European Board of Gastroenterology & Hepatology - Sample Questions

Question: 1

A 50-year-old man presented with haematemesis and melaena. He had a history of excess alcohol intake for many years. On examination, he was jaundiced with bilateral parotid enlargement, spider naevi and Dupuytren's contractures. His pulse was 100 beats per minute and his blood pressure was 95/60 mmHg. He had ascites and peripheral oedema.

While awaiting endoscopy, what is the most appropriate management?

A insert a Sengstaken–Blakemore tube
B intravenous pantoprazole
C intravenous terlipressin
D nasogastric tube and aspiration
E oral sucralfate

Question: 2

A 67-year-old man with dysphagia was found at endoscopy to have lower oesophageal carcinoma.

For staging of local invasion in oesophageal cancer, which investigation is most sensitive?

A contrast-enhanced CT scan of oesophagus
B laparoscopy
C MR scan of chest
D PET scan
E radial endoscopic ultrasound scan

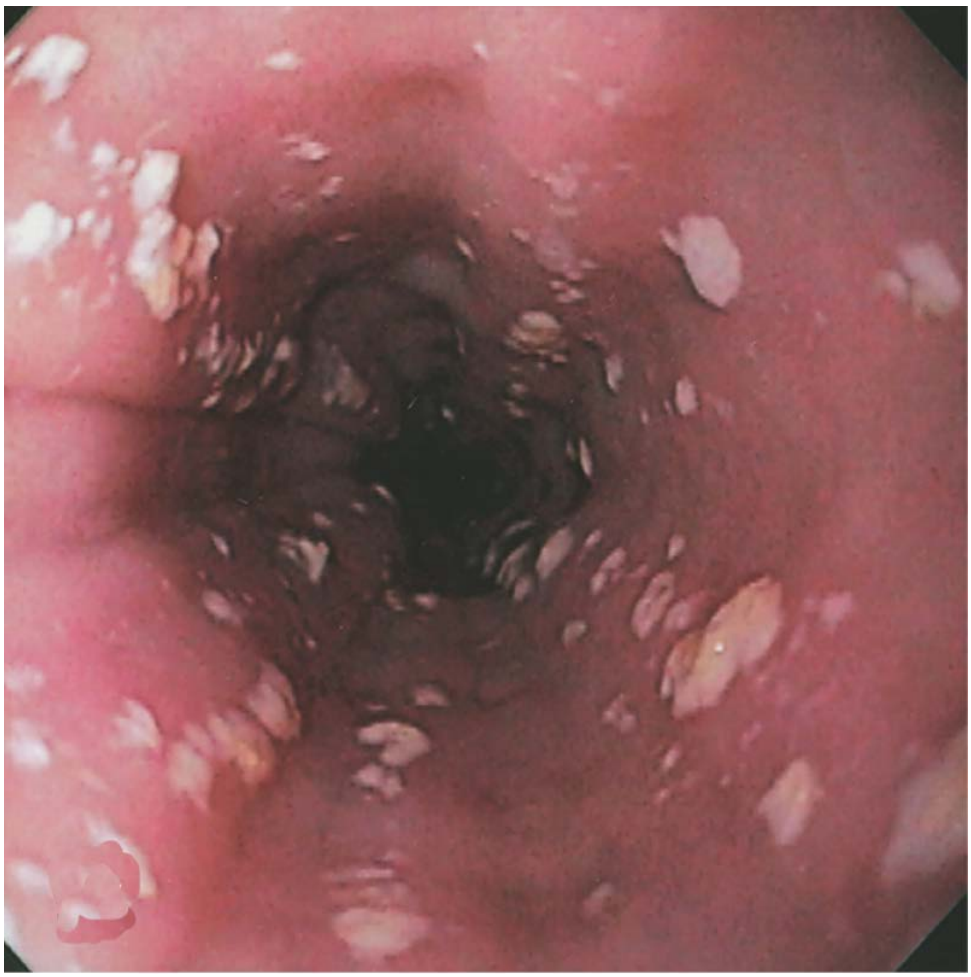
Question: 3

A 46-year-old man presented with a 2-month history of fatigue and dysphagia. He also reported night sweats and weight loss. He did not smoke and drank only occasional alcohol.

On examination, he appeared thin and had several enlarged lymph nodes in both axilla. Abdominal examination was normal.

Investigations:

chest X-ray	normal
upper gastrointestinal endoscopy	see image



What is the most appropriate next investigation?

