



Cert Critical Care(SA) Emergency Med

## THE COLLEGES OF MEDICINE OF SOUTH AFRICA

Incorporated Association not for gain  
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Examination for the Subspecialty Certificate in Critical Care of the  
College of Emergency Medicine of South Africa

22 August 2013

Paper 1

(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 A 20-year-old male patient with respiratory distress related to an influenza infection is admitted to your ICU. The chest x-ray shows diffuse bilateral infiltrates and the lung volumes are slightly low. His SaO<sub>2</sub> on a 40% oxygen facemask at 8 litres/min are 84 – 86%. On blood gas analysis PaCO<sub>2</sub> and pH are normal. Discuss
- a) The potential role of humidified high flow nasal oxygen in this patient (provide some comment on the potential mechanisms of action of this intervention). (10)
  - b) Possible modes of non-invasive ventilatory support. In particular discuss what options are available; what interfaces to the patient are available, together with their pro's and con's. (20)
  - c) If this patient required endotracheal intubation discuss the injuries (including the anatomy and the pathophysiological process) that could be related to the endotracheal tube (both at the time of intubation and subsequently during ventilation), and what approaches can be taken to avoid those complications. (20)
- [50]
- 2 Discuss TUBERCULOSIS in the critically ill patient with regard to the following
- a) Review the pathologies associated with tuberculosis that may result in ICU/High Care admission.
  - b) Discuss the *definitive therapy* as well as other appropriate management modalities in such patients.

Where relevant, include in your answer any evidence-based data / specific studies from the literature. [50]

3 Debate the following statements

- a) Cardiac output monitoring in the critically ill is of no benefit. (30)
- b) Sedation to suppress respiratory distress during withdrawal of life support is tantamount to euthanasia. (20)  
[50]

4 A 45-year-old patient has an unexpected cardiac arrest during a visit to a hospital. He is resuscitated in the pharmacy dispensing area but is comatose after return of cardiac output.

- a) Briefly describe the rationale for therapeutic hypothermia, the goals and methods used to achieve these goals and the interventions necessary in the scenario above. Indicate how rewarming should take place. (12)
- b) Provide an answer describing the means of prognosticating outcome that includes, but is not limited to, clinical scoring. Support your answer with evidence for your statements where you can. Consider and discuss the impact of therapeutic hypothermia on the prognostication of outcome. (30)
- c) When should the use of EEG be advocated in the management of patients in this situation? (3)
- d) Describe the score that is most often quoted in the assessment of outcome of patients who are comatose following cardiac arrest and has the best evidence to support it. (5)  
[50]