



HONG KONG COLLEGE OF ANAESTHESIOLOGISTS
FINAL FELLOWSHIP EXAMINATION (INTENSIVE CARE)
LONG ANSWER PAPER

2 Questions

Monday 3rd August 2015 (1:00 pm - 3:00 pm)

NOTICE

- (A) Write your answers to the two questions in separate books.
- (B) Read the questions carefully, and in view of the time available, balance your answers to encompass points of great importance without going into needless detail.
- (C) Record your number on the cover of each book and hand in all books.

Question 1

You are the ICU consultant in charge and the following patient has just been admitted overnight.

A 75-year-old man with a history of chronic smoking (20 cigarettes per day for 30 years), who presents with a four (4) days' history of difficulty in walking and shortness of breath.

He complained of progressive weakness, which had started from his lower limbs and now progressed to his upper extremities. He also noticed to be increasingly breathless on exertion with hoarseness and easily choked on feeding.

He had no recent travel history and on further questioning he recalled episodes of watery diarrhoea five (5) days ago.

On Physical Examination:

Body temp: 37.5 °C

Blood pressure: 185/110 mm Hg

Heart rate: 105 beats/minute

Respiratory rate: 30 breath/minute

SpO₂ 99% on 15L/min of non-rebreathing mask

He is able to complete short sentences.

His limb powers are 3/5 in both upper and lower limbs.

No reflex can be elicited.

Both pain sensation and proprioception are equivocal.

Chest auscultation - bilateral lower zone crepitation with reduced breath sounds.

Abdomen - distended without localized tenderness or guarding but there is no bowel sound.

Chest X ray - bilateral lower zone volume loss with consolidative changes.

Abdominal X ray - moderately dilated bowels without fluid levels.

Arterial blood gas (ABG) with non-rebreathing mask 15L/min:

pH 7.26, PaCO₂: 55 mmHg (7.3 kPa); PaO₂: 154 mmHg (20.5 kPa), HCO₃:24, BE: -2

Both blood pressure and heart rate have been labile on the observation chart.

- A. What is your initial management plan for this patient? (3 marks)**
- B. The subsequent ABG revealed further CO₂ retention. What mode of ventilation would you consider? Give reasons to support your decision. (1 mark)**
- C. What are your differential diagnoses? (1 mark)**

Lumbar puncture (LP) and nerve conduction test (NCT) are performed.

LP: opening pressure ~ 19cm H₂O and the cerebral spinal fluid (CSF) is clear.

NCT: Sensory nerves appear normal. There is marked decrease in conduction velocity in motor nerves of bilateral upper limbs and lower limbs. Conduction blocks are evident. Marked decrease of amplitude in compound muscle action potential is noted. Prolonged latency is seen in F wave studies.

- D.**
 - i. What is the most likely diagnosis? What are the possible features in the CSF with this diagnosis? (1 mark)**
 - ii. Based on the NCT findings, what are the pathological changes? What is F wave and what is its use in this patient's case? (1 mark)**
- E.**
 - i. What is the possible mechanism underlying this neurological condition? (1 mark)**
 - ii. Write short notes on two (2) variants of this neurological disorder and their specific features? (1 mark)**
 - iii. List four (4) unfavourable prognostic factors in this patient? (1 mark)**

Question 2

A 75-year-old man with no “apparent” past medical history was admitted to your intensive care unit (ICU) with the diagnosis of severe community acquired pneumonia and septic shock 7 days ago. He was commenced on empirical ceftriaxone and clarithromycin.

The patient responded to the treatment with resolution of septic shock and improvement in organ function. The morphine and midazolam infusion was stopped in yesterday's afternoon ward round and the patient was placed on a pressure support (PS) mode with FiO₂ of 0.4, PS of 10 cmH₂O and PEEP of 5 cmH₂O.

However, during this morning's ward round, the overnight on call ICU doctor reported that the patient was agitated, combative, and “delirious” in the evening.

As a result, the morphine and midazolam infusion was recommenced and the patient developed frequent apnoea. He was required to be placed back on a synchronized intermittent mandatory ventilation (SIMV-Volume controlled) mode with FiO₂ of 0.4, SMIV rate of 15 and PEEP of 5 cmH₂O.

As the consultant in charge, please:

- A. List eight (8) differential diagnoses for this patient. (2 marks)**
- B. During the ward round, your colleague suggests this patient has delirium. What are the features that you will look for to support the diagnosis? (2 marks)**
- C. Discuss the currently proposed pathophysiology of delirium. (1 mark)**
- D. Discuss your plan of management. (5 marks)**

End