Questions for this month's clinical challenge are based on articles in this issue. The style and scope of questions is in keeping with the MCQ of the College Fellowship exam. The quiz is endorsed by the RACGP Quality Assurance and Continuing Professional Development Program and has been allocated 4 CPD points per issue. Answers to this clinical challenge will be published next month, and are available immediately following successful completion online at www.gplearning.com.au. Check clinical challenge online for this month's completion date.

Deepa Daniel

Single completion items

DIRECTIONS Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the most appropriate statement as your answer.

Case 1
Jason Burrows

Jason Burrows, 13 years of age, has type 1 diabetes, diagnosed 1 year ago and stable over the past 3 months. He presents with 1 week of weight loss, mild abdominal discomfort and new nocturnal enuresis. You are concerned about the possibility of diabetic ketoacidosis (DKA).

Question 1

Which of the following is NOT a risk factor for Jason developing DKA:

A. co-existent depressive symptoms
B. his age
C. higher mean HbA1C
D. his gender
E. high insulin dosages.

Question 2

Jason has a blood sugar level of 18 mmol/L, is conscious, haemodynamically stable and mildly dehydrated. You perform urinalysis. For this patient, a large amount of urine ketones on dipstick assessment would imply:

A. a starvation state
B. a decompensatory state
C. a high risk of diabetic ketoacidosis
D. impending cerebral oedema
E. nothing (bedside urinalysis is of no value in patients with known IDDM with symptoms of DKA).

Question 3

You assess that Jason is in early DKA and contact the local hospital to organise transfer. Which of the following infusions will they recommend for Jason while awaiting ambulance transfer to hospital:

A. insulin infusion with a long acting insulin (eg. protophane)
B. 0.9% normal saline up to twice the usual daily requirement over 24 hours, plus a short acting insulin
C. 5% dextrose in 0.45% normal saline due to his glucose level being >15 mmol/L
D. oral fluids as tolerated, up to twice the usual daily requirement
E. 0.9% normal saline at a rate of 10/20 mL/kg over 1–2 hours.

Question 4

You explain to Jason's mother that at hospital, staff will monitor Jason for development of complications of DKA such as cerebral oedema. Regarding cerebral oedema, which of the following is most correct:

A. signs include increasing blood pressure, heart rate, and decreasing oxygen saturation
B. therapy involves fluid restriction, 0.45% normal saline and mannitol
C. it is more likely in patients with a higher partial pressure of arterial carbon dioxide
D. it occurs in approximately 10% of patients with DKA
E. sudden diuresis is a typical warning sign.

Case 2
David Joseph

David Joseph is 16 months of age. He is otherwise well, but is brought to your clinic with a 12 hour history of high fevers, one vomiting episode, and poor oral intake.

Question 5

Which of the following sets of vital signs would be within normal limits for David:

A. heart rate (HR) 165 bpm, respiratory rate (RR) 40 bpm, systolic BP (SBP) 80 mmHg
B. HR 90 bpm, RR 16 bpm, SBP 90 mmHg
C. HR 90 bpm, RR 40 bpm, SBP 60 mmHg
D. HR 70 bpm, RR 30 bpm, SBP 90 mmHg
E. HR 110 bpm, RR 40 bpm, SBP 80 mmHg.

Question 6

David is listless, drowsy, with a HR of 140 bpm, RR 48 bpm, and SBP of 80 mmHg. You perform a full examination, including looking for signs of meningococcal meningitis or sepsis. Kernig's sign can be assessed by:

A. checking for prolonged central capillary refill time
B. looking for apparent pain on flexing the hip to 90 degrees with the knee extended
C. flexing the neck to check for reactive flexion of the hips and knees
D. trying to touch David's chin to his chest (flexing the neck) for neck stiffness
E. none of the above.

Question 7

You call an ambulance and consider the possibility of bacterial meningitis. Which of the following would be the most preferred antibiotic to give pre-hospital transfer:

A. chloramphenicol
B. ampicillin
C. benzylpenicillin
D. ceftriaxone
E. norfloxacin.

Question 8

You administer the appropriate antibiotics. While continuing to monitor David's

condition and giving fluid resuscitation, you obtain a more focused history. The mnemonic 'SAMPLE' can be used for assessing mechanism of injury or circumstances of illness. The 'L' in 'SAMPLE' stands for:

A. localised pain
B. last dose of medications given
C. last time food or liquid were consumed
D. lifestyle history (eg. normal physical activities the patient is involved with)
E. length of time since injury sustained or illness began.

Case 3

Holly Chen

Holly Chen, 4 years of age, with no significant past history, presents with the sudden onset of stridor at rest, hoarse voice and a barking cough.

Question 9

Which of the following is NOT a differential diagnosis for this presentation:

A. asthma
B. bacterial tracheitis
C. diptheria
D. epiglottitis
E. foreign body inhalation.

Question 10

You diagnose mild-moderate croup in Holly, with no increased respiratory effort. An appropriate course of action at this stage is:

A. perform a nasopharyngeal aspirate to definitively diagnose aetiology of symptoms
B. administer 1 mg/kg prednisolone syrup, with review in 1 hour to ensure clinical improvement
C. reassure and review the next day
D. administer nebulised adrenaline and transfer for ongoing observation
E. administer appropriate prophylactic antibiotics and prednisolone (1 mg/kg daily for 3 days).

Question 11

Which of the following potential treatments is appropriate for the management of mild-moderate croup:

A. anti-tussive agents
B. administration of humidified/cold air
C. salbutamol inhaler (with spacer) or nebuliser if wheeze present
D. prophylactic antibiotics
E. administration of heliox-oxygen mix.