A bone marrow aspirate
B CT scan of abdomen
C HIV serology
D lymph node biopsy
E tuberculin test

Question: 4

A 55-year-old man with Crohn's disease underwent an ileocaecal resection. The surgical procedure was technically straightforward. Three months later, he was reviewed in the clinic. His appetite remained good and the abdominal pain had settled, but he was troubled by diarrhoea with a daytime stool frequency of six per day. He also experienced faecal urgency 20–40 minutes after eating. The stool was watery but there was no blood or pus.

Investigations:

haemoglobin	125 g/L (130–180)
white cell count	5.6×10^9/L (4–11)
platelet count	256×10^9/L (150–400)
erythrocyte sedimentation rate	12 mm/1st h (<20)
serum vitamin B_{12}	340 ng/L (160–760)
red cell folate	420 µg/L (160–640)
serum C-reactive protein	8 mg/L (<10)

What is the most likely cause for the diarrhoea?

A bacterial overgrowth
B bile salt malabsorption
C enterocolic fistula
D lactase deficiency
E recurrent Crohn's disease

Question: 5

A 44-year-old man presented with a 10-year history of ulcerative colitis. He was taking azathioprine 1.5 mg/kg and mesalazine 2.4 g daily. He reported that his bowels opened one to two times per day, with no rectal bleeding.

Investigations:

haemoglobin	106 g/L (130–180)
MCV	75 fL (80–96)
platelet count	164 $\times$ 10^9/L (150–400)
serum total bilirubin	43 µmol/L (1–22)
serum alanine aminotransferase	76 U/L (5–35)
serum alkaline phosphatase	328 U/L (45–105)
serum gamma glutamyl transferase	397 U/L (<50)
rigid sigmoidoscopy	quiescent colitis

What is the most appropriate next investigation?

A colonoscopy
B faecal calprotectin
C MR cholangiopancreatography
D ultrasound scan of liver
E upper gastrointestinal endoscopy

Question: 6

A 68-year-old man was found to have positive faecal occult blood tests (FOBT) in a national bowel cancer screening programme. He was offered colonoscopy, but before making his decision he wanted to know what the chances were of actually having a colonic carcinoma.

What is the likelihood of colonic carcinoma in a patient of this age with a positive FOBT?

A 2%
B 8%
C 16%
D 24%
E 48%

Question: 7

A 56-year-old man with established cirrhosis secondary to genetic haemochromatosis was found to have a 3-cm focal lesion in the right lobe of his liver at a surveillance ultrasound scan of his abdomen. When reviewed in the outpatient clinic he was well with no new symptoms.

Investigations:

international normalised ratio	1.3 (<1.4)
serum albumin	32 g/L (37–49)
serum total bilirubin	37 μmol/L (1–22)
serum alanine aminotransferase	23 U/L (5–35)
serum alkaline phosphatise	125 U/L (45–105)
serum α-fetoprotein	8 kU/L (<10)

What is the most appropriate next step in management?

A further surveillance screening in 6 months
B referral for consideration of resection of hepatic lesion
C repeat ultrasound scan of liver in 6 weeks
D triple-phase CT scan of liver
E ultrasound scan-guided biopsy of lesion

Question: 8

A 29-year-old woman who was 32 weeks pregnant presented to the accident and emergency department with a 2-week history of malaise, nausea and vomiting.

On examination, there were no stigmata of chronic liver disease, her pulse was 100 beats per minute and her blood pressure was 160/94 mmHg. She had right upper quadrant tenderness and peripheral oedema.

Investigations:

haemoglobin	110 g/L (115–165)
platelet count	68×10^9/L (150–400)
international normalised ratio	1.7 (<1.4)
blood film	schistocytes, spherocytes
serum total bilirubin	74 µmol/L (1–22)
serum alanine aminotransferase	176 U/L (5–35)
serum aspartate aminotransferase	260 U/L (1–31)
serum alkaline phosphatase	230 U/L (45–105)
serum lactate dehydrogenase	720 U/L (10–250)

What is the most likely diagnosis?

A acute fatty liver of pregnancy
B Budd–Chiari syndrome
C HELLP syndrome
D hepatitis E
E intrahepatic cholestasis of pregnancy

Question: 9

A 68-year-old woman was referred for investigation of iron deficiency anaemia. She was taking warfarin for atrial fibrillation.

On examination, she had atrial fibrillation with a ventricular rate of 76 beats per minute. No other abnormality was detected.

Investigations:

international normalised ratio	2.1 (<1.4)
coeliac serology	positive
echocardiography	normal left ventricular systolic function; no valvular abnormality

Upper gastrointestinal endoscopy to obtain duodenal biopsies was planned.

What is the most appropriate plan for anticoagulation before this endoscopy?

