



Cert Nephrology(SA) Paed

THE COLLEGES OF MEDICINE OF SOUTH AFRICA

Incorporated Association not for gain
Reg No 1955/000003/08

Examination for the Subspecialty Certificate in Nephrology of the
College of Paediatricians of South Africa

26 July 2018

Paper 1

(3 hours)

All questions are to be answered. Each question to be answered in a separate book (or books if more than one is required for the one answer)

- 1 Discuss the management of a steroid resistant nephrotic syndrome in a 6-year-old Black African child under following headings
 - a) Definition.
 - b) Management and complications of treatment.
 - c) Bone Disease.
 - d) Long term outlook and management. [25]

- 2 A 6-month-old male infant is admitted after he had a spell during which time he became deeply cyanosed and bradycardic. Cardiac echo revealed findings in keeping with Tetralogy of Fallot. He is failing to thrive (weight 3.9kg and length 61cm – Z scores -3 and -2 to -3 respectively). He is clubbed and cyanosed. He appears dehydrated and feeding poorly. No diarrhoea. He has been experiencing several life threatening episodes of spelling requiring acute management. The cardiologist started a ½ Darrow's with 5% dextrose as intravenous infusion and prescribed propranolol. He is referred to the paediatric nephrologist when he develops unexplained macroscopic haematuria following another near fatal episode of spelling. Other supportive history: His mother is 42-years-old, P4G4, HIV negative. He was a term baby, birth weight was 3kg. Two sibs, both boys died in the neonatal period of unknown reasons. The mother's only comment was that they had very dark skins

Results of special investigations

Arterial Blood gas	
pH	7.20
pCO ₂	30.1mmHg
pO ₂	36.4mmHg
Base excess	-15mmol/l
Standard HCO ₃	13mmol/l
Lactate	3.2mmol/l

Full blood count	
Haemoglobin	22g/dl
Haematocrit	0.72
MCV	66pg
RBC	10.2 x 10 ¹² /l
White blood cell count	18.9 x 10 ⁹ /l
Platelets	23 x 10 ⁹ /l
INR	0.9

U & E & Cr		
Na	127mmol/L	135 - 145
K	8.7mmol/L	3.4 - 4.7
Cl	109mmol/L	98 - 107
HCO ₃	9mmol/L	23Meq/l
Urea	10mmol/L	1.8 - 5.5
Creatinine	75µmol/L	0.11 - 0.30

- a) What underlying conditions/associated should be excluded?
 b) List the risk factors and complications in this baby.
 c) What are the possible causes of the abnormal laboratory investigations and what other investigations are you going to do? Explain each problem.
 d) Describe the electrophysiological and clinical consequences of hyperkalemia.
 e) Briefly discuss the chronic treatment strategies of hyperkalaemia.
 f) List the conditions in which renin-angiotensin inhibitors are specifically indicated and where they are contra-indicated. [25]
- 3 a) List the investigations used by the tissue typing lab when working a patient up for renal transplant. (10)
 b) Describe how you would use these tests when deciding on the feasibility of transplant and the type of immunosuppression to use for the transplant. (15)
 [25]
- 4 Paediatric urolithiasis is relatively rare and is often missed. Discuss urolithiasis in children with respect to the following
 a) Clinical presentation. (10)
 b) Risk factors predisposing to urolithiasis in children. (10)
 c) Treatment of hypercalciuria. (5)
 [25]



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Paper 2

(3 hours)

All questions are to be answered. Each question to be answered in a separate book (or books if more than one is required for the one answer)

- 1 a) What are the specific indications for use of
 - i) DMSA radio isotope scan?
 - ii) MAG 3 renogram?
 - iii) MRI angiogram?
 - iv) Urodynamic study?
 - v) Micturating cystourethrogram (MCUG)?
 As diagnostic tools in the investigation of paediatric kidney disease. Explain why each of the tests is the preferred investigation for the purpose they are used for. [10]
 - 2 Briefly discuss the implications of human nephron number in health and disease with specific reference to small for gestational age and premature babies. [10]
 - 3 Make short notes on juvenile nephronophthisis, including the inheritance pattern, clinical features, imaging and histological findings. [10]
 - 4 What are the physiological factors that influence ultrafiltration in a child on peritoneal dialysis? [10]
 - 5 What are the guiding principles when developing a transplant allocation system and give examples of policies in your allocation system as examples of these principles? [10]
 - 6 a) What are the currently recommended parameters (KDOQI) which should be used for the nutritional assessment of a child with Chronic Kidney Disease (CKD)? (5)
 - b) What factors contribute to low nutritional intake in a child with End Stage Renal Failure (ESRF)? (5)
- [10]

- 7 a) What factors predispose a child to renal scarring secondary to urinary tract infection? (5)
b) What management steps would you put in place when treating a child with UTIs? (5)
[10]
- 8 What are the activity markers of active lupus nephritis and how does one classify lupus nephritis histologically? [10]
- 9 What are the indications for a renal biopsy in a patient presenting with a Cresenteric glomerulonephritis? [10]
- 10 What is the classification and what are the diagnostic criteria for haemolytic uraemic syndrome? [10]