DUMPSARENA

SEND - Endocrinology and Diabetes (Specialty Certificate Examination)

MRCPUK SEND

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QUESTION NO: 1

A 33-year-old man was referred to the diabetes clinic with an 8-month history of weight loss and polydipsia. Two months previously his general practitioner had found a high fasting plasma glucose concentration of 17.5 mmol/L (3.0–6.0) and a haemoglobin A1c of 116 mmol/mol (20–42). The patient was taking metformin 1 g twice daily. He reported in the diabetes clinic that his home capillary blood glucose concentrations persisted to be high, ranging between 15–24 mmol/L.

On examination, his body mass index was 23 kg/m2 (18–25).

His blood tests were repeated in the diabetes clinic and he was treated with a basal bolus insulin regimen. Urinalysis was negative for ketones.

Investigations (in diabetes clinic):

haemoglobin A1c 110 mmol/mol (20–42)

serum C-peptide 200 pmol/L (180–360)

anti-glutamic acid decarboxylase (GAD)

antibodies 69 IU/mL (<10)

anti-IA2 antibodies negative

What is the most likely diagnosis?

A. haemochromatosis

B. latent autoimmune diabetes in adults

C. maturity-onset diabetes of the young

D. mitochondrial diabetes mellitus

E. type 1 diabetes mellitus

ANSWER: B

QUESTION NO: 2

An 18-year-old woman was referred by her general practitioner for further investigation of “funny turns” during which she developed palpitations, sweating, tremor, hunger, anxiety and paraesthesiae; all of these symptoms were relieved immediately by a sugary drink. She was otherwise well and was not taking any regular medication. There was a family history of type 1 diabetes mellitus. A spontaneous hypoglycaemic episode had not been captured and she was admitted to the diabetes/endocrine ward for a 72-hour fast. Her renal function was normal.

After a 12-hour fast she experienced her typical symptoms. Urinalysis showed no urinary ketones.

Investigations after 12-h fast:

fasting plasma glucose 2.0 mmol/L (3.0–6.0)

plasma insulin 56 pmol/L (<21 after hypoglycaemia)

serum C-peptide 514 pmol/L (180–360)

What is the most appropriate next step in management?

A. coeliac axis angiography

B. MR scan of abdomen and pelvis to localise a mesenchymal tumour producing insulin-like growth factor 2

C. MR scan of pancreas to localise an insulinoma

D. obtain a careful history looking for access to exogenous insulin

E. request a urinary sulphonylurea screen on sample obtained during the fast

ANSWER: E

QUESTION NO: 3

A 17-year-old boy with type 1 diabetes mellitus was admitted with diabetic ketoacidosis precipitated by a recent viral illness.

Investigations on admission:

random plasma glucose 15.0 mmol/L

arterial blood gases, breathing air:

pH 7.07 (7.35–7.45)

H+ 85 nmol/L (35–45)

Investigations after initial treatment with fluids, insulin and potassium 7 h after admission:

random plasma glucose 4.0 mmol/L

serum bicarbonate 10 mmol/L (20–28)

At this stage, he was being given infusions of insulin (1 U/h) and glucose 5% (100 mL/h).

What is the most appropriate next step in management?

A. continue current regimen

B. continue current regimen but encourage oral carbohydrate intake

C. continue insulin infusion and change glucose to a higher concentration

D. give intravenous sodium bicarbonate

E. stop insulin infusion if glucose falls any further, then repeat plasma glucose in 15 min

ANSWER: C

QUESTION NO: 4

A 54-year-old man was referred from the urology department with erectile dysfunction.

On examination, he had normal secondary sexual characteristics. Testicular volume was estimated at 15 mL bilaterally.

Investigations:

random plasma glucose 8.0 mmol/L

serum testosterone 8.1 nmol/L (9.0–35.0)

plasma follicle-stimulating hormone 3.4 U/L (1.0–7.0)

plasma luteinising hormone 4.7 U/L (1.0–10.0)

serum prolactin 410 mU/L (<360)

What is the most appropriate next step in management?

A. check for macroprolactinaemia

B. fasting plasma glucose

C. prescribe sildenafil

D. prescribe testosterone replacement

E. serum testosterone (09.00 h)

ANSWER: E

QUESTION NO: 5

A 35-year-old woman with a 12-year history of type 1 diabetes mellitus was reviewed in the multidisciplinary pump clinic, because her diabetes was treated with an insulin pump. She had a group 2, C1 lorry-driving licence.

Specific driving-related questioning showed that she kept fast-acting carbohydrate in her vehicles and she reported good hypoglycaemic warnings. Data downloaded from her pump indicated significant variability in her blood glucose readings with few results below 2 mmol/L. She declared that this happened occasionally and she was able to explain the events.

According to implementation by the UK of the Third European Union Directive on driving, what is the most appropriate advice?