A no alteration of therapy
B stop warfarin
C substitute aspirin for warfarin
D substitute clopidogrel for warfarin
E substitute low-molecular-weight heparin for warfarin

Question 10

Vitamin B_{12} (cobalamin) is an essential co-factor and co-enzyme in many biochemical reactions, including synthesis of DNA, methionine and succinyl Co-A. Vitamin B_{12} deficiency causes anaemia, neurological disease, dementia and osteoporosis.

What is the most important physiological factor in ensuring adequate cobalamin uptake?

A bile acid secretion
B duodenal absorption
C high gastric pH
D pancreatic protease secretion
E transcobalamin-1 binding

Question 11

A 23-year-old woman was referred to the gastroenterology clinic with mild iron deficiency anaemia. There were no gastrointestinal symptoms and no history of menorrhagia. She was a vegan and her diet contained large quantities of wholewheat, soy and bran, as well as one or two cups of herbal tea per day.

Examination was normal.

What dietary component is most likely to be contributing to her anaemia?

A ascorbic acid
B phytates
C polyphenols
D sulfates
E tannins

Question 12

A 60-year-old man with a 35-year history of well-controlled ulcerative colitis was seen for review. His maintenance treatment was sulfasalazine.

On what does the mechanism of action of sulfasalazine depend?

A cleavage of 5-ASA dimers by colonic bacteria
B cleavage of an azo bond by colonic bacteria
C pH-dependent release in the ileocaecal region
D slow release in the small and large intestine through an ethylcellulose coating
E timed release following alkalinisation in the duodenum

Question 13

A 61-year-old man with biopsy-proven alcoholic cirrhosis was admitted with increasing breathlessness, abdominal distension and ankle oedema. He had noticed that he was passing very little urine.

On examination, his temperature was 38.0°C and his blood pressure was 96/45 mmHg. He had signs of chronic liver disease, mild peripheral oedema and moderate ascites.

Investigations:

haemoglobin	106 g/L (130–180)
MCV	108 fL (80–96)
white cell count	14.9×10^9/L (4.0–11.0)
platelet count	67×10^9/L (150–400)
serum sodium	121 mmol/L (137–144)
serum potassium	3.1 mmol/L (3.5–4.9)
serum creatinine	387 µmol/L (60–110)
serum albumin	24 g/L (37–49)

Following appropriate fluid resuscitation, terlipressin and albumin should be given until what end point?

A discharge
B normalisation of portal pressure
C normalisation of serum creatinine
D normalisation of serum sodium
E normalisation of urine output

Question 14

A 28-year-old woman attended a maternity clinic when 37 weeks pregnant with her first child. She complained of upper abdominal pain, nausea and vomiting.

On examination, she was drowsy. Her pulse was 105 beats per minute, and her blood pressure was180/125 mmHg. Urinalysis showed protein 3+.

Investigations:

haemoglobin	113 g/L (115–165)
platelet count	164 $\times$ 10^9/L (150–400)
international normalised ratio	1.1 (<1.4)
serum total protein	65 g/L (61–76)
serum albumin	32 g/L (37–49)
serum total bilirubin	25 µmol/L (1–22)
serum alanine aminotransferase	61 U/L (5–35)
serum aspartate aminotransferase	63 U/L (1–31)
serum alkaline phosphatase	183 U/L (45–105)

What is the most appropriate treatment?

A caesarean section
B intravenous hydrocortisone
C oral colestyramine
D oral prednisolone
E oral ursodeoxycholic acid

Question 15

A 34-year-old man with hepatitis C attended for review after treatment for 12 weeks with peginterferon and ribavirin co-therapy. He complained of malaise and irritability. Investigations before treatment had confirmed hepatitis C infection with genotype 1a and a viral load of 1.3×10^6 IU/mL (lower detection limit 15). There was no evidence of cirrhosis.

Investigations:

haemoglobin	116 g/L (130–180)
platelet count	65×10^9/L (150–400)
neutrophil count	0.72×10^9/L (1.5–7.0)
serum albumin	34 g/L (37–49)
serum total bilirubin	19 µmol/L (1–22)
serum alanine aminotransferase	29 U/L (5–35)
serum alkaline phosphatase	95 U/L (45–105)
hepatitis C viral load	none detected

What is the most appropriate next step in management?

A continue same treatment
B platelet transfusion
C reduce peginterferon
D reduce ribavirin
E stop treatment

Question 16

A 43-year-old woman presented with profuse watery non-bloody diarrhoea. She had a 5-year history of type 2 diabetes mellitus, now requiring insulin. She had no abdominal pain but did feel bloated. She had a past history of reflux oesophagitis and osteoarthritis for which she was taking lansoprazole and ibuprofen.

Examination was normal.

