GASTROENTEROLOGY Questions&Answers

Q-1

A 22 year old man presents with a 2 month history of diarrhoea. He says his bowels have not been right for the past few months and he frequently has to run to the toilet. These symptoms seemed to be improving up until two weeks ago and for the past week, he notices the presence of blood when he passes stool. On examination, there are aphthous oral ulcers. He has not lost any weight and has a good appetite. Examination of his abdomen demonstrates mild tenderness in the left lower quadrant but no guarding. What is the SINGLE most likely diagnosis?

A. **Ulcerative colitis**
B. **Crohn's disease**
C. **Infective diarrhoea**
D. **Colorectal cancer**
E. **Anal fissure**

ANSWER:
Ulcerative colitis

EXPLANATION:
This is most likely ulcerative colitis. Note that aphthous oral ulcers can actually be seen in both ulcerative colitis and Crohn's disease although commonly, literature would classify aphthous oral ulcersto be a feature seen only in Crohn's disease. It is also noted that this patient has blood when he passes stools of which the history points towards ulcerative colitis.

CROHN'S DISEASE VS ULCERATIVE COLITIS
It is important to know the differences of ulcerative colitis and Crohn's disease for PLAB as it is very commonly asked.

These are some key differences that will help you with your exam:

Crohn's disease	**Ulcerative colitis**
Usually nonbloody	Bloody diarrhoea more common

Abdominal mass palpable in right iliac fossa	Abdominal pain in left lower quadrant
Increased goblet cells on histology	Decreased globlet cells on histology
Granulomas seen on histology	Granulomas are infrequent on histology
Weight loss more prominent	Primary sclerosing cholangitis more common
Transmural, skip lesions, cobblestone appearance on endoscopy	Loss of haustration, drain pipe colon seen on barium enema

Q-2

A 65 year old lady had a urinary tract infection which was treated with broad spectrum antibiotics. A few days later she developed bloody diarrhoea and severe abdominal pain. She has a temperature of 38.6 C and a pulse rate of 90 beats/minute. Her blood tests show:

Haemoglobin 119 g/L
White blood cells 18 x 10^9/L
CRP 180 mg/L

What is the SINGLE most likely management?

A. **Co-amoxiclav**
B. **Piperacillin+tazobactam**
C. **Ceftriaxone**
D. **Vancomycin**
E. **Amoxicillin**

ANSWER:
Vancomycin

EXPLANATION:
This scenario shows a classical picture of Clostridium difficile.

Broad spectrum antibiotics always have the potential to kill off normal gut flora leaving C. Diff the chance to grow.

Metronidazole is usually used as first line to manage Clostridium difficile. As this is not an option here, use the second line which is vancomycin. Vancomycin is usually reserved for more severe colitis with severe bloody diarrhoea, severe abdominal pain and temperatures above 38.5 C.

Woman always want a “strong” antibiotic to treat their urinary tract infections but they are not aware that antibiotics such as cephalosporins and amoxicillin are commonly implicated in C. difficile infections. This is a very good reason why we should always start off with narrow spectrum antibiotics such as trimethoprim and nitrofurantoin for simple urinary tract infections.

In the exam, look out for antibiotic usage like cephalosporins, clindamycin, co-amoxiclav, and amoxicillin as a cause for Clostridium difficile.

CLOSTRIDIUM DIFFICILE
Clostridium difficile is a Gram positive rod often encountered in hospital practice. Itis transmitted via the faecal-oral route by spores that are resistant to antibiotics. It produces an exotoxin which causes intestinal damage leading to a syndrome calledpseudomembranous colitis. Clostridium difficile develops when the normal gut flora aresuppressed by broad-spectrum antibiotics.

Most common an tibiotics implicated in Clostridium difficile infections are:
• Clindamycin
• Cephalosporins (in particular second and third generation cephalosporins)
• Quinolones
• Co-amoxiclav
• Aminopenicllins (amoxicillin and ampicillin)

Features
• Diarrhoea - may be mild diarrhoea or serious bloody diarrhoea
• Abdominal pain – can sometimes be severe enough to mimic an acute abdomen
• Raised white blood cell count
• Fever

Diagnosis
Clostridium difficile toxin (CDT) detected in the stool

Management
• Stop the causative antibiotic (if possible)
• first-line therapy is oral metronidazole
• if severe or not responding to metronidazole then oral vancomycin may beused

Another method of treating Clostridium difficile is faecal microbial transplantation but we shall not discuss this in case you are about to eat lunch.

Note: Treatment is not usually needed if patient is asymptomatic

Q-3

A 25 year old man presents to his GP with the complaint of diarrhoea for the last seven days. Upon further questioning, he reveals that he opens his bowels in excess of two to six times per day. He describes his stool as being watery in

consistency. He has also noticed blood in his stool. When asked about the character of the blood, the patient claims that the blood appeared to be fresh and was bright red in colour. He also complains about abdominal pain and describes his pain as being cramping in nature. He complains about an urgency to visit the toilet all the time. The patient is a bank manager by profession and for the last seven days, has been unable to cope with his situation. He says that it is affecting his work and overall general health as he is feeling very tired and lethargic all the time. He also complains about a lack of appetite. He has not traveled outside of the United Kingdom for the last eight months. The patient has no significant past medical history and does not have any allergies. On examination, he has a blood pressure of 120/80 mmHg and a heart rate of 70 beats/minute. His abdomen is tender with no guarding or rigidity. What SINGLE most appropriate investigation will you perform to aid in the management of this patient?