A. her licence must be surrendered immediately until further assessment

B. she can continue to drive

C. she must appear before a Driver and Vehicle Licensing Agency-accredited diabetes specialist for assessment within 1 month

D. she must surrender her licence for 6 months

E. she should stop driving voluntarily until blood glucose levels increase

ANSWER: B

QUESTION NO: 6

A 28-year-old man was seen in the lipid clinic following a referral from the general surgical team. He had had two episodes of acute pancreatitis over the preceding 6 months, which settled spontaneously. He had a past medical history of HIV disease and was taking highly active antiretroviral (HAART) therapy. He drank 12 units of alcohol per week.

On examination, he had no stigmata of hyperlipidaemia.

Investigations:

fasting plasma glucose 6.2 mmol/L (3.0–6.0)

haemoglobin A1c 44 mmol/mol (20–42)

serum cholesterol 7.5 mmol/L (<5.2)

fasting serum triglycerides 23.70 mmol/L (0.45–1.69)

serum thyroid-stimulating hormone 0.7 mU/L (0.4–5.0)

serum free T4 14.3 pmol/L (10.0–22.0)

What class of antiretroviral drug is the most likely cause of his metabolic disturbance?

A. entry inhibitors (e.g. enfuvirtide)

B. integrase inhibitors (e.g. raltegravir)

C. non-nucleoside reverse transcriptase inhibitors (e.g. nevirapine)

D. nucleoside reverse transcriptase inhibitors (e.g. zidovudine)

E. protease inhibitors (e.g. ritonavir)

ANSWER: E

QUESTION NO: 7

A 32-year-old woman with a recurrent history of Graves' thyrotoxicosis was being considered for radioiodine treatment. However, she wanted to conceive again at some stage and asked how soon she could become pregnant.

After what minimum interval would it be safe for her to conceive again?

A. 2 months

B. 4 months

C. 6 months

D. 8 months

E. 12 months

ANSWER: C

QUESTION NO: 8

A 32-year-old man presented with persistent thirst. He had a past history of polydactyly, which had been corrected surgically in infancy. His family had remarked about his recent weight gain. His only concern was of blurring of vision and difficulty reading. His father and paternal grandfather had each developed type 2 diabetes mellitus when aged 41 and 56 years, respectively.

His body mass index was 34 kg/m2 (18–25). Urinalysis showed glucose 2+, ketones 1+.

Investigations:

serum sodium 142 mmol/L (137–144)

serum potassium 3.8 mmol/L (3.5–4.9)

serum chloride 105 mmol/L (95–107)

serum urea 5.0 mmol/L (2.5–7.0)

serum creatinine 90 µmol/L (60–110)

haemoglobin A1c 91 mmol/mol (20–42)

random plasma glucose 11.3 mmol/L

ultrasound scan of kidneys normal

What is the most likely underlying diagnosis?

A. Bardet–Biedl syndrome

B. monogenic diabetes caused by a mutation in the glucokinase gene

C. monogenic diabetes caused by a mutation in the HNF-1? gene

D. Prader–Willi syndrome

E. type 2 diabetes mellitus

ANSWER: A

QUESTION NO: 9

A 62-year-old woman with persistent hypertension attended the clinic for review. She had no previous medical history of note and was taking amlodipine, ramipril, bendroflumethiazide, spironolactone and doxazosin. Her blood pressure was raised at 160/100 mmHg.

Investigations:

serum sodium 138 mmol/L (137–144)

serum potassium 3.8 mmol/L (3.5–4.9)

A blood test for renin and aldosterone concentration was being considered.

For what minimum period should spironolactone be discontinued before this test?

A. 72 h

B. 1 week

C. 2 weeks

D. 6 weeks

E. 8 weeks

ANSWER: D

QUESTION NO: 10

A 43-year-old man presented with a 2-year history of tiredness and reduced libido. He had not been found to have diabetes mellitus.

On examination, his body mass index was 22.4 kg/m2 (18–25), he was poorly virilised and had 10 mL testes.

Investigations:

serum cortisol (09.00 h) 220 nmol/L (200–700)

serum testosterone 4 nmol/L (9.0–35.0)

plasma follicle-stimulating hormone 1.2 U/L (1.0–7.0)

plasma luteinising hormone 1.2 U/L (1.0–10.0)

serum prolactin 150 mU/L (<360)

serum thyroid-stimulating hormone 1.2 mU/L (0.4–5.0)

serum free T4 8.2 pmol/L (10.0–22.0)

serum insulin-like growth factor 1 7.8 nmol/L (5.6–23.3)

MR scan of pituitary empty sella; no mass lesion

An insulin tolerance test was advised to assess both cortisol and growth hormone reserve.

What is the most appropriate dose of insulin (in units/kg body weight) to administer?

A. 0.01

B. 0.05

C. 0.1

D. 0.5

E. 1.0

ANSWER: C