Investigations:

haemoglobin	109 g/L (115–165)
MCV	99 fL (80–96)
white cell count	4.5×10^9/L (4.0–11.0)
platelet count	169×10^9/L (150–400)
serum ferritin	120 µg/L (15–300)
serum vitamin B_{12}	145 ng/L (160–760)
serum folate	20.0 µg/L (2.0–11.0)

What is the most likely diagnosis?

A bacterial overgrowth
B bile salt malabsorption
C giardiasis
D irritable bowel syndrome
E microscopic colitis

Question 17

A 64-year-old woman presented with a 3-year history of intermittent diarrhoea. She was otherwise well and had not lost weight. She had a past medical history of osteoarthritis, which had been treated with naproxen. Treatment with loperamide had not improved her bowel symptoms.

On examination, she looked well. She had a body mass index of 34 kg/m^2 (18–25).

Investigations:

colonoscopy	normal
histology from colonic biopsies	a mononuclear infiltrate with a few neutrophils and eosinophils in the lamina propria

Stopping naproxen did not improve her symptoms.

What is the most appropriate next step in management?

A budesonide
B colestyramine
C octreotide
D prednisolone
E sulfasalazine

Question 18

A 43-year-old man with acromegaly was referred for colonoscopy. Pan-colonoscopy with terminal ileal intubation was achieved. A solitary, sessile, 5-mm polyp was found in the transverse colon. This was removed completely. Histology revealed a tubular adenoma with low-grade dysplasia.

Investigations:

haemoglobin	144 g/L (130–180)
platelet count	254×10^9/L (150–400)
serum insulin-like growth factor 1	30.3 nmol/L (5.6–23.3)

After how long should he undergo further colonoscopy?

A 1 year
B 2 years
C 3 years
D 5 years
E 10 years

Question 19

The portal vein is formed by the confluence of which veins?

A hepatic and superior mesenteric
B inferior and superior mesenteric
C splenic and hepatic
D splenic and renal
E splenic and superior mesenteric

Question 20

A 61-year-old man with Barrett's oesophagus was found to have high-grade dysplasia in four out of eight biopsies taken from the Barrett's segment. He had residual mild left-sided weakness from a cerebrovascular accident 2 years previously. A further upper gastrointestinal endoscopy was arranged and similar histological features were reported.

Investigations:

CT scan of thorax and abdomen	normal

What is the most appropriate management?

A high-dose proton pump inhibitor
B intensified endoscopic surveillance
C laser ablation of Barrett's segment
D photodynamic therapy
E radio-ablation of Barrett's segment

Question 21

A 32-year-old man attended for follow-up 2 months after presenting with a bleeding duodenal ulcer. As part of his treatment, he had been given a course of Helicobacter pylori eradication therapy, and had continued taking the proton pump inhibitor until 4 weeks before his appointment.

Which is the most appropriate test to confirm eradication of Helicobacter pylori infection?

A gastric antral biopsy for culture
B gastric antral biopsy for histology
C gastric antral biopsy for rapid urease test
D Helicobacter pylori antibody in serum
E stool Helicobacter pylori antigen

Question 22

A 24-year-old woman presented with a 3-month history of lethargy, fatigue and weight loss. She had abdominal bloating and passed loose stools.

On examination, there were no abnormal findings.

Investigations:

haemoglobin	85 g/L (115–165)
platelet count	164×10^9/L (150–400)
MCV	70 fL (80–96)
white cell count	11.0×10^9/L (4.0–11.0)
serum ferritin	9 µg/L (15–300)
serum vitamin B_{12}	180 ng/L (160–760)
red cell folate	86 µg/L (160–640)
serum albumin	35 g/L (37–49)
serum immunoglobulin G	7.2 g/L (6.0–13.0)
serum immunoglobulin A	0.1 g/L (0.8–3.0)
serum immunoglobulin M	0.3 g/L (0.4–2.5)
anti-tissue transglutaminase antibodies	2 U/mL (<15)

What is the most appropriate next step in management?

A CT scan of abdomen
B distal duodenal biopsy
C faecal elastase estimation
D lactulose–hydrogen breath test
E small bowel barium studies

Question 23

A 75-year-old man with a dense right-sided hemiplegia and unsafe swallowing following a cerebrovascular accident was asked to give his consent to placement of a percutaneous endoscopic gastrostomy (PEG) feeding tube.

What is the expected 30-day all-cause mortality after PEG tube placement for this patient?

A 0.1%
B 1%
C 10%
D 25%
E 50%

Question 24

A 53-year-old man had been admitted with moderately severe pancreatitis 1 week previously. Despite regular analgesia and antiemetics, he remained nauseated and uncomfortable, with no appetite.

What is the most appropriate management of his nutrition?

