAPD ?

(1) Good solute clearance and good ultrafiltration.

(2) Poor solute clearance and good ultrafiltration.

(3) Poor solute clearance and poor ultrafiltration.

(4) Good solute clearance and poor ultrafiltration

(5) Question not attempted

86. Use of peritoneal Dialysis with help of cycler has advantages in intensive care unit settings because of all except
(1) Fewer connection reducing the risk of peritoneal infections
(2) Increase in work load
(3) It allows tidal regimens to optimize flow characteristics
(4) During AKI the transport characteristics are usually fast transport status, so short dwells can be possible with the cycler
(5) Question not attempted

87. After catheter insertion, PET can be done earliest at
(1) 1 week (2) 1 month
(3) 1 year (4) 3 years
(5) Question not attempted

88. Which one of the following is the most common buffer in the Peritoneal Dialysis solutions ?
(1) Bicarbonate (2) Lactate
(3) Phosphate (4) Acetate
(5) Question not attempted

89. Which of the following statements about a peritoneal dialysis catheter is true ?
(1) Fluid should take under 20 min to drain out.
(2) The tip should be located in the centre of the abdomen.
(3) Fluid should be slightly cloudy on draining out.
(4) Dried exudate ('crusting') at the exit site should be treated with antibiotics.
(5) Question not attempted

90. What is most common dwell volume in pediatric ESRD population during CAPD procedure ?
(1) 10–20 ml/kg
(2) 20–30 ml/kg
(3) 30–40 ml/kg
(4) 40–50 ml/kg
(5) Question not attempted

91. Which is incorrect regarding CAPD peritonitis ?
(1) Gram stain will be positive in approx. 10-40% of culture positive bags.
(2) Staph aureus is the most common organism isolated.
(3) Antibiotics are not needed parentally usually.
(4) Cell count in bags must be > 100 leucocytes with > 50% neutrophils.
(5) Question not attempted

92. All the syndromes are associated with cystic kidneys except
(1) Bartter syndrome
(2) Barder Biedl syndrome
(3) Brachio-oro-renal syndrome
(4) Meckel-Gruber syndrome
(5) Question not attempted

93. Which of the following is not a matching pair for extrarenal manifestations of nephronopthisis ?
(1) Senior-Loken syndrome- Taporetinal degeneration
(2) Cogan syndrome- Oculomotor apraxia
(3) Joubert syndrome- Cerebellar vermis aplasia
(4) Leber amaurosis - Retinitis pigmentosa
(5) Question not attempted

94. All are developmental renal cystic disease in adults except
(1) Pyelo calyceal cyst
(2) Von Hippel Lindau disease
(3) Medullary sponge kidney
(4) Multilocular cystic nephroma
(5) Question not attempted

95. A 38-year-old man was referred for evaluation of renal impairment. He had suffered with gout for the past 10 years. His maternal grandfather had died of kidney failure and his mother started dialysis when she was 56 years old. Examination was unremarkable. His BP was 143/82 mm Hg.
Investigations: serum K 2.7 mmol/L (3.5–4.9), serum creatinine 140 μmol/L (60-110), eGFR 52 mL/min, serum urate 0.60 mmol/L (0.23–0.46), urinalysis blood trace protein 2+ urinary 46 mg/mmol (<15) protein: creatinine ratio. Renal ultrasound scan normal sized kidneys with increased echogenicity and a single 2 cm cyst in the right kidney. MRI abdomen multiple small cysts ranging from 3 mm to 2 cm in diameter in the corticomedullary junction. What is the most likely diagnosis ?
(1) Autosomal recessive polycystic kidney disease
(2) Medullary cystic kidney disease
(3) Nephronopthisis
(4) Tuberous sclerosis
(5) Question not attempted

96. Which of the following statements about hearing loss in Alport's syndrome is true ?
(1) Alport's syndrome may be picked up by neonatal hearing screening.
(2) In males with Alport's syndrome, hearing loss is usually undetectable by Audiometry until adulthood.
(3) Hearing loss in Alport's syndrome initially targets high frequencies above the range of conversational speech.
(4) The hearing loss of Alport's syndrome is conductive in nature.
(5) Question not attempted

