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Exam : **SEND**

Title : Endocrinology and Diabetes
(Specialty Certificate
Examination)

Version : DEMO

1. A 67-year-old woman presented to her general practitioner with a swelling in her neck. It had been present for 4–5 years and had not changed in size during that time. She was completely asymptomatic and remained well.

On examination, there was a nodular goitre and no lymphadenopathy.

Investigations:

serum thyroid-stimulating hormone 1.1 mU/L (0.4–5.0)

A subsequent ultrasound scan demonstrated seven nodules bilaterally (ranging in size from 5 mm to 15 mm), which had no suspicious features.

What is the most appropriate next step in management according to British Thyroid Association 2014 Guidelines for the Management of Thyroid Cancer?

- A. fine-needle aspiration of largest nodule
- B. levothyroxine 100 micrograms daily
- C. radioactive iodine
- D. reassure and discharge
- E. subtotal thyroidectomy

Answer: D

2. 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

3. A 17-year-old boy had panhypopituitarism, including diabetes insipidus, following treatment for a craniopharyngioma. He was taking appropriate replacement therapy. In the transition clinic, he was keen to continue growth hormone replacement therapy following a 12-month break after reaching final height.

Which is the most appropriate test to assess his growth hormone status?

- A. clonidine test
- B. growth hormone day profile
- C. insulin-like growth factor 1
- D. insulin-like growth factor-binding protein 3

E. insulin tolerance test

Answer: C

4. A 26-year-old woman with previously well-controlled primary hypothyroidism had been an inpatient for treatment of an eating disorder for the previous 6 weeks. She had a history of anaemia resulting from multiple vitamin deficiency and gastric erosions. She had been taking levothyroxine 125 micrograms daily for the previous 5 years; since admission her medication had also included ferrous sulfate, calcium and vitamin D, and sucralfate. Her daily medicines were taken under supervision at 09.00 h. Although she was eating better and had gained 4 kg in weight, she was now complaining of tiredness and feeling "worse than ever".

On examination, she was thin, slightly pale and had no palpable goitre. Recent blood tests had confirmed that her anaemia had resolved.

Investigations:

serum corrected calcium 2.28 mmol/L (2.20-2.60)

serum thyroid-stimulating hormone 12.0 mU/L (0.4-5.0)

serum free T4 8.0 pmol/L (10.0-22.0)

serum T3 0.90 nmol/L (1.07-3.18)

What is the most appropriate next step in management?

- A. add liothyronine 20 micrograms daily
- B. administer levothyroxine alone at bedtime
- C. increase levothyroxine to 175 micrograms daily
- D. no change in treatment
- E. stop treatment with calcium and vitamin D

Answer: B

5. A 58-year-old man presented with tiredness and breathlessness. He had been treated for type 2 diabetes mellitus and hypertension for the past 10 years. He was free of complications. His current medication included ramipril 10 mg daily, rosuvastatin 10 mg daily, metformin 500 mg three times daily, dapagliflozin 10 mg once daily and exenatide 10 micrograms twice daily.

On examination, his body mass index was 36 kg/m² (18-25).

Investigations:

haemoglobin 93 g/L (130-180)

MCV 110 fL (80-96)

white cell count 3.6 × 10⁹/L (4.0-11.0)

platelet count 140 × 10⁹/L (150-400)

reticulocyte count 0.5% (0.5-2.4)

serum ferritin 250 µg/L (15-300)

serum vitamin B12 40 ng/L (160-760)

serum folate 3.0 µg/L (2.0-11.0)

Which medication is most likely to be contributing to his anaemia?

- A. dapagliflozin
- B. exenatide
- C. metformin
- D. ramipril

E. rosuvastatin

Answer: C