A. **Faecal fat test**
B. **Stool microscopy, culture and sensitivity**
C. **Faecal antigen test**
D. **Faecal blood occult test**
E. **Colonoscopy**

ANSWER:
Stool microscopy, culture and sensitivity

EXPLANATION:
The World Health Organisation classification of diarrhoea is as follows:

- Diarrhoea > 3 loose or watery stool per day
- Acute diarrhoea < 14 days
- Chronic diarrhoea > 14 days

According to the above classification, it is too early to decide in this patient if he is suffering from ulcerative colitis or not because he has had diaarhoea for only the last seven days. At this stage, it is best to exclude the infectious causes first by doing a stool microscopy, culture and sensitivity test.

In such cases, the investigations largely depend on the clinical setting. For example, in primary care the main aim is to make the diagnosis and in secondary care, to confirm the diagnosis as well as to assess the severity and extent of the disease.

In primary care, the test must include a stool culture and sensitivity to exclude the infectious causes of diarrhoea such as salmonella, shigella, eschericia coli, clostridium difficile, campylobacter and giardiasis. Once the infectious causes are excluded, further diagnostic tests like colonoscopy with biopsy can be done in secondary care.

Faecal test is not the correct option. A faecal fat test is primarily ordered when a person has signs and symptoms of malabsorption such as steatorrhea, persistent diarrhoea,

abdominal pain, bloating, weight loss and failure to thrive (in children)

The faecal antigen test is a stool test which is used to detect helicobacter pylori. It is an irrelevant test to perform in this particular patient.

Q-4

A 70 year old man presents with persistent dysphagia to both solids and liquids for a few months now. There is no associated weight loss. He does not have regurgitation after meals. His medical history includes osteoporosis which he takes alendronate once a week for the past 2 years. What is the SINGLE most likely diagnosis?

A. Achalasia
B. Oesophageal carcinoma
C. Benign oesophageal stricture
D. Barrett's Oesophagus
E. Pharyngeal pouch

ANSWER:
Benign oesophageal stricture

EXPLANATION:
Benign oesophageal strictures – are usually the result of scarring from acid reflux in severe and persistent GORD. It may also follow ingestion of corrosives. While the area heals, a scar forms, causing the tissue to pull and tighten, leading to difficulty in swallowing. Certain drugs like alendronate and NSAIDs have the potential to cause strictures due to their side effects which worsen GORD. This is seen in this stem where the patient is taking alendronate. This is the reason that it is so important to advise patients not to lie down for at least 30 minutes after taking alendronate as this will help alendronate reach the stomach faster and prevent irritation of the oesophagus.

Oesophageal carcinoma – The absence of any significant weight loss makes oesophageal carcinoma a less likely diagnosis. Although it is important to note that any cause of dysphagia can essentially cause weight loss. This includes both benign oesophageal stricture and achalasia.

Barrett's oesophagus – Would also have a long history of gastro-oesophageal reflux which is seen in this stem however, the symptoms of dysphagia is usually occasional rather than persistent.

Pharyngeal pouch – Usually presents with a history of halitosis and regurgitation of undigested food, a sensation of a lump on the throat, neck bulge.

Achalasia – While the most common feature is dysphagia, regurgitation is a very common feature of achalasia and occurs in around 80-90% of sufferers.

Please note that if this stem did not include the history of taking Alendronate, the answer is still likely to be benign oesophageal stricture given that there is less evidence for any other opiton.

Q-5

A 33 year old woman presents to the emergency department with right upper quadrant pain for the past 7 days. The pain is constant and gradually worsening over the past few days. The pain radiates to the back and is usually seen to be worse after eating meals. She feels nauseous and has vomited twice today. She has no history of any liver or gallbladder disease. On examination, there is no signs of jaundice. On palpation of the right costal margin at the midclavicular line, her breathing is interrupted due to tenderness. She has a temperature of 37.6 C and a heart rate of 90 beats/minute. Her blood results show:

Haemoglobin 120 g/L
White cell count 13 x 10^9/L
Platelets 350 x 10^9/L
CRP 30 mg/L
Amylase 30 U/L
Bilirubin 99 micromol/L
Alanine transferase (ALT) 189 U/L
Albumin 39 g/L

What is the SINGLE most likely diagnosis?

A. **Acute cholecystitis**
B. **Chronic cholecystitis**
C. **Acute pancreatitis**
D. **Gastritis**
E. **Hepatic jaundice**

ANSWER:
Acute cholecystitis

EXPLANATION:
Acute cholecystitis presents with severe continuous right upper quadrant pain which can be seen to radiate to right flank and back. A fever like in this stem is also associated with it. Nausea and vomiting are often seen with cholecystitis.

Jaundice can be a feature of obstruction of the biliary tract and can be seen in cholecystitis however, it is often mild or not seen unless there is presence of gallstones in the common bile duct (choledocholithiasis). In this stem, jaundice is absent.

The examination here shows a positive Murphy's sign. Remember, Murphy sign is not just pain, but it is the arrest of inspiration when pressing the right costal margin at the midclavicular line. It is a sign of acute cholecystitis. It is sensitive, but not specific to

cholecystitis.

There is an elevation of ALP in this stem which ALP rises much higher than ALT which points towards a form of biliary obstruction with cholestasis.

The likely scenario here is that there are gallstones that are obstructing the cystic duct causing acute cholecystitis. Remember, more than 90% of the time, acute cholecystitis occurs from blockage of the cystic duct by a gallstone. When this occurs, the patient would experience biliary colic.

Chronic cholecystitis is incorrect here as chronic cholecystitis occurs when there are repeated episodes of infection causing thickening and fibrosis of gallbladder.

Acute pancreatitis is incorrect as the amylase is within normal limits in this stem.