A encourage oral intake
B nasogastric tube feeding
C oral elemental diet
D peripheral intravenous nutrition
E total parenteral nutrition

Question 25

A 23-year-old secretary presented with a 12-month history of intermittent epigastric and right upper quadrant pain occurring up to six times per month and lasting for 30 to 45 minutes. The most recent episode of pain had occurred 24 hours earlier. She had been obliged to leave work on several occasions and, during one episode, had presented to the emergency department. The symptoms were unrelated to diet, eating or bowel movement. Antacids had been unhelpful and she took codeine at home for the pain. She was otherwise well with no other history.

Examination was normal.

Investigations:

serum total bilirubin	22 µmol/L (1–22)
serum alanine aminotransferase	48 U/L (5–35)
serum aspartate aminotransferase	52 U/L (1–31)
serum alkaline phosphatase	200 U/L (45–105)
serum gamma glutamyl transferase	80 U/L (4–35)
ultrasound scan of abdomen	normal

What is the most appropriate next investigation?

A CT scan of abdomen
B ERCP
C HIDA scan
D MRCP
E repeat ultrasound scan when in pain

Question 26

A 64-year-old man was referred from the cardiac clinic. He had presented with increasing angina and a drug-eluting cardiac stent had been inserted. He had type 2 diabetes mellitus. His investigations had also revealed anaemia and he had been treated with ferrous sulfate. He was also taking metformin, clopidogrel, metoprolol and nicorandil.

Investigations:

haemoglobin	108 g/L (130–180)
serum ferritin	15 µg/L (15–300)
serum C-reactive protein	6 mg/L (<10)
colonoscopy	several ulcers in the colon
histology	non-specific inflammation

Which drug is most likely to be responsible for his colonic ulcers?

A clopidogrel
B iron
C metformin
D metoprolol
E nicorandil

Question 27

An 18-year-old man presented with a 5-day history of moderate abdominal pain, bloating, diarrhoea associated with mucus, and blood spotting on the toilet paper.

On examination, the abdomen was soft but he was mildly tender in both iliac fossae.

Flexible sigmoidoscopy showed mucosal erythema and congestion. Histological examination of rectal biopsies showed crypt abscesses, mucin depletion and normal crypt architecture with neutrophilic infiltration.

What is the most likely diagnosis?

A collagenous colitis
B Crohn's colitis
C infectious colitis
D microscopic colitis
E ulcerative colitis

Question 28

A 35-year-old man with corticosteroid-resistant Crohn's disease was treated with azathioprine. After 3 weeks he became severely leucopenic. Subsequent tests revealed an extremely low concentration of thiopurine methyltransferase (TPMT).

In approximately what proportion of the population does homozygous TPMT deficiency occur?

A 1 in 10
B 1 in 50
C 1 in 100
D 1 in 300
E 1 in 1000

Question 29

A 76-year-old woman was admitted with haematemesis and melaena. She was taking ibuprofen for osteoarthritis, but had no history of dyspepsia. There was a history of hypertension, severe chronic obstructive pulmonary disease and stroke.

On examination, she was comfortable, but rather pale and sweaty. Her pulse was 104 beats per minute and her blood pressure was 108/75 mmHg. Abdominal examination was normal.

Investigations:

haemoglobin	85 g/L (115–165)
serum urea	15.4 mmol/L (2.5–7.0)
serum creatinine	106 µmol/L (60–110)

What is her pre-endoscopy Rockall risk score for severity of upper gastrointestinal haemorrhage?

A 3
B 4
C 5
D 6
E 7

Question 30

A 35-year-old man was admitted with haematemesis. He had a 4-year history of chronic pancreatitis caused by excess alcohol. His stated alcohol intake over the previous 12 months was zero.

Investigations:

upper gastrointestinal endoscopy	normal oesophagus; abnormality in gastric fundus (see image)
ultrasound scan of abdomen	enlarged echogenic liver and pancreatic calcification

What is the most likely explanation of this presentation?

A hepatic cirrhosis
B hepatic vein thrombosis
C pancreatic pseudocyst
D portal vein thrombosis
E splenic vein thrombosis

Question 31

A 37-year-old man was referred from the haematology/oncology unit before starting treatment for non-Hodgkin's lymphoma. He was originally from Hong Kong.

Investigations:

serum albumin	31 g/L (37–49)
serum total bilirubin	19 µmol/L (1–22)
serum alanine aminotransferase	41 U/L (5–35)
serum alkaline phosphatase	155 U/L (45–105)
HBsAg	positive
HBeAg	negative
HBV DNA	2.2×10^4 copies/mL (lower detection limit 250)
liver biopsy modified Ishak score	necro-inflammatory score 1/18; fibrosis score 2/6

What is the most appropriate treatment of his hepatitis B during chemotherapy?

