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.racgp.org.au/clinicalchallenge. Check clinical challenge online for this month's completion date. **Kath O'Connor**

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 – Jane Hunt

You receive a call from a patient, Jane Hunt, requesting a house call because of uncontrolled vomiting which started this morning. She has recently had a mastectomy and axillary clearance for breast cancer. She was node positive and had her first dose of chemotherapy 2 days ago.

Question 1

Which the following is true:

A. the vomiting is unlikely to be related to the chemotherapy as this side effect usually peaks 5–6 hours after chemotherapy
B. the vomiting is unlikely to be related to the chemotherapy as the oncologist will have placed her on an antiemetic regimen to prevent this
C. this is an example of anticipatory phase nausea and vomiting
D. this is an example of delayed phase nausea and vomiting
E. this is an example of acute phase nausea and vomiting.

Question 2

You print out the recent letter from the oncologist which details her chemotherapeutic regimen. You notice that doxorubin and cyclophosphamide have been used with an antiemetic regimen of ondansetron on day 1, aprepitant on day 2 and 3, and dexamethasone days 2–4. What is the emetogenicity (ability to cause vomiting) of the combination of doxorubin and cyclophosphamide?

A. high
B. minimal
C. moderate
D. low
E. all chemotherapeutic agents have similar emetogenicity.

Question 3

You visit Jane at home. She has vomited 10–12 times in the past 12 hours. She looks pale and unwell and is mildly dehydrated. What do you do next?

A. institute rescue treatment for breakthrough CINV
B. call an ambulance
C. take a history and examine for other causes of vomiting
D. organise an outpatient oncology review
E. write a letter to the oncologist suggesting changes to the baseline antiemetic regimen for her next cycle of chemotherapy.

Question 4

Jane has had no diarrhoea or constipation and has no abdominal pain, fever or urinary symptoms. She is not on any opiate medication, which might explain her symptoms. Abdominal, CVS and RS examination is normal. You send off bloods including FBE, CRP, EU&C, calcium and a urine micro and culture. You suspect breakthrough delayed phase CINV. She is unable to take oral medications. Which of the following is appropriate initial treatment?

A. rectal prochlorperazine and sublingual lorazepam or ondansetron
B. high dose dexamethasone and regular metoclopramide
C. oral cisplatin
D. ambulance to hospital for IV treatment
E. nil, CINV is an expected complication of chemotherapy and she needs to maintain hydration until it passes.

Case 2 – Moira O'Donnell

Moira O'Donnell, 35 years of age, is in her first pregnancy. She presents to you at 9 weeks gestation complaining of nausea and vomiting 'all day'.

Question 5

Which of the following is true regarding the cause of her symptoms?

A. nausea and vomiting of pregnancy is unlikely as this usually occurs in the morning
B. nausea and vomiting of pregnancy is unlikely as it usually ceases abruptly at 9 weeks gestation
C. nausea and vomiting of pregnancy is more likely if the pregnancy was unplanned
D. high HCG concentrations are responsible
E. high HCG levels often coincide but causation has not been established.

Question 6

You take a full history and examine Moira. She has no diarrhoea or constipation and no abdominal pain. She has a family history of thyroid disease. On examination you find she is mildly dehydrated and has 1+ of ketonuria and 1+ of protein 1+ of white blood cells and 1+ of blood on dipstick testing of her urine. Abdominal examination reveals mild epigastric tenderness. The following investigations are indicated EXCEPT:

A. TSH
B. abdominal X-ray
C. midstream urine micro, culture and sensitivity
D. electrolytes
E. liver function tests.

Question 7

History, examination and investigations exclude secondary causes. What lifestyle advice do you give Moira?

A. maintain an empty stomach as this will help avoid nausea
B. avoid salty fluids as these will dehydrate her
C. nibble on dry biscuits frequently
D. eat and drink large amounts often
E. lifestyle advice is not indicated as it is unproven.