Acute Cholecystitis
Acute cholecystitis follows stone or sludge impaction in the neck of the gallbladder,which may cause continuous epigastric or RUQ pain (referred to the right shoulder),vomiting, fever, local peritonism, or a gallbladder mass.

The main difference from biliary colic is the inflammatory component (local peritonism,fever, and elevated WCC).

If the stone moves to the common bile duct (CBD), obstructive jaundice and cholangitismay occur

Murphy's sign is positive when you lay 2 fingers over the RUQ and ask patient tobreathe in which causes pain & arrest of inspiration as an inflamed gallbladder impingeson your fingers. It is only positive if the same test in the LUQ does not cause pain.

Tests:
WCC would be elevated
Ultrasound shows a thick-walled, shrunken gallbladder

Management:
Nil by mouth, pain relief, IV fluids, and antibiotics.

Once symptoms settle, do a laparoscopic cholecystectomy.
Laparoscopiccholecystectomy is the treatment of choice for all patients fit for general anaesthesia.Open surgery is required if there is gall bladder perforation.

Q-6

A 28 year old type 1 diabetic has intermittent diarrhoea and abdominal bloating over the last 6 months. He also complains of feeling tired all the time. His blood results show the following:

Haemoglobin 135 g/L (130-180 g/L)
Ferritin 30 ng/ml (20-300 ng/ml)
Thyroid stimulating hormone (TSH) 2.5 mU/L (0.5-5.7 mU/L)
Immunoglobulin A (IgA) tissue transglutaminase positive

What is the SINGLE most appropriate next step in action?

A. **Duodenal biopsy**
B. **Colonoscopy**
C. **Sweat test**
D. **Thyroid function test**
E. **Advice patients to go on a gluten-free diet**

ANSWER:
Duodenal biopsy

EXPLANATION:
There is an association between type 1 diabetes and coeliac disease.

The gold standard to diagnose coeliac disease is a jejunal/duodenal biopsy.

In the past, small-bowel biopsies for diagnosis of coeliac disease were taken from the jejunum, but nowadays most gastroenterologists take endoscopic biopsies from the distal duodenum.

Coeliac disease
Coeliac disease is caused by sensitivity to the protein gluten. Repeated exposure leadsto villous atrophy which in turn causes malabsorption.

Signs and symptoms
• Chronic or intermittent diarrhoea
• Stinking stools/steatorrhoea
• Persistent or unexplained gastrointestinal symptoms including bloating, nauseaand vomiting
• Fatigue
• Recurrent abdominal pain, cramping or distension
• Sudden or unexpected weight loss
• Unexplained iron, vitamin B12 or folate deficiency. Note that the one of themost common presentation of coeliac disease is iron deficiency anaemia. Also,folate deficiency is more common than vitamin B12 deficiency in coeliacdisease

Complications
• osteoporosis
• T-cell lymphoma of small intestine (rare)

Investigation
Diagnosis is made by a combination of immunology and jejunal biopsy. Any test forcoeliac disease is accurate only if a gluten-containing diet is eaten during the diagnosticprocess. The person should not start a gluten-free diet until diagnosis is confirmed.

NICE issued guidelines on the investigation of coeliac disease in 2009. If patients arealready taking a gluten-free diet they should be asked, if possible, to reintroduce glutenfor at least 6 weeks prior to testing.

Specific auto-antibodies
• Tissue transglutaminase (TTG) antibodies (IgA) are first-choice according toNICE
• Endomysial antibody (IgA)

Jejunal/duodenal biopsy
A biopsy is still needed to diagnose coeliac disease even if antibody test confirm thediagnosis of coeliac disease.
• Villous atrophy
• Crypt hyperplasia
• Increase in intraepithelial lymphocytes

Management
• Gluten-free diet

Q-7

A 55 year old woman complains of retrosternal chest pain and difficulty swallowing which is intermittent and unpredictable. She says that food gets stuck in the middle of the chest and she has to clear it with a drink of water. She is then able to finish the meal without any further problem. A barium meal shows a 'corkscre patterned oesophagus'. What is the SINGLE most likely cause of the dysphagea?

A. **Oesophageal candidiasis**
B. **Oesophageal carcinoma**
C. **Oesophageal spasm**
D. **Pharyngeal pouch**
E. **Plummer-Vinson syndrome**

ANSWER:
Oesophageal spasm

EXPLANATION:
The corkscrew pattern gives it away. This can only be oesophageal spasm.

Diffuse Esophageal Spasm (DES)
Clinical Presentation

These patients present with intermittent chest pain and dysphagia. The pain cansimulate that of a myocardial infarction, but it bears no relationship with exertion. Thepain can be precipitated by drinking cold liquids.

Diagnosis
Barium studies may show a "corkscrew" pattern at the time of the spasm. The mostaccurate test is manometric studies, which will show high-intensity, disorganizedcontractions

Because the contractions are disorganized, they do not lead to the forward flow of foodand peristalsis.

Treatment
Calcium-channel blockers, such as nifedipine, and nitrates.

Q-8

A 36 year old lady has diarrhoea for the last 2 months. She has lost 8 kg in that time period. A colonoscopy was performed which showed fistulas. Perianal fistulas are also noticed. What is the SINGLE most likely diagnosis?

A. **Crohn's disease**
B. **Irritable bowel syndrome**
C. **Coeliac disease**
D. **Diverticulitis**
E. **Ulcerative colitis**

ANSWER:
Crohn's disease

EXPLANATION:
The diagnosis of Crohn's disease is quite clear here. Fistulas help differentiate between ulcerative colitis and Crohn's. Since fistulas are present, it can only be Crohn's disease.