A adefovir
B interferon alfa
C no treatment indicated
D prednisolone
E tenofovir

Question 32

A 50-year-old man with type 2 diabetes mellitus and hypertension was referred because of abnormal liver function tests, loss of libido and tiredness. His medication included metformin and lisinopril. His alcohol consumption was 20 units per week.

On examination, he had sparse hair distribution. His liver was enlarged and palpable, and he had testicular atrophy.

Investigations:

haemoglobin	160 g/L (130–180)
platelet count	120 $\times$ 10^9/L (150–400)
prothrombin time	13.0 s (11.5–15.5)
serum ferritin	5230 µg/L (15–300)
serum albumin	32 g/L (37–49)
serum globulin	30 g/L (24–27)
serum total bilirubin	20 µmol/L (1–22)
serum alanine aminotransferase	60 U/L (5–35)
serum aspartate aminotransferase	105 U/L (1–31)
serum alkaline phosphatase	115 U/L (45–105)
serum α-fetoprotein	2 kU/L (<10)
ultrasound scan of abdomen	liver coarse and enlarged, but no bile duct dilatation

What investigation would give the most useful information regarding his prognosis?

A CT scan of abdomen
B echocardiography
C liver biopsy
D serum albumin
E serum ferritin

Question 33

A 76-year-old woman with a history of stroke had a percutaneous endoscopic gastrostomy (PEG) tube inserted. Four hours later, she complained of pain at the site of tube insertion.

On examination, her temperature was normal and her abdomen was soft and non-tender, but slightly distended. The wound was clean, dry and not hot to touch, but the surrounding skin felt as though it had air bubbles in it.

Erect X-rays of abdomen and chest showed free gas under both domes of the diaphragm and within the anterior abdominal wall.

What is the most likely diagnosis?

A benign pneumoperitoneum
B colonic perforation
C enterocutaneous fistula
D gastrocolic fistula
E necrotising fasciitis

Question 34

A 45-year-old man with a 15-year history of extensive ulcerative colitis underwent a surveillance colonoscopy. He had been well since his most recent colonoscopy 5 years previously. He had a normal bowel habit and was taking oral mesalazine only. His brother, who was 48, did not have inflammatory bowel disease, but had recently had a colorectal cancer resected.

The colonoscopy demonstrated quiescent changes, which were confirmed by the biopsies.

After what interval should a further colonoscopy be performed?

A 1 year
B 2 years
C 3 years
D 5 years
E 10 years

Question 35

A 28-year-old man was referred by the ENT surgeons after recurrent food bolus obstruction. He had a history of hay fever, mild asthma and bipolar disorder. He was taking venlafaxine, omeprazole and inhaled salbutamol.

On examination, there were no abnormal findings.

Investigations:

barium swallow	multiple rings and mucosal irregularities (see image)
oesophageal biopsy	severe oesophagitis with predominance of eosinophils

What is the most appropriate treatment?

A chlorphenamine
B fluticasone
C salmeterol
D sodium cromoglicate
E sucralfate

Question 36

A 54-year-old man attended the outpatient clinic with a single episode of rectal bleeding. During subsequent colonoscopy, which was completed to the terminal ileum, three polyps were identified and removed from the sigmoid, descending and transverse colon. They measured 0.8 cm, 1.2 cm and 1.5 cm, respectively. The sigmoid polyp was sessile, whereas the others were pedunculated on short stalks. Histology confirmed them all to be low-grade dysplastic tubulovillous adenomas and fully excised.

What is the most appropriate time interval for colonoscopic surveillance?

A 6 months
B 1 year
C 2 years
D 3 years
E 5 years

Question 37

A 64-year-old man presented with jaundice and was found to have a carcinoma of the head of pancreas. He had undergone an aortic valve replacement and was taking warfarin. An ERCP and placement of a biliary stent was planned in 2 days' time.

Investigations:

international normalised ratio	3.0 (<1.4)

What is the most appropriate management of his anticoagulation?

A continue warfarin
B give intravenous vitamin K 2 mg
C stop warfarin
D stop warfarin and start intravenous unfractionated heparin
E stop warfarin and start low-molecular-weight heparin

Question 38

A 56-year-old woman with a 3-year history of ulcerative colitis presented with an increasing number of relapses that had responded well to oral prednisolone. Her past medical history included hypertension, and recurrent urinary tract infections. She was taking ramipril 5 mg daily and mesalazine 1.6 g daily in divided doses. A decision was made to treat her with azathioprine therapy as a corticosteroid-sparing agent.

