



Cert Pulmonology(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 Pulmonology of the College of Paediatricians of South Africa

Paper 1

26 July 2018

(3 hours)

All questions 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 bronchopulmonary dysplasia under these following headings
- a) Definition. (4)
 - b) Pathophysiology. (5)
 - c) Prevention and management. (8)
 - d) Complications and prognosis. (8)
- [25]
- 2 A 12-year-old child with difficult to treat asthma (brittle asthma) on inhaled budesonide 200ug bd and salbutamol 2 puffs prn, presents to the outpatient department with an acute exacerbation after having used 4 puffs of salbutamol at home. On examination: respiratory rate 32bpm, heart rate 100bpm, saturations 88% on room air and 90% on 2l NPO₂. The medical officer is concerned that the child has not responded after an hour of salbutamol and ipratropium bromide nebulisations and may require mechanical ventilation. An arterial blood gas after the nebulisations reads as follows: pH 7.31, PCO₂ 35mmHg (4.7kPa), PO₂ 72mmHg (9.6kPa), saturations 88%, Base excess -7.2 and HCO₃ 18.3
- a) What are the risk factors that you would enquire about to support a diagnosis of a severe asthma exacerbation? (3)
 - b) What are the clinical features that support the need for ICU care and what are the pathophysiological explanations for these changes? (5)
 - c) What measures would you undertake to prevent the need for intubation and what precautions would you take prior to actual intubation? (5)
 - d) Discuss the different modes of ventilation (invasive and non-invasive) that are available and how would you ventilate this patient. (5)
 - e) What therapeutic options would you consider while the child is on the ventilator? (5)
 - f) The child recovers and is ready for discharge from ICU. What advice would you give and what therapy would you prescribe for this child at this stage? (2)
- [25]

- 3 A 14-month-old girl with trisomy 21 is referred to you for evaluation and management of her respiratory symptoms. The problems presented to you are multiple and include chronic cough, recurrent pneumonia with wheeze, snoring and failure to thrive. In addition, she has an ASD and pulmonary hypertension (Mean pulmonary arterial pressure estimated at 68mmHg). Initial investigations reveal a microcytic anaemia (Hb 6.8 g/dl, MCV 68); arterial blood gas: pH 7.49, PaCO₂ 69mmHg (9.2kPa), HCO₃ 32; chest x-ray shows a cardiomegaly and diffuse lung disease
- a) List and discuss the differential diagnoses for all the above problems with possible pathophysiological explanations for the abnormal findings. (10)
 - b) Describe your approach to further investigating this child's problems. (10)
 - c) List important objectives for optimal management of this case. (5)
- [25]
- 4 Discuss pulmonary hypertension under the following headings
- a) List the classification and causes of pulmonary hypertension. (5)
 - b) Discuss how you would investigate a patient that presents with a suspected diagnosis of pulmonary hypertension. (10)
 - c) Discuss the treatment/management options for children with pulmonary hypertension. (10)
- [25]



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Paper 2

27 July 2018

(3 hours)

All questions 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 In the treatment of childhood empyema
- a) Briefly discuss the following treatment modalities
 - i) Fibrinolytics. (6)
 - ii) Surgical intervention. (4)
 - b) How would you decide which of the abovementioned treatment modalities to use in an individual case? [10]
- 2 Discuss the pulmonary complications of acyanotic congenital heart disease. [10]
- 3 List the types of interstitial lung disease (classification) in children less than two years of age and describe how you would investigate a suspected case. [10]
- 4 Discuss the method of collection, utility and safety aspects of induced sputum as a diagnostic tool. [10]
- 5 Write short notes on non-cystic fibrosis bronchiectasis in children under 5 years of age under the following headings
- a) Causes.
 - b) Diagnosis. [10]
- 6 Discuss the management of idiopathic pulmonary haemosiderosis. [10]
- 7 The World Health Organisation developed a global TB strategy to end tuberculosis by 2035
- a) List the targets. (1)
 - b) Discuss the challenges in the care of children with TB to improve control. (6)
 - c) List three areas where preventative strategies could be enhanced to meet this challenge. (3)
- [10]

- 8 Exposure to environmental air pollution is a major determinant of longitudinal respiratory health among children. List 5 different environmental air pollutant groups and methods for their measurement and discuss intervention measures that may reduce the burden of these environmental air pollutants. [10]
- 9 Domiciliary oxygen is being advocated for patients with respiratory dependency admitted to paediatric wards
- a) Which patients should be the primary beneficiaries of this intervention? (2)
 - b) List the different types of domiciliary oxygen that is currently available. (5)
 - c) List 6 principles that you would use in advocating or not advocating for this intervention. (3)
- [10]
- 10 Cough is a common presenting symptom in childhood. Not all coughs are related to respiratory illnesses
- a) Give the definition and 2 differential diagnoses for acute cough, acute persistent cough and chronic cough as it is related to respiratory diseases. (6)
 - b) List the differential diagnosis of non-respiratory cough. (4)
- [10]