Q-9

A 33 year old lady who has been traveling around Europe for a few months now returns to the United Kingdom with lethargy, abdominal pain, loose watery diarrhoea and bloating. She has lost a few kilograms since coming back from the trip. Her physical examination remains unremarkable with abdominal examination having mild generalised tenderness. What is the SINGLE most likely organism causing her symptoms?

A. **Campylobacter jejuni**
B. **Salmonella enterica**
C. **Shigella dysentry**
D. **Staphylococcus aureus**
E. **Giardia lamblia**

ANSWER:
Giardia lamblia

EXPLANATION:
Giardia. As the patient has watery diarrhoea instead of bloody diarrhoea, giardiasis fitsbest.

In the UK, many cases of giardiasis are associated with recent foreign travel. Giardiasiscan present as traveller's diarrhoea with symptoms lasting more than ten days.Symptoms of giardiasis include bloating, flatulence, abdominal pain, loose stool andexplosive diarrhoea. The symptoms may begin after returning from travel, and may beassociated with weight loss. Giardiasis can cause both acute and chronic diarrhoea. Inthis stem, it is likely chronic diarrhoea as there is a history of weight loss.

The clinical features of giardiasis are slightly different compared to campylobacterenteritis. In campylobacteriosis, clinical features usually include a prodromal illness ofheadache and myalgia with fevers as high as 40°C. This is followed by abdominal painsand profuse diarrhoea. The stool is often bloody. The reason many choosecampylobacter as the answer is because campylobacter is the commonest bacterialcause of infectious intestinal disease in the UK. But this is incorrect for this stem.

Important key notes:
• *Campylobacter, Shigella, Salmonella usually cause bloody diarrhoea.*
• *Giardiasis causes non-bloody diarrhoea*
• *Giardiasis can cause chronic diarrhoea associated with weight loss*
• *Campylobacter has a prodrome of headache, myalgia and fever*

Q-10

A 52 year old man who underwent a partial gastrectomy 10 months ago presents with increasing fatigue. A yellow tinge is noted on his skin and he has a red sore tongue. What is the SINGLE most likely diagnosis?

A. B12 deficiency
B. Cancer of the colon
C. Alcoholism
D. Coeliac disease
E. Crohn's disease

ANSWER:
B12 deficiency

EXPLANATION:
Findings on examination for B12 deficiency may include lemon tinge to the skin and glossitis.

These findings together with a history of gastric resection whereby malabsorption of B12 could occur, points towards the diagnosis of B12 deficiency.

B12 DEFICIENCY
Vitamin B12 is found in meat, fish, and dairy products, but not in plants. Body stores aresufficient for 4 years.

B12 then binds to intrinsic factor in the stomach, and this complex is absorbed in theterminal ileum.

Clinical presentation
• Symptoms are those of chronic anaemia, i.e. fatigue, dyspnoea on effort
• Neurological symptoms may also be present → classically peripheralparesthesia and disturbances of position and vibration sense
• If uncorrected, the patient may develop subacute combined degeneration ofthe spinal cord leading to permanently ataxia

Causes of B12 deficiency:
• Pernicious anaemia →Commonest cause. It is due to autoimmune gastricatrophy resulting in loss of intrinsic factor production required for absorption ofB12. It is usually associated with other autoimmune problems e.g.hypothyroidism
• Dietary (e.g. vegans)
• Following total gastrectomy
• Ileal disease → Resection of ileum, Crohn's disease
• Malabsorption disorders → Coeliac disease, tropical sprue

In PLAB, one distinction that may help you choose between B12 and folate deficiency isthe diet. Good food sources of folate include broccoli, brussels sprouts, asparagus, peas(basically vegetables). Thus if the given scenario is a vegetarian, it is unlikely that he issuffering from folate deficiency. In that case, pick B12 deficiency.

Haematological abnormalities of B12 deficiency
• Macrocytic anaemia and the MCV is usually >110fL
• Hypersegmented neutrophils
• Serum B12 is low

Management:
Hydroxocobalamin IM

Q-11

A 55 year old man with no past medical history comes to your office for the evaluation of "difficulty swallowing" foots. He has had this problem for almost a year, and finds it difficult for him to swallow both solids and liquids. A barium meal shows gross dilatation of the esophagus with a smooth narrowing at the lower end of the esophagus. What is the SINGLE most likely diagnosis?

A. **Achalasia**
B. **Myasthenia gravis**
C. **Oesophageal carcinoma**
D. **Oesophageal web**
E. **Systemic sclerosis**

ANSWER:
Achalasia

EXPLANATION:
Achalasia
Achalasia is the idiopathic loss of the normal neural structure of the loweroesophageal sphincter. The lower oesophageal sphincter is usually contractedto prevent the acidic gastric contents from refluxing backward into theoesophagus. For swallowing to occur, there is normally a relaxation process ofthe lower oesophageal sphincter in order to allow food to pass into thestomach. Inhibitory neurons are stimulated, blocking the impulses that cause constriction. In achalasia, these inhibitory neurons have been lost, as well asthe ability to relax the lower oesophageal sphincter.

Presentation:
• Progressive dysphagia to both solids and liquids simultaneously and can have regurgitation several hours after eating
• There can also be weight loss
• Achalasia has no relationship with alcohol or tobacco use
• Note: This is different from oesophageal cancer, which not only usuallypresents with dysphagia to solid foods that progresses to difficulty swallowingliquids, but also is more common in older patients with a long history of alcoholand tobacco use.

