



THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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

Examination for the Subspecialty Certificate in Endocrinology
and Metabolism of the College of Paediatricians of South Africa

22 August 2013

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 Cushing's syndrome and Cushing's disease under the following headings
 - a) Definition(s). (3)
 - b) Aetiology. (6)
 - c) Dynamic tests and their interpretation. (12)
 - d) Pitfalls in diagnosis. (4)[25]

- 2 A boy of 15 months has been diagnosed with diabetes mellitus by his general practitioner, with a point of care blood glucose of 27mmol/l, and a urine dipstick showing glucose 3+ and trace ketones. The doctor now refers the patient to you
 - a) Discuss your immediate management of this child. (12)
 - b) Describe the potential insulin regimens that could be used to treat this child. Discuss the benefits and potential negatives of each regimen, and propose which option you would suggest as the starting regimen in this case. (13)[25]

- 3 A 16-year-old girl with a past history of medulloblastoma diagnosed at 10-years of age is referred to the endocrine clinic for evaluation of short stature and delayed puberty. She received chemotherapy and craniospinal irradiation
 - a) Discuss the metabolic and endocrine problems that are likely to be present in this patient. (10)
 - b) Discuss your approach to the investigation and management of this patient. (10)
 - c) Discuss the potential associations and risks of growth hormone therapy in this patient. (5)[25]

- 4 A 15-year-old boy known with type 1 diabetes mellitus is admitted in diabetic ketoacidosis. He was admitted a month prior with the same symptoms in another hospital. He showed signs of hyperpigmentation. Electrolytes on admission are as follows

Sodium 126 mmol/L, Potassium 7.1 mmol/L, Chloride 100 mmol/L and CO₂ 18 mmol/L

- a) What is the most likely diagnosis? Explain your answer. (3)
 - b) Briefly discuss your acute management. (8)
 - c) Which investigations should be performed to
 - i) Confirm the diagnosis?
 - ii) Exclude other associated conditions? (4)
 - d) Primary testicular failure is rare in this condition. Does the same apply if this was a girl? (4)
 - e) Discuss the long term management of this patient. (6)
- [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 Discuss an approach to the investigation and management of an encephalopathic neonate with hyperammonaemia. [10]

Answer Question 2a) & 2b) in separate booklets

- 2 A 6-year-old child presents with polyuria post head injury from a motor vehicle accident
- a) Discuss the differential diagnosis and management of this child. (10)
 - b) Discuss the indications for, the performance of, and the interpretation of the water deprivation test. (10)
- [20]
- 3 Discuss the side effects of
- a) Hydrocortisone therapy in congenital adrenal hyperplasia.
 - b) Leuprolide acetate in precocious puberty.
 - c) Oestrogen therapy for pubertal induction in Turner Syndrome. [10]
- 4 A girl, 8-years-old, presents with general obesity. Height plots on a higher than genetic predicted centile
- a) Do you think that this patient needs special investigations? (2)
 - b) Give at least four important aspects in management and discuss these briefly (8)
- [10]
- 5 Discuss the genetics of
- a) Androgen insensitivity disorder.
 - b) 5-alpha-reductase deficiency.
 - c) Adrenal hypoplasia congenita. [10]
- 6 A 6-week-old baby presents with vomiting and irritability. Total serum calcium 3.0 mmol/l, Parathyroid hormone 6pmol/l (1.5-7.6), urinary calcium is persistently in the low normal range
- a) What is the most likely diagnosis? Explain your answer. (3)
 - b) Discuss any further investigations that you would perform to confirm the diagnosis. (5)
 - c) Briefly discuss the genetics of this condition. (2)
- [10]

- 7 Stipulate the criteria for a valid screening test and consider screening for neonatal hypothyroidism against these criteria. [10]
- 8 Discuss the diagnosis and management of central hypoadrenalism. [10]
- 9 Increasing numbers of otherwise healthy children now present to paediatricians because they are short. Whether idiopathic short stature should be treated with GH raises important ethical issues. Write short notes on this ethical debate. [10]
- 10 Discuss the neuroglycopenic and sympathomimetic symptomatology of hypoglycaemia. [10]
- 11 Write short notes on the role of Vitamin D in the pathogenesis and prevention of Diabetes. [10]