97. Which of the following ocular abnormalities have been not described in patients with Alport's syndrome ?
(1) Corneal endothelial vesicles
(2) Maculopathy
(3) Anterior lenticonus
(4) Hard exudates
(5) Question not attempted

98. Cystinuria is associated with which amino acids in the urine ?
(1) Arginine, lysine, ornithine
(2) Arginine, lysine, histidine
(3) Lysine, ornithine, histidine
(4) Ornithine, glycine, alanine
(5) Question not attempted

99. A 3-year-old boy with an intellectual disability, proximal renal tubular dysfunction, history of congenital cataracts, hypotonia, seizures, and difficulty feeding is found to have a characteristic facial appearance, including bitemporal narrowing, epicanthal folds, and a small jaw on examination. What underlying genetic defect is associated with this patient's presentation ?

(1) Deletion of the OCRL1 gene

(2) Mutation in the CLCN5 gene

(3) Mutation in the ATP6AP2 gene

(4) Mutation in the NPHS1 gene

(5) Question not attempted

100. True statement regarding Post transplant recurrence of Lupus nephritis :

(1) Histological recurrence of lupus nephritis is common with around half of the patients showing biopsy evidence of lupus nephritis

(2) Lesions are usually severe in post-transplant period with crescent formation

(3) Recurrence is always accompanied with systemic features of lupus

(4) Graft loss is very common

(5) Question not attempted

101. Which of the following statements regarding outcomes of renal transplantations is false ?

(1) Kidney transplantation provides superior survival compared with dialysis and the overall risk of death in transplant recipients is similar to the general population.

(2) Patient survival is defined as the overall survival of the transplanted person measured from the time of transplantation to the time of death.

(3) Death with a functioning graft is one of the major causes of graft loss after kidney transplantation.

(4) Graft survival is the length of time a transplanted kidney remains functional in the absence of irreversible graft failure, meaning the requirement for re transplantation or long-term dialysis therapy.

(5) Question not attempted

102. True statement regarding Recurrence of Hemolytic uremic syndrome in post transplant period :

(1) The incidence is very common with all types of HUS

(2) Atypical HUS recurs in approximately 20%

(3) Recurrence typically happens late in post transplant period

(4) Complement mutation can also lead to de novo thrombotic microangiopathy

(5) Question not attempted

103. True statement regarding Preemptive transplantation among pediatric population

(1) It occurs in 50% of pediatric undergoing renal transplant.

(2) It results in increased risk of infection and cardiovascular morbidity and mortality.

(3) Pre-emptive transplantation is considered when glomerular filtration rate is <10-15 ml/min/1.72 m^2.

(4) The rate of preemptive transplantation is maximum among age group 2-5 with frequency of 35%.

(5) Question not attempted

104. True statement regarding BK Virus nephropathy :

(1) Patients who develop BK viremia will all progress to nephropathy.

(2) Over immunosuppression is not a risk for increased incidence.

(3) Incidence is highest within first year transplant.

(4) It occurs in 40% within first 2 years and 10% within first 3 months from transplant.

(5) Question not attempted

105. Which of the following pre transplant malignancies has the minimum tumor free waiting period ?

(1) Basal Cell Carcinoma

(2) High Risk Skin Squamous Cell Carcinoma

(3) Lymphoma

(4) Renal Cell Carcinoma

(5) Question not attempted

106. The use of trimethoprim-sulfamethoxazole after renal transplant to prevent Pneumocystis had additional advantage of preventing all other bacterial infections except –

(1) Listeria (2) Nocardia

(3) Salmonella (4) Streptococcus

(5) Question not attempted

107. Interventions for antibody mediated rejections are centered on the following concepts except

(1) Circulating antibody can be removed by plasmapheresis and immunoadsorption

(2) Terminal complement activation can be inhibited with use of cyclophosphamide

(3) Plasma cell depletion may be achieved with proteosome inhibitor such as bortezomib

(4) T cell suppression can be achieved with calcineurin inhibitors, along with mycophenolate and steroids

(5) Question not attempted

108. Which of the following statements regarding Donor derived cell free DNA measurement is false ?

(1) The technique utilizes the presence of SNPs(Single Nucleotide Polymorphisms) in the human genome that commonly vary between individuals

