

# Multiple Choice Questions

## Chapter 1

1. What percentage of people with type 1 diabetes can be expected to have diabetic retinopathy at diagnosis?
  - A 85–100 per cent
  - B 37–84 per cent
  - C 20–37 per cent
  - D 2–19 per cent
  - E <2 per cent
2. What percentage of people with type 2 diabetes can be expected to have diabetic retinopathy present at the time of diagnosis of diabetes?
  - A 85–100 per cent
  - B 37–84 per cent
  - C 20–37 per cent
  - D 2–19 per cent
  - E <2 per cent
3. Which of these statements about treating diabetic eye disease is false?
  - A The use of angiotensin-converting enzyme Inhibitors is contraindicated.
  - B Laser therapy can usually be performed as an outpatient procedure.
  - C Laser therapy gives a better result in proliferative eye disease than in maculopathy.
  - D Worsening maculopathy is a risk of cataract extraction.
  - E Panretinal photocoagulation can affect ability to drive.

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4. Which of these is not a feature of R1M0/background diabetic retinopathy?
- A Hard exudates
  - B Microaneurysms
  - C Venous beading
  - D 'Dot' haemorrhages
  - E 'Blot' haemorrhages

## Chapter 2

1. Which one of the following medications does not require a dose reduction in the setting of reduced GFR and/or is contraindicated if GFR  $<60$  ml/min per  $1.73$  m<sup>2</sup>?
- A Sitagliptin
  - B Fenofibrate
  - C Metformin
  - D Atorvastatin
  - E Exenatide
2. Which of the following is not true with regard to statin use in people with diabetic CKD?
- A Statins reduce cardiovascular events in people with diabetes and CKD stages I–IV.
  - B Statins in combination with ezetrol are not contraindicated in people with CKD.
  - C Statins reduce CV events in people with end-stage renal disease (ESRD).
  - D People with microalbuminuria should generally be on a statin.
  - E The combination of a statin and a fibrate is not contraindicated in people with reduced GFR.
3. With regard to microalbuminuria, which one of the following statements is false?
- A Lack of microalbuminuria does not exclude renal disease.
  - B Microalbuminuria is a marker of increased risk for cardiovascular disease.
  - C All patients with microalbuminuria will progress to more advanced stages of CKD.
  - D Microalbuminuria may remit to normoalbuminuria without any specific intervention.
  - E Microalbuminuria refers to detectable but low concentrations of albumin in urine.

4. With regard to blood pressure control in people with diabetes and CKD, which of the following is not true?
- A ACE inhibitors and angiotensin receptor blockers (ARBs) are equally effective in reducing albuminuria.
  - B The combination of an ACE inhibitor and an ARB confers renal protection over and above the use of each agent alone.
  - C The general blood pressure target for people with diabetic CKD and proteinuria is <125/75 mmHg.
  - D The optimal BP target for preventing progression of CKD is not established.
  - E In patients treated with ARBs, implementing salt restriction confers further benefits in terms of BP reduction.
5. With regard to assessment of renal function in people with diabetes, which of the following is true?
- A An eGFR derived from an MDRD formula significantly underestimates GFR in the normal range.
  - B A decline in GFR is always preceded by a rise in albuminuria.
  - C Cystatin C is not a more accurate measure of renal function than creatinine for people with GFR levels in the normal range.
  - D Albuminuria can be accurately estimated from one spot ACR measurement.
  - E Acute hyperglycaemia has no effect on albuminuria.

### Chapter 3

1. NAFLD confers a higher risk of all of the following except:
- A Hepatocellular carcinoma
  - B Cardiovascular disease
  - C Advanced liver disease
  - D Autoimmune hepatitis
2. The gold standard for assessing the extent of steatohepatitis and cirrhosis in patients with suspected fatty liver disease is:
- A Fibroscan
  - B Laboratory values
  - C Liver biopsy
  - D Abdominal MRI
3. Aggressive weight loss via dietary modifications or bariatric surgery is recommended for all patients with NAFLD.
- A True
  - B False

**Chapter 4**

1. A 57-year-old man presents for evaluation of long-standing diabetes. He has had type 2 diabetes mellitus for 25 years. He has developed severe peripheral neuropathy and has a difficult time keeping his blood sugar <250 mg/dl. Over the last 2 years he has had continuous diarrhoea and has lost 18 kg (40 lb). He has frequent bouts of faecal incontinence. His 48-hour stool collection yielded a faecal fat output of 20 g/24 h. Probable causes for this picture include all of the following EXCEPT:
  - A Diabetic neuropathy
  - B Excessive sorbitol ingestion
  - C Small bowel bacterial overgrowth
  - D Coeliac disease
  - E Pancreatic exocrine insufficiency
  