Investigations:

haemoglobin	114 g/L (115–165)
white cell count	8.3×10^9/L (4.0–11.0)
neutrophil count	3.1×10^9/L (1.5–7.0)
platelet count	456×10^9/L (150–400)
serum creatinine	135 µmol/L (60–110)
serum albumin	32 g/L (37–49)
serum C-reactive protein	16 mg/L (<10)

What is the most useful test for monitoring toxicity in patients taking azathioprine?

A erythrocyte 6-thioguanine nucleotide concentration
B erythrocyte thiopurine methyltransferase activity
C microalbuminuria
D serum alanine aminotransferase concentration
E white cell count

Question 39

A 49-year-old man presented with abdominal pain.

On examination, there was hepatosplenomegaly.

Investigations:

serum iron	48 µmol/L (12–30)
serum ferritin	2055 µg/L (15–300)
transferrin saturation	82% (20–50)

What abnormality is most likely to be detected in his HFE gene?

A C282Y and H63D heterozygosity
B C282Y heterozygosity
C C282Y homozygosity
D H63D heterozygosity
E H63D homozygosity

Answers:

1: C

There should be a high index of suspicion of a variceal bleed in this man who is shocked and has stigmata of chronic liver disease. In addition to resuscitation, intravenous terlipressin is the most appropriate treatment to reduce portal pressure whilst awaiting endoscopy.

2: E

Endoscopic ultrasound is the most sensitive modality for local staging of oesophageal carcinoma. CT and CT-PET are modalities for assessing the presence of distant metastases.

3: C

The image shows oesophageal candidiasis, which should always alert the physician to the possibility of underlying immunodeficiency (in the absence of inhaled corticosteroids). Additional pointers in this patient are systemic symptoms and axillary lymphadenopathy.

4: B

Resection of the distal ileum (depending on extent) prevents reabsorption of bile salts, which then enter the colon and induce diarrhoea. Although a recrudescence of Crohns disease is a possibility, it is less likely given the normal inflammatory markers. Similarly, the normal B12 and folate make bacterial overgrowth less likely.

5: A

The presentation with asymptomatic iron deficiency anaemia in a patient with long-standing and quiescent ulcerative colitis raises the possibility of colonic malignancy for which colonoscopy is the most appropriate next investigation. The abnormal liver function tests could be due to metastatic disease or primary sclerosing cholangitis.

6: B

The prevalence of colorectal carcinoma is 8-10% following a positive faecal occult blood screen in the bowel cancer screening programme.

7: D

Cirrhosis complicating genetic haemochromatosis is a particularly high-risk situation for the development of hepatocellular carcinoma. AFP may be negative in approximately 20% of hepatomas. A triple-phase CT scan of the liver would be helpful in further defining the nature of the mass lesion. Biopsy may give the diagnosis but due to potential seeding may prevent curative resection. Hepatic resection is premature until a clearer diagnosis is reached.

8: C

This woman has developed HELLP syndrome (haemolysis, as evidenced by the schistocytes, spherocytes and raised LDH, elevated liver enzymes, and low platelets). This condition is often associated with pre-eclampsia.

9: A

Warfarin does not need to be stopped for simple diagnostic biopsies.

10. D

Cobalamin is released from foods by the action of pepsin and acid in the stomach. Salivary R protein then binds to free cobalamin to protect it from acid degradation. In the duodenum, pancreatic enzymes hydrolyze the R protein, releasing cobalamin which then binds to the high affininty protein called intrinsic factor which is secreted along with acid from the gastric parietal cell. This complex is subsequently taken up by cells in the distal ileum. Lack of pancreatic proteolytic enzymes would result in a defective release of cobalamin from the R protein for intrinsic factor binding, and subsequent absorption.

11. B

Phytates bind to iron (and also calcium, zinc, magnesium and niacin) and prevent absorption. Phytates are found in relatively high concentrations in many ‘high fibre’ foods eg. whole grain cereals, nuts, bran, and seeds

12. B

Sulfasalazine is a dimer of sulfapyridine linked to 5-ASA by an azo bond. This bond is split by colonic bacteria to release 5-ASA

13. C

Terlipressin is used in the management of bleeding oesophageal / gastric varices, and in the treatment of hepatorenal syndrome

14. A

This patient has severe pre-eclampsia (hypertension and proteinuria) and needs delivery of the baby. Liver disease is a common association, usually in the form of the HELLP syndrome, acute fatty liver of pregnancy, subcapsular hepatic haematoma or hepatic rupture.

15. C

The patient has an early viral response at 12 weeks with genotype 1 infection which suggests that continued therapy to 48 weeks may be successful in clearing virus. The neutropaenia (<0.75) is an indication for dose reduction of peginterferon.