(2) The test can distinguish donor-form recipient cell-free DNA without a donor blood sample

(3) The test can be reliably used in patients with prior kidney transplants or other solid organ transplants

(4) A donor-derived cell-free DNA level in excess of 1% likely reflects underlying graft injury

(5) Question not attempted

109. Corticosteroid withdrawal protocol in renal transplant

(1) Early steroid withdrawal is taper corticosteroids at the time of transplant or before 14 days post transplantation

(2) The benefit of complete corticosteroid withdrawal is better than protocols with early corticosteroid withdrawal

(3) There are higher adverse effects in early corticosteroid withdrawal group

(4) Late steroid withdrawal is associated with far better outcomes as compared to early withdrawal in terms of rejection episodes

(5) Question not attempted

110. Adverse effects of Calcineurin inhibitors in renal transplant population are all except

(1) Post transplant diabetes mellitus

(2) Thrombotic microangiopathy

(3) Hypokalemia

(4) Renal tubular acidosis

(5) Question not attempted

111. Causes of early graft dysfunction are all except

(1) Recurrence of FSGS

(2) Acute antibody mediated rejection

(3) Lymphocele

(4) Stripped fibrosis due to cyclosporine toxicity

(5) Question not attempted

112. Which of the following statements regarding use of mTOR inhibitors in renal transplant recipients is false ?

(1) Pancytopenia and hypertriglyceridemia are common dose dependent side effects of sirolimus

(2) Sirolimus can cause delayed recovery from acute tubular necrosis, wound dehiscence and formation of lymphoceles

(3) Sirolimus may be linked to podocyte injury and focal segmental glomerulosclerosis

(4) Sirolimus causes irreversible proteinuria in renal transplant recipients

(5) Question not attempted

113. True statement regarding Graft loss due to recurrence –

(1) The risk of recurrence is estimated to be 30% due to primary glomerular disease

(2) FSGS present with risk of 80% occurring after 2 year of transplant

(3) Atypical HUS recurrence is >50%

(4) The risk with MCP mutation is around 80% among the atypical HUS

(5) Question not attempted

114. Which of the following statements concerning transplant immunology is false ?

(1) The MHC which encodes HLAs are the most polymorphic genes in humans and are located on short arm of chromosome 6

(2) The MHC genes are inherited in a Mendelian codominant fashion and are divided into 3 regions called Class I, II and III

(3) MHC I and MHC II systems are designed to sample intracellular and extracellular proteins respectively

(4) MHC antigens are responsible for the need for immunosuppression after donation between HLA matched but non identical twins

(5) Question not attempted

115. In transplant renal biopsy, isometric vacuolization of proximal tubule cells may be seen in all, except-

(1) Acute CNI toxicity

(2) Post IVIg administration

(3) Radio contrast media administration

(4) BK virus nephropathy

(5) Question not attempted

116. Which of the following antigen is the most important barrier for pig-to-human kidney transplantation ? Development of genetically knockout pig models of this particular antigen is main reason behind recent success of porcine kidney xeno-transplantation.

(1) galactose-α1, 3-galactose (α-Gal)

(2) N-acetylneuraminic acid (Neu5Gc)

(3) Cytidine monophosphate-Nacetylneuraminic acid hydroxylase (CMAH)

(4) β4Ga1NT2 glycosyltransferase

(5) Question not attempted

117. The most common malignancy occurring after kidney transplantation is :

(1) Non-melanoma skin cancer

(2) Kaposi's sarcoma

(3) Lymphoma

(4) Breast cancer

(5) Question not attempted

118. Which of the following is/are true regarding urologic complications after renal transplantation ?

(1) Urologic complications are less common than vascular complications.

(2) Urologic complications invariably present early.

(3) Reexploration and surgical reconstruction are always required for urine leaks.

(4) Transplant ureteral stenosis is associated with BK polyoma virus infection.