Investigations:
• Barium swallow shows dilation of the esophagus, which narrows into a "bird'sbeak" at the distal end
• The most accurate test overall is esophageal manometry. Manometry shows increased lower oesophageal resting pressure

Management:
• Dilatation of the lower oesophageal sphincter

Q-12

A 35 year old male presents to his GP with the complaint of diarrhoea. He complains that he has been having recurrent, chronic diarrhoea for the past 5 months now. He claims to not have noticed any discernible pattern. Her does not smoke and is a teetotaler. Upon examination, the patient's clothing appears to be ill-fitting. A blood test was subsequently done and revealed the following:

Haemoglobin 118 g/L (130-180 g/L)
Mean cell volume (MCV) 106 fL (76-96 fL)

A peripheral blood film is significant for a diamorphic picture of red cells.

Following the results of the blood tests, the patient was booked for an endoscopy. A few tissue samples were taken during the endoscopy and sent for histology evaluation. What is the SINGLE most likely pathology to be seen on histology?

A. **Caseating granulomas**
B. **Lymphocytic infiltration of the submucosa**
C. **Focal infiltration of basophils**
D. **Cyst formation**
E. **Villous atrohy**

ANSWER:
Villous atrophy

EXPLANATION:
This man is suffering from coeliac disease.

Malabsorption typically presents with diarrhoea, and weight loss. The malabsorption from coeliac disease can result in either iron deficiency, folate or B12 deficiency anaemias. In this case, since the MCV is high, it is likely folate or B12 deficiency (more often folate deficiency).

The term dimorphic red blood cells are used when one observes two types of distinct morphology in the circulating red cell population. It is seen in B12 and folate deficiencies, sideroblastic anaemias, post-transfusions, myelodysplasia and iron deficiencies.

Coeliac disease is confirmed by finding villous atrophy on small bowel biopsy (usually duodenum) by endoscopy.

It is likely that the GP would have sent off specific auto-antibodies, such as tissue transglutaminase (TTG) antibodies (IgA) to investigate for coeliac disease when ordering the initial blood test. This information was omitted as the answer would then be too obvious.

Q-13

A 50 year old man comes to A&E with abdominal pain that began suddenly about 1 hour ago. The pain is now generalized, constant, and extremely severe. He lies motionless on the stretcher, is diaphoretic, and has shallow, rapid breathing. His abdomen is rigid, very tender to deep palpation, and has guarding. X-rays show free air under the diaphragm. What is the SINGLE most likely diagnosis?

A. **Biliary peritonitis**

B. Ischaemic colon
C. Pancreatic necrosis
D. Pulmonary embolism
E. Perforated peptic ulcer

ANSWER:
Perforated peptic ulcer

EXPLANATION:
Definitely an acute abdomen. The X-ray which shows free air under the diaphragm isclassical for a perforation. Lying motionless and having a rigid, tender abdomen withsigns of guarding is typical for a perforated peptic ulcer.

Perforated peptic ulcer
Perforation of a gastric or duodenal ulcer is usually a severely painful sudden event. Itmay occur in those without known peptic ulcer disease, as well as those with previouslydiagnosed problems. However, close questioning may reveal recent symptomsattributed to 'indigestion'.

Sudden localized epigastric pain spreads to the remainder of the abdomen the pain isworse on coughing or moving and may radiate to the shoulder tip

Examination
Although distressed, the patient often prefers to lie still, rather than roll about. Absentbowel sounds, shock, generalized peritonitis and fever develop as time passes.

Investigations
An erect chest X-ray will demonstrate free gas under the diaphragm

In those cases where the diagnosis is suspected, but not proven by X-ray, a contrast CTscan may help.

Treatment
• Provide IV analgesia
• Give an antiemetic (eg IV metoclopramide 10mg).
• Resuscitate with IV 0.9 % saline.
• Refer to the surgeon and give IV antibiotics

Q-14

A61 year oldman presents with fatigue and palpitations. His past surgical history includes an ileal resection which was performed one year ago. An FBC was requested and the results are as follows:

Haemoglobin 93 g/L
Mean cell volume (MCV) 111 fL

What is the SINGLE most likely diagnosis?

A. **Anaemia of chronic disease**
B. **Iron deficiency**
C. **Folate deficiency**
D. **Haemolytic anaemia**
E. **Vitamin B12 deficiency**

ANSWER:
Vitamin B12 deficiency

EXPLANATION:
High MCV and low Hb – Macrocytic anaemia

These findings together with a history of ileal resection whereby malabsorption of B12 could occur, points towards the diagnosis of B12 deficiency.

COMPARISON OF CAUSES BETWEEN VITAMIN B12 AND FOLATE DEFICIENCY

Cause	**Vitamin B12 deficiency**	**Folate deficiency**
Malabsorption	Pernicious anaemia	Poor bioavailability
Medical conditions	Inflammation of small intestine (coeliac disease, tropical sprue, Crohn's disease) Gastric resection (for reasons of obesity or cancer)	Inflammation of small intestine (coeliac disease, tropical sprue, Crohn disease
Inadequate dietary intake	Low intake of cobalamin rich foods	Low intake of folate rich foods (usually vegetables)

In PLAB, one distinction that may help you choose between B12 and folate deficiency is the diet. Good food sources of folate include broccoli, brussels sprouts, asparagus, peas (basically vegetables). Thus if the given scenario is a vegetarian, it is unlikely that he is suffering from folate deficiency. In that case, pick B12 deficiency.