2. A 35-year-old woman with a 15-year history of diabetes presents with nausea, vomiting, early satiety and weight loss of 9 kg (20 lb) in the past year. She reports often vomiting food eaten 1 or 2 days previously. She has hyperglycaemia (glucose 238 mg/dl), glycated Hb 8.5%, proteinuria (4 g/24 h), and serum albumin 2.4 g/dl, total cholesterol 445 mg/dl and creatinine 1.7 mg/dl. The most likely diagnosis is:
  - A Emesis secondary to uraemia.
  - B Diabetic gastroparesis with malnutrition
  - C Diabetic gastroparesis with nephrotic syndrome
  - D Chronic pancreatitis and malnutrition secondary to hyperlipidaemia
  - E *H. pylori* infection without ulceration
  
3. In the patient described in question 2, upper gastrointestinal endoscopy shows the presence of retained undigested food, and no evidence of ulceration, or pyloric obstruction. A CLO test on a gastric mucosal sample is positive. The most appropriate test to assess the cause of the vomiting is:
  - A No tests, but eradication of *H. pylori* and review after 6 weeks
  - B Gastric emptying test for solids or solids and liquids
  - C Brain MRI including special 'cuts' to visualize vagal nuclei
  - D CCK-secretin-stimulated measurement of pancreatic exocrine function
  - E Antropyloroduodenal manometry or, if unavailable, autonomic function test and surface electrogastronomy

4. A 48-year-old man with a 17-year history of diabetes presents with a 2-year history of chronic diarrhoea: watery to loose, occasionally nocturnal, no blood, no mucus, rarely floats or contains undigested food. His diarrhoea did not improve when he was given a broad-spectrum antibiotic for a chest infection. He noted no difference when on a gluten-free diet. Quantitative faecal fat output is within normal limits. Abdominal and rectal exams are normal. His chart includes his HLA haplotype (A1B8). What is his most likely diagnosis?
- A Coeliac disease
  - B Chronic pancreatic insufficiency
  - C Diabetic diarrhoea
  - D Bacterial overgrowth
  - E Pudendal neuropathy secondary to longstanding diabetes

## Chapter 5

1. How common is foot ulceration in the diabetic population?
- A Between 1 and 2 per cent
  - B Between 5 and 7.4 per cent
  - C Between 10 and 20 per cent
  - D Less than 1 per cent
2. What is a common precipitating factor for tissue damage in the ischaemic foot?
- A Bony fractures
  - B Minor trauma, e.g. from ill-fitting footwear
  - C Arterial embolism
  - D Raised cholesterol
3. In a patient with diabetes and neuropathy with a warm red mid-foot, the most important condition to consider is:
- A Gout
  - B Septic arthritis
  - C Fungal infection
  - D Acute Charcot disease
4. The following symptoms suggest neuropathic pain:
- A Pain predominantly at night worsened by contact with bedsheets
  - B Burning sensations in the feet punctuated by sharp electric-shock pains
  - C Continuous pain or discomfort not relieved by traditional analgesics
  - D All of the above

**Chapter 6**

1. A diagnosis of diabetic autonomic neuropathy can be confirmed by:
  - A Abnormal heart rate response to Valsalva's manoeuvre
  - B Abnormal expired to inspired heart rate ratio
  - C Abnormal blood pressure response to standing
  - D Evidence of delayed gastric emptying
  - E None of the above
  
2. The following test predominantly parasympathetic nerve function:
  - A Abnormal heart rate response to Valsalva's manoeuvre
  - B Abnormal expired:inspired heart rate ratio
  - C Abnormal blood pressure response to standing
  - D Dark-adapted pupil diameter
  - E Low frequency heart rate variability
  
3. The following are typical features of diabetic diarrhoea:
  - A Painful symptoms
  - B More troublesome during the day
  - C Often associated with faecal incontinence
  - D Ameliorated by therapy with metformin
  - E May alternate with periods of constipation
  
4. Treatment of gastroparesis includes:
  - A Domperidone
  - B Propantheline bromide
  - C GLP-1 analogues
  - D Antiemetics such as prochlorperazine
  - E Loperamide