(5) Question not attempted

119. Which of the following advice is unlikely to be beneficial when counselling a female transplant patient with regards to conception and pregnancy ?
(1) It would be best to wait at least 1 year after live donor transplantation to avoid complications arising from immunotherapy and rejection.
(2) The renal allograft should be functioning well, with a stable serum creatinine level <133 micromol/L and urinary protein excretion <500 mg/day
(3) Kidney transplant recipients who wish to conceive should change from MMF (mycophenolate mofetil) to Azathioprine, if there are no contraindications to the switch.
(4) MMF should be discontinued at least two weeks prior to attempted conception.
(5) Question not attempted

120. Which of the following statements is not true with regards to pregnancy in renal transplant patients ?
(1) Sirolimus is contraindicated in pregnancy as animal studies have demonstrated embryo toxicity and fetotoxicity with increased mortality, reduced foetal weights, and delayed ossification.
(2) During pregnancy, the hepatic cytochrome P450 enzymes may be inhibited, which can lead to decreased serum levels of tacrolimus.
(3) Severe preeclampsia and thrombotic thrombocytopenic purpura-haemolytic uremic syndrome (TTP-HUS) (due to pregnancy) may be difficult to distinguish in the pregnant transplant patient, particularly since they both present with haemolysis and thrombocytopenia.
(4) Sirolimus may cause impaired spermatogenesis and reduce male fertility.
(5) Question not attempted

121. Which of the following factors is most strongly associated with post transplant anaemia ?
(1) Use of mTOR inhibitors
(2) Impaired allograft function
(3) Use of ACEi or ARBs
(4) Number of acute rejections
(5) Question not attempted

122. In renal transplantation, the risk of recurrence in the allograft is lowest for which of the following renal diseases ?
(1) Oxalosis
(2) FSGS (Focal Segmental Glomerulosclerosis)
(3) Lupus nephritis
(4) MPGN Type 1 (Membranoproliferative Glomerulonephritis Type 1)
(5) Question not attempted

123. Hyperlipidemia is not associated with which of the following drug in renal allograft recipients ?
(1) Mycophenolate mofetil
(2) Sirolimus
(3) Prednisolone
(4) Cyclosporine
(5) Question not attempted

124. On December 23, 1954, Joseph Edward Murray created history by performing the world's first successful renal transplant between the identical twins. He originally belonged to which medical streamline ?
(1) Urologist
(2) Plastic surgeon
(3) Nephrologist
(4) Immunobiologist
(5) Question not attempted

125. Which modality is best to assess GFR in the setting of Renal dysfunction ?

(1) Tc99-Di Mercapto Succinic Acid

(2) Tc99-Diethylene Triamine Penta Acetic acid

(3) Tc99-Mercaptoacetyly Triglycine

(4) Tc99-Diethylene Tetraamine Penta Acetic acid

(5) Question not attempted

126. Waxy casts are :

(1) Specific for acute glomerulo-nephritis

(2) Practically never found in the nephrotic syndrome

(3) Practically never found in normal urine

(4) Frequently seen in patients with cystitis

(5) Question not attempted

127. Polyuria :

(1) The total volume of urine is more than 4 litres

(2) Primary or congenital diabetes insipidus manifests late in life

(3) The water deprivation test can help differentiate solute diuresis from those due to drugs.

(4) The cause of central diabetes insipidus could be a problem at the level of posterior pituitary resulting in failure of anti-diuresis.

(5) Question not attempted

128. Factor not affecting Serum Cystatin measurement -

(1) Age (2) Gender

(3) Obesity (4) Race

(5) Question not attempted

129. Which of the following one is not a physiological action of Endothelin-1 on kidneys ?

(1) Decreased GFR

(2) Reduced renal blood flow

(3) Enhanced sodium reabsorption

(4) Natriuresis

(5) Question not attempted

130. Drug of choice for Pseudo-Hypoaldosteronism Type 2 :

(1) Furosemide

(2) Thiazide

(3) Spironolactone

(4) Amiloride

(5) Question not attempted

131. Which one of the following statements regarding renal function is correct ?

(1) The daily solute excretion will lie between 75 and 300 mosmol.

(2) The permeability of the proximal nephron to water increases in the presence of vasopressin.

(3) The rate of ammonium excretion in urine is inversely related to the rate of urinary hydrogen ion excretion.

