

REPORT OF PAEDIATRIC INTENSIVE CARE FELLOWSHIP EXAMINATION
AUGUST/SEPTEMBER 2003

This report is prepared to provide candidates, tutors and their Supervisors of Training with information about the way in which the Examiners assessed the performance of candidates in the Examination. Answers provided are not model answers but guides to what was expected. Candidates should discuss the report with their tutors so that they may prepare appropriately for the future examinations.

One candidate presented for this examination and was successful.

ORAL SECTIONS

Investigations section:

A systematic approach to the types of investigations examined was more likely to maximise the candidate's score.

Investigation presented for discussion included:

- ECGs demonstrating JET/SVT/cardiac pacing
- CXRs demonstrating cardiomegaly, pneumothorax, abnormally positioned nasogastric tube
- CT of chest demonstrating a lung abscess
- blood gas results demonstrating hypochloraemic metabolic alkalosis, severe respiratory alkalosis
- cerebral angiogram, intraosseous needle

Cross Table Viva Section

There were 2 structured Vivas of thirty minutes each.

Candidates should be able to provide a systematic approach for assessment and management of commonly encountered clinical scenarios. Candidates should also be prepared to provide a reasonable strategy for management of conditions that they may not be familiar with.

Example of topics discussed, with introductory question:

- Unresponsive 1 yr old child.

Introduction: “A 1 year old female with a 48 hour history of poor feeding and lethargy presents to your emergency room unresponsive.

Examination reveals a well-grown child with no obvious signs of injury. She is pale, mottled, and a painful stimulus elicits a groan and a localising flexor response. Her temperature is 35.5 degrees, her pulse rate 160 bpm, respiratory rate 50 bpm and BP 90/60 mmHg.”

Other topics discussed included:

- 3 yr old child with convulsions and hyponatremia
- 4 yr old child still comatose after drowning episode
- 10 yr old after motor vehicle accident, consideration of and timing of tracheostomy
- 6 yr old child with a quinine ingestion
- Principles of haemodialysis in a child

The Clinical Section

The Clinical Section was conducted at the Children’s Hospital at Westmead.

Candidates should listen carefully to the introduction given by the examiners and direct their examination accordingly. Patients were presented as problem solving exercises. For maximal marks, candidates should demonstrate a systematic approach to examination, clinical signs should be demonstrated, and a reasonable discussion regarding their findings should follow. Exposing the patients should be limited to those areas that are necessary for that component of the examination, and in keeping with the modesty requirements of the patients.

Cases encountered as Cold Cases included:

- 2 yr old child, meningococcal disease, with a swollen leg
- 3 yr old child with spinal muscular atrophy on BiPAP
- 4 yr old child with Williams syndrome and aortic stenosis
- 13 yr old child with mitral valve prolapse

Cases encountered as Hot Cases included:

- 3 month old child with tachyarrhythmias after cardiac surgery
- 10 month old child with Jeune’s thoracic dystrophy and pneumonia

WRITTEN SECTIONS

It is imperative that candidates answer the specific question asked. A structured, orderly response considering all aspects of management is required. Writing should be legible to allow candidates to gain optimal marks.

Long Answer Questions

The questions release information piecemeal and incompletely as in the clinical situation.

Issues related to the specific setting were expected to be addressed rather than broad generalities. The examiners apportioned marks according to difficulty and required time within each question. An organised/systematic approach is expected.

QUESTION 1

You are called to see a 3-year-old female back-seat passenger in the Emergency Department who has been brought in by ambulance after a motor vehicle crash (head on collision). She is complaining of abdominal pain.

- (a) Outline your initial management of this girl.
- (b) Discuss the timing and nature of any investigations that you would perform.
- (c) Discuss how paediatric responses to hypovolaemia in trauma differ from adult responses.
- (d) Discuss how paediatric airway management in severe trauma is different from adults.

QUESTION 2

A 5-year-old boy has been admitted to your Paediatric Intensive Care Unit with a presumptive diagnosis of community acquired pneumonia. He has a history of SMA type 2 (Spinal Muscular Atrophy). He is sedated, intubated and ventilated and is haemodynamically stable.

- (a) What specific historical information would you attempt to obtain? Discuss why.
- (b) What specific investigations would you order? Discuss why.
- (c) What empiric therapy would you commence (drugs, dosage, route and duration)? Discuss why.
- (d) After 10 days he is still requiring artificial ventilation. Please summarise the issues you would take into account in discussing this situation with his family.

Short Answer Questions

1. Outline your principles of management in the transport of the critically ill patient.
2. Critically evaluate the role of hyperbaric oxygen therapy in the management of the critically ill patient.
3. Critically evaluate the role of “immunonutrition” in the management of the critically ill patient.
4. Compare and contrast the use of the Chi-squared test, Fisher’s Exact Test and logistic regression when analysing data.
5. Compare and contrast methods of measuring cardiac output in the management of a critically ill child with shock.
6. Outline the clinical scenarios in which you would consider instituting dialysis in the critically ill.
7. Outline the diagnostic features, complications and treatment of patients with an overdose of sodium valproate (valproic acid).
8. Outline the features which would suggest the need to test for hypothyroidism in a child critically unwell in your Paediatric Intensive Care Unit.
9. Compare and contrast the pharmacology of ceftriaxone, gentamicin and meropenem.
10. Outline the diagnostic features, complications and treatment of patients with malignant hyperpyrexia.
11. Outline the clinical manifestations, appropriate investigations and treatment of “volutrauma” in the critically ill patient.
12. Outline the causes, and principles of management of ventricular fibrillation.
13. Outline your approach to the transfusion of red blood cells in the critically ill patient.
14. Outline the way in which you would evaluate the aetiology of metabolic acidosis in the critically ill.
15. List the potential causes of profound weakness in the critically ill, and outline how you would determine which factors were contributory.

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Chairman, Fellowship Examination Committee

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