**Chapter 7**

1. Which of the following is not involved in tumescence?
  - A The sympathetic nervous system
  - B The corpus cavernosum
  - C The helicine artery
  - D Cyclic GMP
  - E Dopamine
  
2. Oral phosphodiesterase type 5 (PDE-5) inhibitors should be avoided in patients taking
  - A An angiotensin II receptor blocker
  - B A potassium channel activator

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- C A  $\beta$  blocker
  - D A  $\alpha_1$  blocker
  - E A thiazide diuretic
3. In patients who develop priapism after intracavernosal injection therapy, which option would you not recommend in trying to achieve detumescence?
- A Aspiration of blood from the corpus cavernosum
  - B Using an exercise bike
  - C The application of ice packs around the penis
  - D  $\alpha_1$  Blockers
  - E Surgical shunt procedures
4. Which of the following statements is true?
- A A therapeutic trial of testosterone can be used in any patient with erectile dysfunction and decreased libido.
  - B The effects of oral PDE-5 inhibitors are enhanced by alcohol consumption.
  - C Patients with angina should not be treated for erectile dysfunction.
  - D Penile Doppler studies are a useful test in most cases of erectile dysfunction.
  - E Enhancement of cyclic AMP availability is a pharmacological pathway that is used for the treatment of erectile dysfunction.

**Chapter 8**

1. In type 2 diabetes, heart failure:
- A Presents more commonly in men
  - B Is best treated by coronary revascularization
  - C Occurs independently of hypertension and coronary artery disease
  - D Is improved with glitazone therapy
2. Hypertension and diabetes:
- A Is more common with type 1 than type 2 diabetes
  - B Is greater when microalbuminuria is detected
  - C Blood pressure treatment does not reduce risk of developing future microvascular complications
  - D  $\beta$  Blockers are first-line treatment
3. Insulin deficiency is associated with:
- A Increased triglycerides
  - B Increased lipoprotein lipase activity
  - C Reduced LDL-cholesterol susceptibility to oxidation
  - D Improved lipid status with nephropathy

4. Glycaemic control and diabetes:
- A Intensified blood glucose control improves life expectancy
  - B Hyperglycaemia occurs in more than one in four patients with acute coronary syndrome
  - C Insulin is the first choice of glucose-lowering therapy in heart failure
  - D Is the top priority in multifactorial intervention

## Chapter 9

1. Cognitive function impairment as a result of acute hypoglycaemia:
- A Occurs only when symptoms of hypoglycaemia are present
  - B Occurs in everyone at approximately 3 mmol/l
  - C Does not occur in those patients with a recurrent hypoglycaemic experience
  - D Generally only returns to normal 30–40 minutes after the return of euglycaemia
2. The following are recognized risk factors for stroke in diabetes:
- A Atrial fibrillation
  - B Hypertension or hyperlipidaemia
  - C Recurrent hypoglycaemia
  - D Type 2 rather than type 1 diabetes
3. Which of the following statements are true?
- A Type 1 diabetes is a risk factor in the development of haemorrhagic stroke.
  - B Avoidance of treatment-associated hypoglycaemia necessarily increases an individual's exposure to hyperglycaemia and thus increased long-term risk.
  - C Children under the age of 5 years are less at risk of long-term risks from hypoglycaemia because of the increased brain plasticity of youth.
  - D Blood glucose levels measured at admission to hospital in patients with cerebrovascular disease have no impact on the outcome of the admission.

## Chapter 10

1. Which of the following may be used to assess depression in a person with diabetes?
- A HADS rating score
  - B PANSS rating score

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- C** PHQ-9 questionnaire
  - D** Diagnostic interview
  - E** Serum cortisol
2. Which of the following statements about the relationship between diabetes and depression are TRUE?
- A** The risk of diabetes is increased two- to threefold in people with depression.
  - B** The risk of depression is decreased in people receiving insulin compared with people treated with oral hypoglycaemic agents.
  - C** Painful neuropathy increases the risk of depression.
  - D** Antidepressants improve mild depression in people with diabetes.
  - E** Psychotherapy is associated with improved glycaemic control as well as improvements in depressive symptoms in people with diabetes and depression.
3. Which of the following factors explains the increase in diabetes in people with schizophrenia?
- A** Genetics
  - B** High birthweight
  - C** Poor nutrition
  - D** Antipsychotic medication
  - E** Physical inactivity
4. Which of the following is true about screening for cardiovascular risk factors in people with severe mental illness?
- A** The rate of undiagnosed diabetes is the same as the general population.
  - B** Screening should be undertaken before the initiation of antipsychotic medication.
  - C** Screening is more likely to occur in people with severe mental illness compared with the general population.
  - D** Screening should be undertaken only in people over the age of 40 years as for the rest of the population.
  - E** Cardiovascular risk tables have been validated in people with severe mental illness.