(4) A ten minute period of hyperventilation will normally be expected to lead to an increased rate of bicarbonate excretion in urine.

(5) Question not attempted

132. Which of the following do not cause Nephrogenic Diabetes Insipidus via Defect in Medullary Interstitial Tonicity ?

(1) Hypokalemia

(2) Hypercalcemia

(3) Lithium

(4) Sickle cell anemia

(5) Question not attempted

133. Why is hypomagnesemia associated with hypocalcemia ?

(1) Hypomagnesemia causes a shift of calcium into bone.

(2) Hypomagnesemia inhibits the secretion and action of parathyroid hormone.

(3) Hypomagnesemia causes renal calcium wasting.

(4) Hypomagnesemia impairs the peripheral actions of vitamin D.

(5) Question not attempted

134. True statement regarding Renal calcium handling is :

(1) Everyday roughly 15 gm of Ca^{2+} is filtered at the glomerulus of which 10% is excreted into urine.

(2) About 40% of reabsorption is active in the proximal tubule.

(3) Approximately 25% of Ca^{2+} filtered at the glomerulus is reabsorbed in Henle's loop.

(4) Permeability for Ca^{2+} is very high in the descending and ascending limbs of loop of Henle.

(5) Question not attempted

135. Which of the following fact is not true for Leukocyte Cell-derived Chemotaxin-2 Amyloidosis (ALECT2) ?

(1) LECT2 in circulation is mainly produced in hepatocytes.

(2) Renal involvement in ALECT2 is characterized by diffuse cortical interstitial involvement, with variable (occasionally absent altogether) involvement of glomeruli and vessels, whereas the medulla is spared or only minimally involved.

(3) Congestive heart failure due to myocardial involvement is the most common cause of mortality in ALECT2, with a median survival time of 12-18 months.

(4) The majority of patients have a slow progressive CKD, but about a third progress to ESRD.

(5) Question not attempted

136. True statement regarding Diabetic Nephropathy :

(1) Microalbuminuria progresses towards clinical albuminuria in approximately 25 years of disease without intervention.

(2) The average day to day variation of prazosinual is with a coefficient of variation of 60-70%.

(3) Immunity plays an important role in development of diabetic nephropathy.

(4) Risk factor which are non modifiable for diabetic nephropathy is female sex.

(5) Question not attempted

137. All are false regarding C_3 glomerulonephritis except :

(1) It accounts for 40% of proliferative GN occurring in young adulthood.

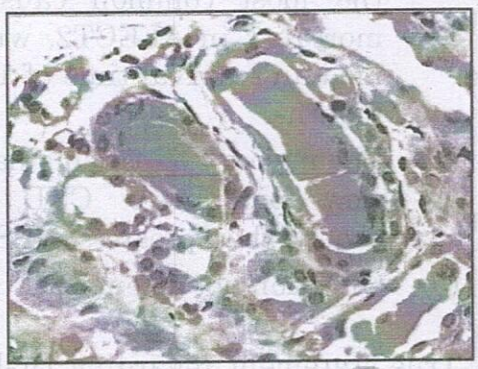
(2) It is believed that most cases would have been classified in MPGN type 3 from the previous classification.

(3) CFHR Gene mutation is closely associated with familial variety of C_3 GN.

(4) Recurrence in post transplant is less.

(5) Question not attempted

138. Which of the following statements regarding the biopsy finding is most accurate ?



(1) Primarily caused by the overproduction of lambda light chains, with kappa light chains rarely involved.

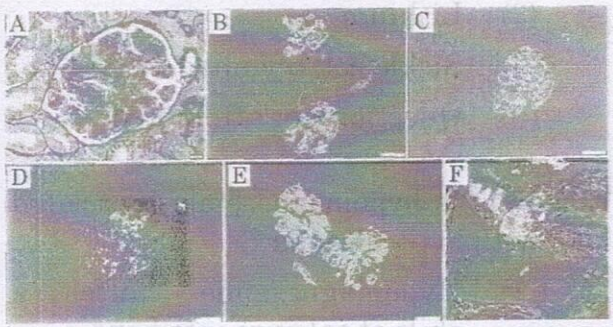
(2) The characteristic "fractured" appearance of casts on renal biopsy is due to the deposition of calcium phosphate crystals within the tubules.

