

## Endocrinology Questions

1. A 35 year old female with type II diabetes reports recurrent hypoglycaemic episodes. A thorough review of her diet and medication use fails to elicit an obvious cause. Episodes continue despite optimisation of her insulin therapy. Which of the following tests is least likely to help in establishing the diagnosis of the cause of her hypoglycaemia?

- A. Short synacthen test
- ✓ B. Anti-endomysial antibodies
- C. Serum C-peptide
- D. Gamma GT
- E. Creatinine

2. Bone densitometry is performed and shows t-scores between  $-3.12$  and  $-2.8$  in the lumbar vertebrae, with corresponding z-scores of  $-1.1$  to  $-2.0$ . According the current World Health Organisation classification, the diagnosis is:

- A. Osteopenia
- ✗ B. Osteoporosis
- C. Severe osteoporosis
- D. Normal
- E. Paget's disease of bone

3. A 54 year old woman is found to have hypertension with a BP of 150/90mmHg. Investigations have shown plasma renin activity of 9.2nmol/L/hour (normal 0.77-4.6nmol/L/hour) and an aldosterone of 700nmol/l (Normal <600nmol/l). She is on no medication. Serum Na 145mmol/L. Serum K 2.9mmol/L. What is the most likely cause?

- A. Conn's syndrome
- B. Essential hypertension]
- C. Cushing's syndrome
- ✗ D. Bilateral renovascular disease
- E. Liquorice induced hypertension

4. A 49 year old Asian man had a BMI of 30. HbA1C was 11.1% and at that time random BSL was 17mmol/l. After five months of exercise and weight loss he has an HbA1C of 9%. He reports fasting BSL's of 7-11mmol/l and a random BSL in your office is 13mmol/l. What is the next best management?

- A. Continue exercise and weight loss programme for a further 3 months then re-assess
- B. Start insulin therapy
- ✗ C. Start metformin
- D. Start a sulphonylurea
- E. Start a sulphonylurea and metformin

5. A 58 year old diabetic man presents with diplopia. He has had type II diabetes for 20 years and hypertension for the last 10 years. On examination he has incomplete ptosis of his right eye with evidence of a divergent strabismus. The right eye intorts when the head is tilted to the right. Examination of the pupillary reflex reveals that this is intact and both pupils are of equal size and shape. What is the most common aetiology of this problem?

- A. Cerebrovascular accident involving the right midbrain
- B. Aneurysm of the posterior communicating artery
- ✗ C. Diabetes mellitus causing a third cranial nerve palsy
- D. Raised intracranial pressure
- E. A lesion of the right cavernous sinus

6. A 25 year old woman presents with tremor, nervousness and 5kg of weight loss (BMI = 20). On examination her heart rate is 80 beats/min. There are no other abnormalities on examination. She has thyroid function tests performed. These reveal an elevated free T4 and a suppressed TSH. Anti TSH receptor antibody are normal. Nuclear scanning of the thyroid shows no increase in radionuclide uptake. What is the best treatment?

- A. Prednisolone
- ✗ B. Propranolol
- C. Radio-iodine
- D. Carbimazole
- E. NSAID's

7. Regarding acanthosis nigricans, it is least commonly associated with which of the following?

- A. Cushing's syndrome
- B. Acromegaly
- ✗ C. Haemochromatosis
- D. Type II diabetes mellitus
- E. Polycystic ovary syndrome

8. A 32 year old woman with a past history of hypothyroidism presents. She has been on 100mcg of thyroxine daily for several years. She is brought in by her family with drowsiness and lethargy. On examination she has a BP of 90/50mmHg. Baseline bloods performed in the emergency department reveal the following:

Na	120mmol/l
K	6.1mmol/l
Glucose	2.6mmol/l
Free T4	Normal
TSH	Normal

After drawing blood for analysis, which is the next best step?

- A. 2L of normal saline IV
- ✗ B. 100mg IV hydrocortisone

- C. Increase the dose of thyroxine
- D. 50 ml of 50% IV glucose
- E. Hypertonic saline

9. A 44 year old man has a past history of steroid dependent asthma for which he has been on 5mg of prednisolone for the last 10 years. He is on flixotide 1000mcg daily in a divided dose, along with salmeterol 50mg bd and salbutamol prn. What is the best treatment to reduce the risk of him developing osteoporosis?