Q-15

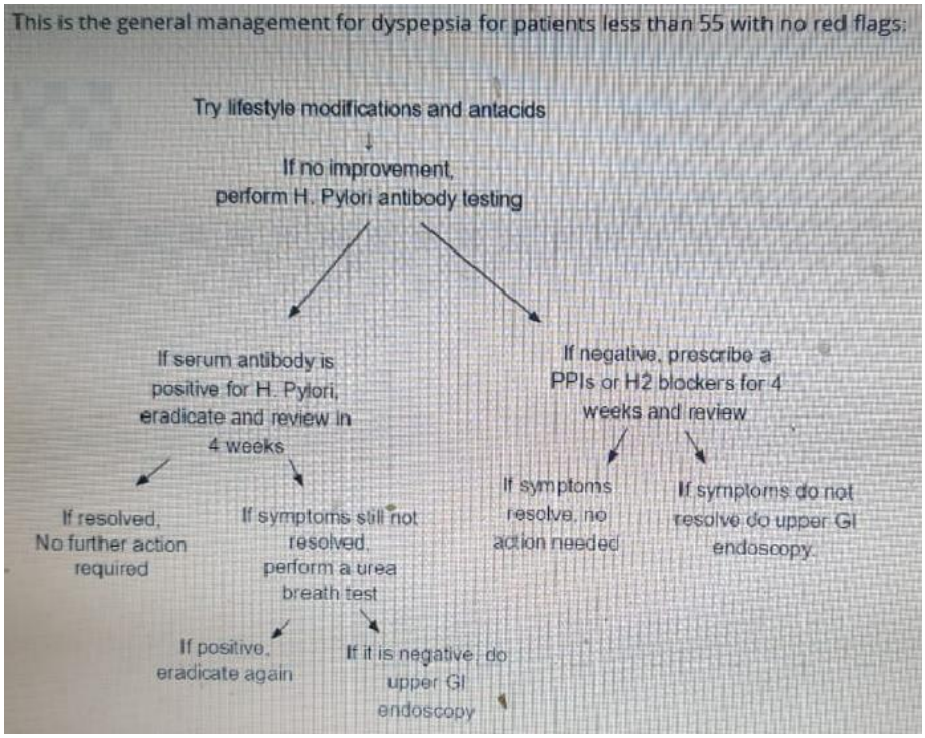
A 35 year old man presents to his GP surgery with a history of dyspepsia intermittently for the past 3 months. Serum antibodies for Helicobacter pylori which were performed a month ago for his symptoms were negative. There has been no improvement with his symptoms despite taking a proton pump inhibitor for the past 1 month. He reports no weight loss or blood in his stools. There is no previous history of non-steroidal anti-inflammatory drug (NSAID) use. He does not smoke and drinks a cup of coffee a day. An abdominal examination reveals slight tenderness at the epigastric region without any mass felt. What is the SINGLE most appropriate next step?

A. **Urea breath test**
B. **Repeat serum antibodies**
C. **Change type of proton pump inhibitor**
D. **Continue proton pump inhibitor and review in a month**
E. **Request an endoscopy**

ANSWER:
Request an endoscopy

EXPLANATION:
This patient is less than 55 years old and does not have any red flags. As his initial antibodies for Helicobacter pylori are negative and his symptoms have not resolved, it would be appropriate to refer this patient for an endoscopy. On the other hand, if his serum antibodies for Helicobacter pylori were initially positive, then a urea breath test would be appropriate.

GENERAL MANAGEMENT FOR DYSPEPSIA, HELICOBACTER PYLORI TESTING



Whilst we have put in this diagram to use H. pylori antibody testinhg if no response to lifestyle modifications and antacids, NICE recommends any locally validated test for H. pylori which include the carbon-13 urea breath test, stool antigen test, or serum antibody testing.

In practice, if the patient is taking proton pump inhibitors, remember to stop it 2 weeks prior to performing urea breath test or stool antigen test.

The only one test that you need to remember for re-testing for H. pylori is carbon-13 urea breath test as NICe recommends this as there is still insufficient evidence to recommend stool antigen test as a test for eradication. Serological tests have no value in confirming successful eradication because the antibodies persist after successful eradication.

Q-16

A 45 year old man had an endoscopy earlier in the day for investigations for chronic abdominal pain. The next day evening, he returns to the hospital with complaints of chest pain and shortness of breath. The pain isseen worse at the epigastric area and radiates to the interscapular region of the back. His abdomen is soft and nontender. His respiratory rate is 29 breaths/minute, pulse rate is 110 beats/minute, a temperature of 37.8 C and blood pressure is 120/70 mmHg. A chest X-ray reveals mediastinal widening. What is the SINGLE most likely diagnosis?

A. **Aspiration pneumonia**
B. **Mediastinitis**
C. **Pneumothorax**
D. **Posterior mediastinitis**
E. **Traumatic aortic injury**

ANSWER:
Mediastinitis

EXPLANATION:
Mediastinitismay occur after oesophageal perforation or rupture, due to a variety of reasons with endoscopy being one of them. Oesophageal perforation or rupture should not be taken lightly as it is a life-threatening condition. Often air alongthe subcutaneous planes or into the mediastinum would cause chest pain, dyspnoea, and fever. This patient should be considered critically ill and require management in the intensive care unit. It may be difficult to catch the diagnosis early in the course of mediastinitis as the signs and symptoms may be subtle. However, as the condition progresses, patients would experience increasing chest pain, respiratory distress, and odynophagia.

The most prominent symptom of mediastinitis is the chest pain and this localised depending on the portion of mediastinum involved. In anterior mediastinitis, pain is located at the substernal region while in posterio mediastinitis, the pain is localised to the epigastric region with radiation to the interscapular region.

A chest X-raymay show widened mediastinum or air in the mediastinum. Water-soluble contrast can be added if needed. IF there is diagnostic uncertainity, a direct visualisation using endoscopy is used to confirm the diagnosis.

The principles of managing mediastinitis due to oesophageal perforation include repairing the defect and treatment with antibiotics.