16. A

There is a mild macrocytic anaemia with a low vitamin B12 and a very high folate. This is a characteristic picture seen with small bowel bacterial overgrowth. Additionally she has compatible symptoms and is predisposed to this condition by her history of diabetes.

17. A

The histological description in the context of a normal colonoscopy is consistent with microscopic colitis (lymphocytic colitis). This condition has an association with NSAID usage. Oral budesonide is the best treatment option.

18. C

Patients with acromegaly have an increased risk of colon cancer. The BSG guideline from 2010 indicates that those with an adenoma at first screening visit (offered from the age of 40) or with raised ILGF levels should have 3-yearly colonoscopy. Those without a polyp at initial screening colonoscopy, or with hyperplastic polyps, or with normal ILGF levels should be screened at 5-10 yearly intervals.

19. E

Knowledge of anatomy required. This knowledge is clinically useful when managing portal hypertension.

20. E

High grade dysplasia in Barrett's on two separate endoscopy examinations is best treated by radiofrequency ablation or oesophagectomy if the patient is fit for surgery. None of the remaining options is as reliable in achieving a cure.

21. E

The urea breath test or faecal antigen test are the best non-invasive tests for confirming successful eradication treatment for Helicobacter pylori. Serology may take many months or never turn negative and repeat endoscopy is unnecessarily invasive.

22. B

The symptoms together with a combined iron and folate deficiency anaemia would make celiac disease highly likely. Patients with coeliac disease and IgA deficiency will have false negative serology as the antibody is of the IgA class.

23. D

The all-cause mortality at 30 days for this patient is approximately 25%, largely owing to the underlying cerebrovascular accident.

24. B

Enteral nutrition support is important here and recent data suggest nasogastric feeding is as effective as nasojejunal feeding and associated with fewer problems in this situation. Sufficient oral intake is unlikely given his nausea and intravenous nutrition is inappropriate.

25. D

The clinical history is of biliary colic. Given her abnormal LFTs a common bile duct stone needs to be considered and this should be done non-invasively with MR imaging.

26. E

Nicorandil is well documented to cause colorectal ulceration.

27. C

The short history and normal crypt architecture would favour an infective aetiology.

28. D

0.3% of the population have very low / insignificant levels of TPMT.

29. B

The patient scores 1 for her age; 1 for tachycardia; and 2 for ‘any major co-morbidity’ (ie severe chronic obstructive pulmonary disease).

30. E

Panreatitis is a risk factor for splenic vein thrombosis due to the proximity of the vessel to the pancreas. Splenic vein thrombosis is typically associated with isolated gastric varices.

31. E

Treatment for non-Hodgkin’s lymphoma will provoke viral replication. Tenofovir will prevent an increase in viral load whilst minimising the risk of mutation.

32. C

The most useful information would come from a liver biopsy, which may or may not demonstrate cirrhosis. Cirrhosis is associated with increased morbidity and mortality due to the complications of end-stage liver disease, not least the significantly increased risk of the development of hepatocellular carcinoma in cirrhosis associated with haemochromatosis.

33. A

Air is introduced into the peritoneum during the uncomplicated placement of a PEG feeding tube. Colonic perforation would produce signs of peritonism. Fistulas do not form after such a short time period. Similarly necrotising fasciitis would not develop so quickly, and there are no supportive signs of this condition in this case.

34. A

Macroscopically and histologically quiescent disease should be surveyed at 5-yearly intervals. The family history in a first-degree relative means this patient should have annual surveillance (BSG guidelines 2010).

35. B

The history, radiological imaging and histology support a diagnosis of eosinophilic oesophagitis. Fluticasone administered via an inhaler and then swallowed usually relieves symptoms.

36. D

Either 3 or 4 small adenomas or at least one $\geq$1 cm diameter puts the patient into the intermediate risk group, which should undergo surveillance at 3 years (BSG guidelines 2010).

37. A

Biliary or pancreatic stenting is regarded as a low risk procedure, and the warfarin can be continued as long as the INR is within the therapeutic range (BSG guidelines 2008).

38. E

Bone marrow suppression occurs in up to 5% of patients receiving azathioprine and necessitates careful full blood count monitoring. Thiopurine methyltransferase (TPMT) levels are often taken before starting azathioprine to identify the 0.3% who have neglible levels and should not be given the drug, or those with low/intermediate levels in whom much smaller doses should be given if the drug is used. Most patients who develop leucopenia, however, have normal TPMT levels. 6-thioguanine nucleotides are metabolites of 6-mercaptopurine. Liver function tests should also be measured regularly as there is a small incidence of hepatotoxicity.

39. C

C282Y homozygosity is the most common gene mutation associated with genetic haemochromatosis.