- A. Oestrogen therapy
- \* B. Alendronate
- C. Calcium supplementation
- D. Calcitriol
- E. Calcitonin

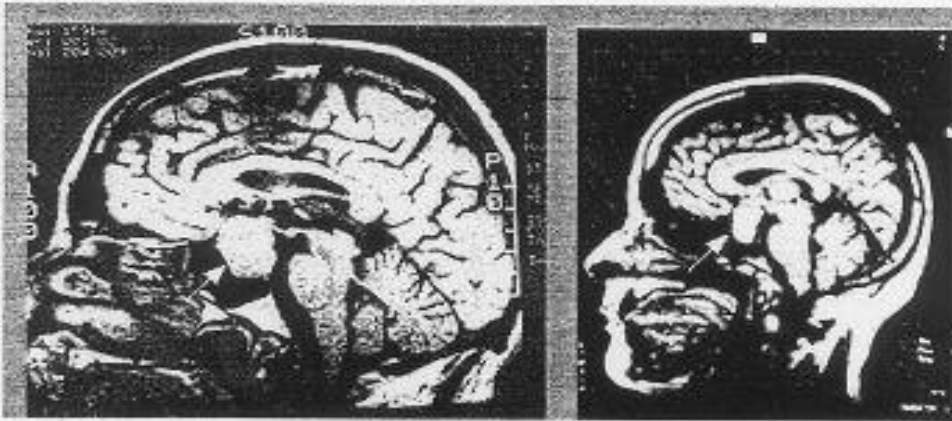
10. A 51 year old woman has a past history of hypothyroidism and arthritis for which she takes thyroxin 100mcg/day and a NSAID. She also has metoclopramide on a regular basis for nausea. She presents to clinic with galactorrhea. An initial blood sample reveals a prolactin level of 2100ng/ml (normal range < 20ng/ml in non lactating women). What is the most likely cause of her galactorrhea?

- A. Hypothyroidism
- B. NSAID use
- C. Idiopathic
- \* D. Prolactinoma
- > E. Metoclopramide use

11. A 55 year old woman who has been in good health for many years presents with a recent onset of back pain. An X-ray is performed which reveals thoracic compression fractures at T6 and T10. FBE is within normal limits. U&E are also within normal limits, as is serum calcium level. Serum electrophoresis reveals no paraprotein band. Serum immunoglobulins are marginally reduced. Bone density reveals a lumbar t-score of -4, and a hip t-score of -2. What is the next most appropriate investigation?

- A. Vertebral bone biopsy
- \* B. Urinary electrophoresis
- C. Bone scan
- D. MRI of thoracic spine
- E. 24 hour urinary calcium excretion estimation

12. A 66 year old man presents with a history of 4 weeks of headache, loss of libido, lethargy and 6kg of weight loss with loss of appetite. He has also noted that he has become increasingly constipated. But has not noticed any rectal blood loss. On examination he has a BP of 95/50mmHg. Investigation reveals a reduced T4 level, reduced TSH, and reduced testosterone concentration. His ACTH is in the low-normal range. Prolactin is 2700ng/ml (normal <20ng/ml). A MRI is performed.



What is the most appropriate management after commencing thyroxine and cortisone?

- A. Transfrontal surgery
- B. Transphenoidal surgery
- C. Cranial irradiation
- D. Testosterone implants
- E. Bromocriptine therapy

13. What is the best way to differentiate central diabetes insipidus from psychogenic polydipsia?

- A. Low urine osmolality with diabetes insipidus
- B. Low serum osmolality with diabetes insipidus
- C. Failure to concentrate urine with prolonged water deprivation
- D. Decrease in urine osmolality with anti-diuretic hormone replacement in diabetes insipidus
- E. Decrease in urine osmolality with anti-diuretic hormone replacement in psychogenic polydipsia

14. A man is found to have a mildly elevated calcium 2.6mmol/l and a mildly elevated PTH. His mother, who is in her 80's, has also been previously found to have an elevated calcium level also and is asymptomatic. She has never received any treatment for her elevated calcium. He does not have a history of renal calculi. Next most appropriate investigation?

- A. Parathyroid nuclear scan
- B. Urinary calcium excretion
- C. Gene studies
- D. Surgery to remove parathyroid adenoma
- E. PTHrP measurement

FHM

15. In sick euthyroid syndrome the least likely finding is:

- A. Increased TSH

- B. Decreased TSH
- C. Decreased free T4
- D. Decreased free T3
- E. Reduced albumin

16. The most powerful stimulant of aldosterone secretion is:

- \* A. An increased potassium level
- B. ACTH (pulsatile fashion)
- C. Atrial natriuretic peptide
- D. Angiotensin II
- E. Hyponatraemia

← K<sup>+</sup> (zona glomerulosa)  
ACTH  
renin / aldosterone

17. Which enzyme defect is most likely to cause severe hyperuricaemia?

- A. Xanthine oxidase deficiency
- B. Adenosine deaminase deficiency
- C. Hexosaminase deficiency
- D. Hypoxanthine-guanine phosphoribosyl transferase deficiency
- E. Phosphoribosyl pyrophosphate deficiency