Question 8

Which of the following is MOST appropriate as first line treatment for Moira:

A. pyridoxine and doxylamine
B. pyridoxine and prednisolone
C. doxylamine and prednisolone
D. pyridoxine and metoclopramide
E. acupuncture.

Case 3 – Hiresh Chandra

Hiresh Chandra, aged 3 years, presents to your rural general practice at 9 pm with his parents. They say he has been vomiting 'continuously' since 10 am the previous morning and has been irritable, upset and refusing fluids.

Question 9

Which of the following does NOT represent a 'red flag' which necessitates urgent referral:

A. abdominal tenderness and guarding
B. neck stiffness
C. high fever
D. diarrhoea
E. vomiting blood.

Question 10

Hiresh has no 'red flags'. He had about seven loose bowel actions overnight and his parents are not sure if he has had a wet nappy since the diarrhoea started. On examination he is moderately dehydrated (4–6%). Which of the following is an indicator of the moderately dehydrated child:

A. hypotension
B. cool peripheries
C. tissue turgor >2 seconds
D. rapid pulse
E. irritability.

Question 11

You take Hiresh and his parents into the treatment room and ask the practice nurse to observe him, give him a Hydralyte™ icy-pole and weigh him. When you return half an hour later he has not touched the icy-pole and is crying and distressed. His parents say he has been like this since he woke up this morning and that they have tried water, cordial, and watered down juice but Hiresh will not drink. What do you do next:

A. vaccinate him against rotavirus
B. send him home with oral maxalon and Gastrolyte™ and strict instructions to return if he is still vomiting tomorrow
C. call the local hospital and arrange admission for nasogastric tube rehydration
D. insert an IV and rehydrate him intravenously; he will not tolerate a nasogastric tube while vomiting
E. order urgent electrolytes, glucose, blood gas and urinalysis.

Question 12

You call the local hospital to arrange admission. The nurse in charge asks you to come down and write up the fluid orders. Hiresh weighs 15 kg. To make up a presumed deficit of 5%, what hourly rate of nasogastric fluid is appropriate over the next 6 hours:

A. 800 mL/hr
B. 125 mL/hr
C. 75 mL/hr
D. 20 mL/hr
E. 250 mL/hr.

Case 4 – Santo Benedetto

Santo Benedetto, aged 30 years, presents complaining of nausea and vomiting for 2 days.

Question 13

The most common cause of acute nausea and vomiting in adults is:

A. diabetic ketoacidosis
B. appendicitis
C. pancreatitis
D. gastroenteritis
E. small bowel obstruction.

Question 14

You take a history. Santo has vomited over 10 times per day for the past 2 days. The vomitus is partially digested food and yellow liquid. He has no abdominal pain, no diarrhoea or constipation and no fever or malaise. He does not remember eating anything 'dodgy' and has not been in contact with anyone who is sick. He is still able to drink but vomits every few hours. He recently had a knee reconstruction and is taking Panadeine Forte for the pain. You examine Santo. Which of the following examination findings would be LEAST likely to prompt you to send Santo to hospital for a surgical opinion:

A. sucussion splash
B. abdominal tenderness with guarding and rebound
C. severe dehydration
D. incarcerated inguinal hernia
E. tinkling bowel sounds.

Question 15

Santo has dry mucous membranes and has a heart rate of 70 bpm. He has normal tissue turgor and is normotensive. His abdominal examination reveals mild generalised tenderness with no guarding or rebound, no organomegaly, no masses and no herniae. Neurological examination is normal. Which of the following investigations is the MOST appropriate in this setting:

A. abdominal X-rays
B. EU&C
C. amylase
D. glucose
E. nil.

Question 16

Which of the following is the MOST important part of a management plan for Santo:

A. intravenous rehydration
B. referral to a gastroenterologist
C. antiemetic therapy with Ondansetron wafers
D. finding an alternative to Panadeine Forte for pain management
E. surgical review.