Q-17

42 year old obese woman presents to the emergency department with a 12 hour history of severe epigastric pain. The pain started suddenly and radiates to her back. It is relieved when sitting forward. She is nauseous and has vomited twice since the pains started. She drinks one and a half glasses of wine per day. She has no significant past medical history. She has a pulse rate of 110 beats/minute and is tender in the epigastric region. What is the SINGLE most appropriate investigation?

A. Chest X-ray
B. Abdominal ultrasound
C. Serum lipase
D. Abdominal X-ray
E. Liver function test

ANSWER:
Serum lipase

EXPLANATION:
The likely diagnosis is acute pancreatitis. The most useful investigation is a serum lipase, looking for an elevation of more than 3 times the upper limit of normal.

While abdominal x-rays are not useful in the diagnosis of pancreatitis, they areroutinely ordered to exclude other potential causes of abdominal pain such asperforation or bowel obstruction.

Ultrasound is useful to detect the presence of gallstones but it is not a good diagnostictest for acute pancreatitis. The pancreas is poorly visualised in 25-50% of cases.

Urea and electrolytes and liver function test do not directly aid the diagnosis ofpancreatitis however, they are helpful in assessing the severity of the disease (e.g. byshowing the degree of leucocytosis or of hypovolaemia) or give clues of the aetiology ofpancreatitis (e.g. gallstone pancreatitis).

Acute pancreatitis
Aetiology
The vast majority of cases in the UK are caused by gallstones and alcohol.

A popular mnemonic to remember is GET SMASHED
• *Gallstones*
• *Ethanol*
• *Trauma*
• *Steroids*
• *Mumps (other viruses include Coxsackie B)*

• *Autoimmune (e.g. polyarteritis nodosa), Ascaris infection*
• *Scorpion venom*
• *Hypertriglyceridaemia, Hyperchylomicronaemia, Hypercalcaemia, Hypothermia*
• *ERCP*
• *Drugs (azathioprine, mesalazine*, didanosine, bendroflumethiazide,furosemide, pentamidine, steroids, sodium valproate)*

Clinical features
• Gradual or sudden severe epigastric or central abdominal pain (radiates toback, sitting forward may relieve it)
• Vomiting is prominent
• Tachycardia
• Fever,
• Jaundice
• Shock
• Rigid abdomen with local or general tenderness
• Periumbilical bruising (Cullen's sign)

Investigation
• Raised serum amylase (>1000U/mL or around 3-fold upper limit of normal).However, lipase levels are more sensitive and more specific.
• CT scan with contrast enhancement may be diagnostic where clinical andbiochemical results are equivocal on admission

Q-18

A 21 year old female presents to the Emergency Department with the complaint of severe diarrhoea. She says that she opens her bowels in excess of eight times a day for the past week and that she has noticed that her stool is covered in blood yesterday. She is extremely anxious and scared about the fact that she has bloody stools as she is afraid that she could have colon cancer. On further questioning, she reveals that her grandfather passed away five years ago from colorectal carcinoma. She also complains of colicky abdominal pain and an urgency to visit the toilet. Her medical history is significant for ulcerative colitis which she takes sulfasalazine for. On physical examination, the patient appears pale. Examination of her abdomen reveals a tender abdomen with no palpable masses or distention. Her heart rate is 100 beats/minute and temperature is 38 C. What is the SINGLE next best step in this patient's manangement?

A. **Intravenous hydrocortisone**
B. **Increase dose of sulfasalazine**
C. **Oral prednisolone**
D. **Topical mesalazine**
E. **Intravenous antibiotics**

ANSWER:
Intravenous hydrocortisone

EXPLANATION:
This patient is suffering from an acute flare of ulcerative colitis. The stem gives multiple clues that allude to the severity such as bloody diarrhoea (which is the hallmark of the disease), several bowel motions a day, tachycardia, and pyrexia.

Intravenous corticosteroids are used for the treatment of acute and severe ulcerative colitis. This patient clearly displays signs and symptoms of a severe exacerbation and should be referred to the medical team.

Topical aminosalicylates and oral corticosteroids have its place in the management of mild to moderate exacerbation of the disease but not in severe flare ups like this.

It is also worth mentioning that if the question had asked for an appropriate investigations, an abdominal X-ray would be very appropriate in this setting to look for features suggestive of toxic megacolon

ULCERATIVE COLITIS MANAGEMENT
Inducing remission
- First line – topical aminosalicylates e.g. Rectal mesalazine
  - Rectal aminosalicylates are better than rectal steroids andalso better than oral aminosalicylates alone
- If not responding, then add 5-ASA (e.g. oral mesalazine)
- If still not responding, then add oral prednisolone

If severe colitis, treat in hospital with IV steroids as first line

In the exam, how do you knowif this is severe colitis?
It issevere ifthe following are present:
- *More than 6 bowel movements*
- *Visible blood in large amounts*
- *Pyrexia more than 37.8 C*
- *Tachycardic*
- *Anaemic*
- *ESR more than 30*

Maintaining remission
- Oral aminosalicylates e.g. mesalazine
- If remission not well maintained, consider oral azathioprine or mercaptopurine

Q-19

A 31 year old female presented with complaints of chest pain and difficulty in swallowing liquids and solids. She has also been sufferingfrom recurrent chest infection for the past few months. What is the SINGLE most likely diagnosis?

A. Schatzki ring

B. **Plummer-Vinson syndrome**
C. **Achalasia cardia**
D. **Peptic stricture**
E. **Oesophageal carcinoma**

ANSWER:
Achalasia cardia

EXPLANATION:
The diagnosis here is achalasia. In achalasia, dysphagia is often with both fluids and solids and in fact solidsare affected more than soft food or liquids.

