The Hong Kong College of Anaesthesiologists
Diploma of Fellowship
Final Fellowship (Intensive Care)
Long Answer Paper
2 Questions
FRIDAY, 23rd JULY 1999

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 ONE

A 49-year old female presents with a vague history of anorexia and fatigue for 2 weeks. About three weeks previously she had skin rash for which she had presented to a general practitioner and had been prescribed oral steroids and Chinese herbal medications.

On Admission to the general ward she was found to have marked jaundice and her initial renal and liver function tests showed the following results:

Na	131 mmol/L,	Urea	2.2 mmol/L,
K	3.4 mmol/L,	Creatinine	57 umol/L
Cl	98 mmol/L	Bilirubin	492 umol/L
		ALT	895 U/L (5-31)
		AST	2268 U/L (12-28)
		GGT	36 U/L (7-30)
		Ammonia	63 umol/L (0-33)

1. What are the abnormalities in these tests and what do they represent?

2. What further blood tests would be useful in determining the aetiology of these abnormalities?

The patient develops decreased conscious level in the ward at 0300 hrs and the on-call doctor contacts ICU for assessment.

3. What are possible causes of coma in acute liver failure?

4. What investigations would you immediately perform?

5. What criteria would you use to determine if the patient should be intubated?

The patient is admitted to ICU and develops a fever and oliguric renal failure over the first 24 hours.

6. What are the potential causes of fever in this patient?

7. What are the potential causes of renal failure in this patient, how would you differentiate them and what therapeutic manoeuvres would you attempt to ameliorate the renal failure?

The patient has progressive liver failure and is booked for a liver transplant. There are no potential living-related donors, so a cadaveric graft is awaited.

8. What are criteria for liver transplantation?

9. What complications may arise during this waiting period?

QUESTION TWO

A 26 year old male presents to A&E with a one day history of fever, chills, rigor, cough, palpitation and shortness of breath. There was a recent history of travel to China. The patient was noted to be shocked and in complete heart block with a pulse of 40/min. CXR was clear. ECG after fluid resuscitation showed tri-fascicular block associated with a transient wide complex tachycardia. This subsided spontaneously but the patient remained hypotensive.

The patient was admitted to the ICU where he was intubated and mechanically ventilated. Repeat CXR revealed bilateral pulmonary infiltrates. The patient developed multiple organ dysfunction necessitating inotropic support and dialytic therapy, in association with metabolic acidosis, hyperkalaemia, and lactic acidosis.

A pulmonary artery flotation catheter was inserted and the following haemodynamic profile obtained (BSA $1.69M^{2)}$:

PCWP 12mmHg

Cardiac index 2.36 L/min/M^2	cardiac output 3.9L/min
Stroke index 15.8 ml/ M^2	stroke volume 26.7ml
SVRI 2818 dynes.sec/cm^5/ M^2	SVR 1668 dynes.sec/cm^5
PVRI 407 dynes.sec/cm^5/ M^2	PVR 241 dynes.sec/cm^5
LCWI 3.2 Kg-m/M^2	LCW 5.5 Kg-m
LVSWI 21.7 g-m/M^2	LVSW 36.7 g-m
RCWI 1.06 Kg-m/M^2	RCW 1.79 Kg-m
RVSWI 7.09 g-m/M^2	RVSW 11.99 g-m

1. Describe your initial management of this patient in A&E and what initial investigations would you perform.

2. Discuss the various aetiologies of lactic acidosis.

3. Briefly describe the mechanism of action of commonly used inotropes in ICU and how would a haemodynamic data profile, as outlined above, aid you in your choice of drug(s).

4. What physiologic end-points would you regard as important and how would you go about achieving these?

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