ANSWERS TO AUGUST CLINICAL CHALLENGE

Case 1 – Nicole Burns

1. Answer B

Discussing how overweight may have contributed to Nicole's skin problems is relevant to what is concerning her today. Therefore it is the most appropriate way to raise the issue. There is no evidence that this might induce an eating disorder or that teenagers simply grow out of 'puppy fat'. Long term consequences of overweight such as diabetes and heart disease are unlikely to be of concern to Nicole at present.

2. Answer D

An 'eyeball' test will not identify all cases of overweight. Waist measurement may be useful to monitor progress. BMI increases with chronological age. If the BMI is in the adult overweight/obese range then the adolescent is clearly overweight. But an accurate assessment requires conversion to a percentile for age. Adolescents may be sensitive to body image. Examination by 'moving clothing around' is preferable to asking the adolescent to undress.

3. Answer B

Although blood tests may not change your management it is reasonable to do fasting glucose, lipid profile, thyroid and liver function tests to rule out thyroid disease and screen for metabolic consequences of overweight. If positive, they may prove a powerful motivating tool. Tests for PCOS, Cushing syndrome and genetic disorders are not indicated by the history.

4. Answer C

Evidence is limited to intensive resources, tertiary centres, small numbers and limited follow up. However NHMRC guidelines suggest behavioural interventions including dietary modification and an increase in physical activity. Referral to a commercial weight loss program is not appropriate as they are often adult focused. Overweight adolescents are often very self conscious, so swimming and gym work may not be appropriate. Exercise without dietary modification will generally not be successful.

Case 2 – Carmela De Luca

5. Answer D

It is important to assess whether Carmela is mature enough to make this decision. If you believe that she is you are bound by confidentiality not to tell Carmela's parents unless Carmela consents to this. However, it is prudent to encourage her to discuss the issue with her parents.

6. Answer B

Carmela can be considered a 'mature minor' if she understands use of the treatment (in this case the OCP) and any possible side effects. It is important to discuss 'safe sex' but this is not specifically required to assess 'Gillick competency' or 'mature minor' status for prescription of the OCP.

7. Answer C

As a 'mature minor' if Carmela refuses to tell her mother this is her right and the information must remain confidential.

8. Answer B

There is a catch up program in schools for girls aged 13–18 years, which will occur over the next 2 years. The vaccine is free for these girls.

Case 3 – Craig McConnell

9. Answer C

Seeing Craig as an individual will encourage engagement. It is important to discuss this tactfully with his mother. It is important that Craig knows that his confidentiality will be respected; research shows that concerns regarding confidentiality can be a barrier to adolescents.

10. Answer B

The HEADSS framework stands for Home, Education/Employment, Activities, Depression (and Drugs), Sex and Suicidality. It is useful because it starts with the least threatening areas and provides context.

11. Answer D

Craig is not able to see that his drug use is a problem. Therefore he is in the motivational 'stage' of precontemplation.

12. Answer A

Craig is precontemplative towards his drug use but is able to think about associated risk and consider harm minimisation strategies. Therefore, he is contemplation and action oriented toward harm minimisation.

Case 4 – Marcus Holland

13. Answer C

There is no specific age at which capacity for self management appears. It develops in varying degrees toward different aspects of disease as an individual adolescent matures.

14. Answer C

Research shows that young people with chronic conditions are more likely to participate in health risk behaviours such as drug use or unsafe sexual activity compared to other young people.

15. Answer A

The HEADSS schema stands for Home, Education/Employment, Activities, Depression (and Drugs), Sex and Suicidality.

16. Answer B

It is important to discuss issues around safe sex. You are not required to report Marcus and Sally for having consensual sexual intercourse. Sally may choose to see a GP to discuss her sexual health but a Pap test is not indicated. An HIV test may be indicated depending on a full sexual history or as part of a full STI screen but with the information you have it is not the first priority. Hepatitis C is mainly transmitted by IV drug use and there is no vaccine.

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