(3) Tamm-Horsfall protein plays a critical role in the pathogenesis by binding to free light chains which is further increased by urinary alkalization.

(4) Usually associated with giant cell reaction.

(5) Question not attempted

139. Kidney biopsy of a 51 year gentleman is shown below. Identify the possible diagnosis from the biopsy and select correct statement from below :



Granular mesangial and peripheral capillary wall deposits are noted that stain brightly with (B) immunoglobulin G (IgG) and (C) κ but (D) not λ. (F) Ultrastructural studies show granular electron-dense deposits in the mesangium and peripheral capillary walls. The deposits do not have substructure.

(1) A clone can be detected in >50% of cases.

(2) IgG3 kappa is the predominant subtype.

(3) Carries a very good prognosis post renal transplant since the recurrence rate is low.

(4) EM shows organized deposits in subendothelium only.

(5) Question not attempted

140. False statement regarding Obinutuzumab in REGENCY trial is :

(1) It is a type II anti-CD20 mAbs which induce stronger direct B-cell cytotoxicity and enhanced phagocytosis by ADCC leading to more profound and sustained depletion.

(2) The trial demonstrated higher renal response rates with Obinutuzumab added to standard therapy versus placebo.

(3) Only MMF + steroid was used as standard therapy with Obinutuzumab as well as in the placebo group.

(4) There was no difference between the two groups in terms of severe adverse events.

(5) Question not attempted

141. True statement regarding complement activation in Post Strepto coccal Glomerulonephritis (PSGN) :

(1) Serum C_4 levels are more frequently and more intensely suppressed than C_3.

(2) There is activation of alternate complement pathway in PSGN.

(3) 15-30% patients show evidence of reduction of C_1 and C_4 complement components.

(4) Lecthin pathway is never activated in PSGN.

(5) Question not attempted

142. True statement regarding Podocytes in glomerular pathology :

(1) Roughly 1500 podocytes are seen per glomerulus.

(2) Podocytes are fixed to the cell bodies of the glomerular capillaries.

(3) Podocytes are capable of replicating.

(4) Podocytes are continually excreted as viable cells in urine which increases in glomerular disease.

(5) Question not attempted

143. Anti glomerular basement membrane disease all are correct except :

(1) Anti GBM disease may be provoked by small vessel vasculitis affecting kidney by lithotripsy.

(2) Linear staining of immunoglobulin along glomerular capillary wall is indicative of anti GBM glomerulonephritis.

(3) Glomerular lesions tend to be more in synchrony compared to ANCA glomerulonephritis.

(4) Lung disease shows a good correlation with antibody titre.

(5) Question not attempted

144. Commonly accepted markers of worse prognosis for patients with IgA Nephropathy is :

(1) Female

(2) History of macroscopic hematuria

(3) Persistant Proteinuria > 500 mg/day

(4) IgG in mesangial deposits on Immunofluorescence

(5) Question not attempted

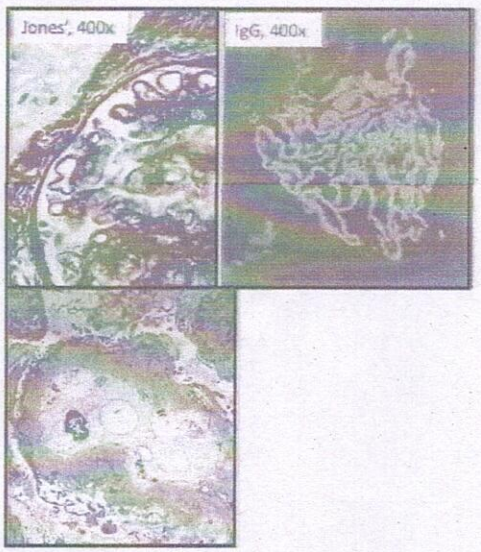
145. GFR loss in typical IgAN is :
(1) 6–9 ML per minute per year
(2) 1–2 ML per minute per year
(3) 20–25 ML per minute per year
(4) 10–15 ML per minute per year
(5) Question not attempted