Question 12

Holly's mother brings her back the next day with worsening respiratory distress at rest, despite the daily prescribed prednisolone. With respect to severe croup, all of the following is true, EXCEPT:

A. if a child's stridor becomes softer but respiratory effort is increased, obstruction may we worsening
B. measuring of oxygen saturation is of little clinical benefit
C. rebound airway obstruction can occur after nebulised adrenaline, so monitoring for 2 hours after administration is essential
D. improvement after nebulised adrenaline is expected within 2–10 minutes
E. examination should be directed and the practitioner should avoid undue distress to ensure airway patency.

Case 4

Helena Theos

Helena Theos, 5 years of age, has sustained a suspected head injury at home. She is alert and responsive now.

Question 13

You consider the possibility of a skull fracture. Which of the following examination findings is NOT suggestive of an underlying skull fracture:

A. hypoglycaemia on BSL
B. haemotypanum
C. cerebrospinal fluid otorrhoea or rhinorrhoea
D. retroauricular bruising
E. scalp deformity.

Question 14

You decide to use the CHALICE (Children's Head injury Algorithm for the Prediction of Important Clinical Events) guidelines in Helena's case. These guidelines can be used to:

A. monitor recovery after head injury
B. determine when normal exercise/physical activity can be recommenced
C. determine whether Helena should return for follow up review
D. determine whether Helena should have a CT scan
E. determine whether Helena requires urgent transfer to hospital.

Question 15

You decide to organise a CT scan of the brain (CTB) for Helena. Regarding CT scanning after head injury, all of the following are correct EXCEPT:

A. patients with haemophilia warrant a lower threshold for imaging
B. one CTB is equivalent to the cumulative ionising radiation exposure of 315 chest X-rays
C. a period of loss of consciousness for >30 minutes may infer an underlying abnormality requiring scanning for diagnosis after head injury
D. patients <2 years of age warrant a lower threshold for imaging
E. skull X-rays have no role in the assessment of mild traumatic head injury.

Question 16

Helena's CTB was normal. Her parents bring her back to the practice because of intermittent headaches 6 weeks after the head injury. Which of the following is true regarding post-concussive syndrome:

A. less than one-fifth of parents report personality changes in their children after head injury
B. symptoms lasting >1 week raise the possibility of second impact syndrome even in the absence of a history of a second trauma
C. there is no link with early return to activity and prolonged postconcussive symptoms
D. Helena should keep exercising as usual
E. the majority of symptoms of postconcussion syndrome will resolve within 3 months of injury.

Answers to April clinical challenge

Case 1 – Anh Dung Nguyen

1. Answer C

Depression is underdiagnosed among minority groups and studies have shown outcome of care is affected by ethnicity. A general practitioner's own culture has been shown to play a role in diagnosing and managing mental health issues. Unemployment is a factor associated with higher rates of mental illness.

2. Answer D

Identifying prevalence of mental illness in these groups is complex. Approximately one-third identify as having a CALD background. These communities come from a wide range of backgrounds. CALD and socioeconomic factors influence health and wellbeing.

3. Answer E

All of the responses are correct.

4. Answer B

The first statement is a stereotype that should be avoided. General practitioners may well adapt their communication with a patient based on their perception of the patient's culture. There is a health professional culture that affects patient-doctor relationships. General practice has an important role is ensuring equity of access to mental health services.

Case 2 – Khin Mya

5. Answer A

This reluctance has been attributed to misconceptions about the service. It is not the patient's responsibility to book an interpreter. Doctors cannot use their own code number to arrange an interpreter for another doctor. Professional interpreters work to a code of ethics, which covers confidentiality. The literature does not support the lengthening of consultations using interpreters.

6. Answer D

The services are free for any GP providing a Medicare rebatable consultation and there is no registration cost. The patient's details are not disclosed. The service aims to provide an interpreter within 3 minutes. If a doctor has not registered they can simply quote their provider number.

7. Answer B

Patients generally bear the cost for bringing a professional interpreter, which is a disincentive. Using a family member has been shown to result in poorer quality, longer consultations.

8. Answer C

Using a face-to-face interpreter may be preferable for mental health consults. It is important to make eye contact with the patient. While the interpreter speaks the doctor can observe the patient and formulate the next question. It is best to use the first person when speaking to the patient. It is important the doctor remains in charge.

Case 3 – Wen Liu

9. Answer A

A doctor must reflect on their own beliefs, while respecting the patient's beliefs. Cultural competence, not sensitivity, is best learnt through formal training. It is important not to stereotype patients on the basis of their ethnic background. Minority groups are much less likely to have access to all health care systems.

10. Answer E

All of the responses are correct.

11. Answer D

For some groups a death in the home may mean the house has to be abandoned.

12. Answer B

This may be appropriate if they want to talk about death. It is important to find out what Wen believes. Discussing death is actively discouraged in some cultures. Cantonese is the third most common language other than English spoken at home. It is often not optimal to use a family member to translate.

Case 4 – Claudine Bofala

13. Answer C

Approximately 70% of refugees have experienced trauma. The majority are aged less than 30 years. The largest groups come from Iraq, Burma and Afghanistan. General practitioners are often the first medical contact for refugees.

14. Answer B

Resettlement difficulties often add to their health burden. Sadly, experiences of racism are common. Ethnic communities are often unable to support new arrivals. Ongoing grief and anxiety is common.

15. Answer A

Children are usually not spared the effects of trauma so it is important to assess, support and treat the entire family. Pressing Claudine to say more than she wants to can re-traumatise her. Traumatic events have significant impact on memory so there may be inconsistencies. Asking about symptoms of depression is very important.

16. Answer E

The psychological sequelae of severe trauma are cumulative and can manifest in all of these conditions.

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