**Chapter 11**

1. What is the most likely explanation for the arthritis of the patient in case study 1?
- A** Scleroderma
  - B** Adult-onset Still's disease

- C** Haemochromatosis
  - D** Gout
2. The most likely explanation of the right hand symptoms of the patient in case study 2 is:
- A** Diabetic polyneuropathy
  - B** Overuse/repetitive-strain syndrome
  - C** Carpal tunnel syndrome
  - D** Alcoholic neuropathy
  - E** None of the above
3. What is the next step in the management of the symptoms of the patient in case study 3?
- A** Shoulder immobilization
  - B** Aggressive physical therapy to regain range of motion
  - C** Manipulation of his shoulder under anaesthesia
  - D** Pain control
  - E** Intra-articular injection with steroids

## **Chapter 12**

1. What percentage of the general UK adult population has advanced periodontitis?
- A** 0–5 per cent
  - B** Approximately 10 per cent
  - C** Approximately 30 per cent
  - D** >50 per cent
2. What magnitude of reduction in mean HbA1c has been reported in meta-analyses of studies that investigated the impact of periodontal treatment on glycaemic control?
- A** <0.1 per cent
  - B** 0.4 per cent
  - C** 1.0 per cent
  - D** 1.4 per cent
3. What systemic medication has been licensed as an adjunctive treatment for the management of periodontitis?
- A** Aspirin 75 mg once daily indefinitely
  - B** Amoxicillin 250 mg three times daily for 7 days
  - C** Doxycycline 20 mg twice daily for 12 weeks
  - D** Metronidazole 400 mg three times daily for 7 days

### Chapter 13

1. A 28-year-old woman with type 1 diabetes has a 1-year history of an erythematous to yellow, asymptomatic, non-scaly, slightly atrophic plaque on her shin. What is the most likely diagnosis?
  - A Eczema
  - B Psoriasis
  - C Necrobiosis lipoidica
  - D Lichen planus
  - E Actinic porokeratosis
  
2. A 60-year-old man with insulin-treated type 2 diabetes and known hypertension and ischaemic heart disease keeps getting recurrent bilateral lower leg erythema on a basis of persistently swollen ankles. Though his legs are itchy he feels well in himself. What could be contributing to his condition?
  - A His calcium antagonist medication for his blood pressure
  - B Bilateral cellulitis
  - C Eczema
  - D Psoriasis
  - E Lipodermatosclerosis
  
3. A 35-year-old man presents feeling tired with nocturia and a rapid onset of yellow papules clustered over his elbows and buttocks. What could be contributing to his presentation?
  - A New-onset diabetes
  - B Hypertriglyceridaemia
  - C If he had a familial defective apolipoprotein B-100
  - D His known apolipoprotein CII deficiency
  - E His familial combined hypercholesterolaemia
  - F The fact that he lives on crisps and non-diet cola drinks and multivitamins.

### Chapter 14

1. Which of the following has not been consistently associated with diabetes in epidemiological studies?
  - A Pancreatic cancer
  - B Colorectal cancer
  - C Leukaemia
  - D Liver cancer
  - E Endometrial cancer

2. Which of the following is true about insulin-like growth factor I?
- A** IGF-I is a binding protein that influences cell growth and survival.
  - B** IGF-I is involved in cell proliferation and differentiation.
  - C** IGF-I is primarily produced in the liver.
  - D** Serum levels of IGF-I vary widely between individuals.
  - E** All of the above.
3. Which of the following is true about the treatment of cancer patients with comorbid diabetes?
- A** Serious side effects have been described among head and neck cancer patients treated with certain drug regimens.
  - B** Cancer chemotherapeutic agents may worsen pre-existing renal insufficiency due to diabetic nephropathy.
  - C** Patients with diabetes or hyperglycaemic who undergo cancer treatment may be more likely to experience infections leading to sepsis.
  - D** All of the above.
  - E** None of the above.