146. A 45-year-old nonsmoking executive collapses at a meeting and in the emergency room is found to have a serum creatinine of 1800 μmol/L, Hb 90 g/L, K 7.2 mmol/L, BP 165/92, and normal-sized unobstructed kidneys on ultrasound scan. After appropriate acute dialysis and BP control, a renal biopsy sample is taken, which shows severe crescentic glomerulonephritis affecting 32/32 sampled glomeruli. On silver staining, breaks could be seen in multiple capillary loops and in the Bowman capsule of most glomeruli. Linear deposition of IgG along the residual GBM and strong positivity for serum anti-GBM antibodies establishes a diagnosis of Goodpasture disease. ANCA is negative, and there is no evidence of lung hemorrhage. What treatment would you recommend for this patient with Goodpasture disease ?
(1) Plasma exchange, CYP, and oral prednisolone for at least 3 months
(2) Plasma exchange, CYP, and oral prednisolone with plan for early
(3) Close monitoring with a goal of avoiding immunosuppression
(4) CYP, and oral prednisolone for at least 3 months
(5) Question not attempted

147. A 24-year-old African American female has been treated for the last 6 months with MMF (2 to 3 g/day) and a tapering dose of corticosteroids for active focal proliferative lupus nephritis (ISN class IIIA). Her initial proteinuria decreased from 3.4 g daily to 1.2 g daily, urine sediment is inactive, and serum creatinine decreased from 1.6 to 0.9 mg/dL over the 6 months of therapy while anti-dsDNA titre declined and serum complement values returned to normal. What is the optimal therapy for this patient at this time ?
(1) Continue the current dose of MMF for an additional 6 months and then taper slowly over 1 year.
(2) Given the persistent proteinuria, change to intravenous cyclophosphamide at 500 mg every 2 weeks for 6 doses and then administer azathioprine at 2 mg/kg daily.
(3) Reduce the MMF to 1000 mg bid and plan to continue for 3 years unless otherwise indicated.
(4) Change to azathioprine at 2 mg/kg/day, and plan to continue for 4 years unless otherwise indicated.
(5) Question not attempted

148. All of the following features favour high risk of membranous nephropathy except :
(1) Decrease in eGFR
(2) Urine protein 4-8 g/day
(3) PLA2R antibody > 150 RU/ml
(4) Serum albumin < 2.5 g/day
(5) Question not attempted

149. A 27-year-old woman presented to her primary care for evaluation of lower extremity edema. She has a history of Hodgkin lymphoma for which she underwent stem cell transplant 3 years prior complicated by chronic graft-versus-host disease of the GI tract and one relapse 8 months ago. Serum creatinine level is 1.64 mg/dL (baseline level, 0.9 mg/dL) with proteinuria (UPC 11 mg/mg). Serology is negative for anti-phospholipase A2 receptor (PLA2R) antibodies. A renal biopsy was performed.



What antigen has recently been found in patients who developed the above finding after allogeneic hematopoietic stem cell transplant ?

(1) PLA2R

(2) Thrombospondin type I domain-containing 7A (THSD7A)

(3) Exostosin 1/exostosin 2 (Ext 1 and 2)

(4) Protocadherin FAT1 (FAT1)

(5) Question not attempted

150. A 62-year-old man was found to have proteinuria on routine testing. He had a 3-year history of exertional angina but his symptoms had been well controlled since he had been taking atenolol 50 mg daily and amlodipine 10 mg daily. On examination, his BP was 129/76 mm Hg, his jugular venous pressure was not raised, and he had mild ankle edema, but his chest was clear. Urinalysis showed blood 1+, protein 4+. Investigations: serum creatinine 92 μmol/L (60-110), serum albumin 37 g/L (37–49), urinary protein : creatinine ratio 3.4 gm/gm. Renal biopsy histology membranous nephropathy. What is the most appropriate treatment ?

(1) Cyclosporine

(2) Cyclophosphamide and high-dose corticosteroids during alternate months for 6 months

(3) Rituximab

(4) Ramipril

(5) Question not attempted

रफ कार्य के लिए स्थान / SPACE FOR ROUGH WORK