Cert Neonatology(SA)

THE COLLEGES OF MEDICINE OF SOUTH AFRICA

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

Subspecialty Examination for the Certificate of Neonatology of the College of Paediatricians of South Africa

1 March 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)

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1 The following scenario presents itself in the neonatal ward. A mother in Kangeroo Mother Care (KMC) with her baby (for the past week and sharing a cubicle with 6 other mother and baby pairs) reports coughing for > 2 weeks. A sputum from the laboratory comes back as gene Xpert positive for Mycobacterium tuberculosis. She was also newly diagnosed with HIV during this pregnancy (< 4 weeks ago) and is currently on combination antiretroviral therapy. This is the first time she is diagnosed with tuberculosis (TB). Discuss the following

a) TB work-up and treatment for this mother. (5)
b) Management of TB-exposure of her newborn and treatment approaches. (5)
c) Management of HIV-exposure of her newborn and treatment approach. (5)
d) Advice on feeding possibilities for this newborn. (5)
e) Infection, prevention and control practises on the ward for the other mothers and babies that shared a cubicle with this TB/HIV mother and baby. (5)

[25]

2 A 3-day-old neonate in NICU has a systolic murmur at the lower left sternal border. She is 28 weeks by gestation. A tentative diagnosis of a PDA is entertained

a) List the clinical features of a PDA. (5)
b) What is a wide pulse pressure? (2)
c) How do you calculate it? (2)
d) List the complications associated with a PDA. (3)
e) What are the echocardiographic findings of a PDA? (5)
f) What constitutes a haemodynamic PDA? (2)
g) When would you close a PDA surgically? (3)
h) What are the complications of surgical closure? (3)

[25]

3 You are working at a tertiary neonatal centre when you get a referral to accept a baby born at a level 1 facility. The male infant was born at 36-weeks' gestation and has a gastroschisis. The baby seems comfortable with no respiratory distress and good saturations breathing room air

a) Outline your advice to the practitioner at the level 1 unit regarding the initial steps of management. (5)
b) Explain the embryology of the lesion. (5)
c) Describe your initial management when the baby arrives at your tertiary institution. (5)
d) Briefly discuss the short and long-term complications that may develop in this patient. (5)
e) The parents would like to know the prognosis for this baby. Briefly discuss the factors known to be associated with outcomes in gastroschisis. (5)

[25]

4 The following scenario presents itself in the neonatal ward. A 5-day-old premature baby (that shares a cubicle with 6 other babies) and has an umbilical venous line in-situ is noticed to have pus coming from the umbilicus. The baby looks unwell on examination, develops apnoea and now has a capillary refill time of > 3 seconds. Recently, this neonatal ward has had an outbreak of Methicillin-resistant Staphylococcus aureus (MRSA) cases with the last case diagnosed a week ago

a) Discuss your immediate management of this patient, including the septic work-up and your choice of empiric antibiotic treatment. (10)

b) Discuss the infection prevention control measures that you would implement for this baby and the other babies in this cubicle. (5)

c) This MRSA septicaemia baby develops a cardiac murmur and a swollen right knee 72-hours into his treatment. Discuss your approach following these new complications and how it may impact on the management and treatment duration for this baby. (10)

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2 March 2018

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 the following
- a) Spontaneous intestinal perforations. (5)
- b) Controversies in management of non-vigorous meconium stained infants. (5)
- c) Magnesium sulphate as a neuroprotective agent. (5)
- d) Placental changes in HIE. (5)
- e) Neonatal abstinence syndrome – medical management. (5)

[25]

2 Discuss briefly the following
- a) The pharmacokinetics of fentanyl in neonates (5)
- b) Discuss the ethics around performing drug research in neonates, especially those born prematurely (5)
- c) Briefly discuss the management options for congenital chylothorax (10)
- d) Discuss the Combined APGAR test to assess neonates in the delivery room (5)

[25]

3 Vancomycin resistant Enterococci (VRE) are becoming more prevalent
- a) Discuss the mechanism of antibiotic resistance in this organism. (5)
- b) Discuss management and infection control measures when faced with a case of VRE. (5)

[10]

4 Write short notes on the following drugs under the headings: mechanism of action, indications and safety considerations
- a) Linezolid. (5)
- b) Lopinavir/ritonavir. (5)
- c) Valgancyclovir. (5)
- d) Dexamethazone. (5)

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5 You are considering a diagnosis of metabolic bone disease in a premature infant. Briefly discuss
- a) What is osteopenia of prematurity? (5)
- b) The clinical presentation and laboratory values. (5)
- c) Who are at risk for possible osteopenia of prematurity? (5)
- d) How does one screen for osteopenia of prematurity and comment on the appropriate treatment and follow-up (5)

6 You have a term baby with a vascular lesion that covers more than half of the face, including the left eye. Write short notes on the following

a) The epidemiology and pathophysiology of infantile hemangioma. (5)

b) The natural progression of this disease. (5)

c) Complications and management of the infantile hemangioma in this scenario. (5)

[15]