It can sometimes present as chest pain or with recurrent chest infections. The chest infections or aspiration pneumonia results from untreated achalasia that leads to nocturnal inhalation of material lodged in the oesophagus and aspiration pneumonia.

Q-20

A 54 year old woman, known case of pernicious anaemia refuses to take hydroxocobalamin intramuscularly as she needle shy. She is asking for medication. What is the SINGLE best reason that describes why oral medications will not be effective?

A. **Intrinsic factor deficiency**
B. **Increased gastric acidity**
C. **Lack of gastric acidity**
D. **Irritated gastric mucosa**
E. **Abundance of ileal binding sites**

ANSWER:
Intrinsic factor deficiency

EXPLANATION:
Pernicious anaemia is caused by an autoimmune atrophic gastritis, leading to achlorhydria and lack of gastric intrinsic factor secretion. Injections are required.

Note: if the cause of B12 deficiency is not due to pernicious anaemia (e.g. dietary), then oral B12 can be given after the initial acute course.

Q-21

While performing an appendectomy, a surgeon found a mass in the caecum of a patient. The mass was removed and sent for analysis. Analysis revealed a transmural infiltration with lymphocytes and granulomas without necrosis. What is the SINGLE most probable diagnosis?

A. **Caecal cancer**
B. **Lymphoma**

C. **Tuberculosis**
D. **Crohn's disease**
E. **Ulcerative colitis**

ANSWER:
Crohn's disease

EXPLANATION:
This is a difficult question to answer as there is not much background information interms of patient history or signs and symptoms in terms of patient presentation. Basedon the histology, we would be tempted to choose Crohn's disease as a diagnosis asCrohn's disease is known to have histopathology of:
· Abdominal mass palpable in right iliac fossa
· Increased goblet cells on histology
· Granulomas seen on histology
· Transmural, skip lesions, cobble stone appearance on endoscopy
· Kantor's string sign, rose thorn ulcers and fistulae are seen on a small bowelenema

Based on the histopathology ALONE the correct answer is D. In reality, the patientwould present with the classical signs and symptoms of Crohn's disease i.e:
· diarrhoea (which may be bloody and become chronic - ie present for more than six weeks)
· abdominal pain and/or weight loss
· periods of acute exacerbation, interspersed with remissions or less active disease.
· Systemic symptoms of malaise, anorexia, or fever
· Abdominal tenderness or distension, palpable masses.
· Anal and perianal lesions (pendulous skin tags, abscesses, fistulae) arecharacteristic.
· Mouth ulcers.

Some additional points to remember
To diagnose UC or CD:
1. Fecal calprotectin
2. AXR - to exclude colonic dilatation
3. Stool exam
4. Barium fluoroscopy
5. Sigmoidoscopy/colonoscopy + biopsy

Ulcerative Colitis Management
Inducing remission
Topical → Rectal Mesalazine better than rectal steroids
1st line → 5-ASA (e.g. oral mesalazine)
2nd line → Oral Prednisolone
If severe colitis, treat in hospital with IV steroids as first line.
Maintaining remission
oral aminosalicylates e.g. mesalazine

Management of Crohn's disease

Inducing remission

1st line → Oral Prednisolone

2nd line → 5-ASA drugs (e.g. mesalazine)

azathioprine or mercaptopurine may be used as an add-on medication to induceremission but is not used as monotherapy

metronidazole is often used for isolated perianal disease

Maintaining remission

1st line → azathioprine or mercaptopurine

Q-22

An 8 year old child presents with recurrent abdominal pain. He has three episodes of abdominal pain within the last 3 months and it is severe enough to affect his activity in school. The abdominal pain is intense and located periumbilically lasting for a few hours and is associated with nausea and episodic headaches. He maintains a good appetite and is an appropriate weight for his age. On examination, there were no significant findings. Full blood count, urea and electrolytesare found to be normal. What is the SINGLE most appropriate next step in management?

A. Ultrasound abdomen
B. Computed tomography abdomen
C. Reassure
D. Prescribe omeprazole
E. Admit and administer intravenous fluids

ANSWER:

Reassure

EXPLANATION:

Recurrent abdominal pain with episodic headaches in a child with no abnormal findingon examination and investigation, points towards a diagnosis of Abdominal Migraine.

Abdominal migraines are a type of functional pain. It is usually characterised by having:

• Paroxysmal episodes of intense, acute periumbilical pain lasting for one ormore hours
• Pain is dull or "just sore" quality
• Intervening periods of usual health, lasting weeks to months
• The pain interferes with normal activities
• The pain is associated with two or more of the following: anorexia, nausea,vomiting
• Not attributed to another disorder

Reassurance is all that is needed.

Q-23

A 52 year old alcoholic presents to the Emergency Department with complaints of

worsening epigastric and back pain. The pain is episodic and there are times that he is pain-free. He also complains of having loose pale, offensive stools. He has lost weight over the past few months which he attributes due to the fear of eating as the pains often worsen after eating. On examination, he has epigastric tenderness. An x-ray of the abdomen was performed which showed diffuse calcifications in the abdomen. What is the SINGLE most likely diagnosis?

A. **Acute pancreatitis**
B. **Chronic pancreatitis**
C. **Gastro-oesophageal reflux disease**
D. **Oesophagitis**
E. **Carcinoma of the head of pancreas**

ANSWER:
Chronic pancreatitis

EXPLANATION:
Chronic pancreatitis often presents with abdominal pain. Classically, the pain is located at the epigastrium and radiates to the back. The pain is worse after eating leading to a dislike of eating with consequent weight loss. The second most predominant feature is malabsorption which is represented here by steatorrhoea. Malabsorption again contributes to weight loss.

Alcohol is one of the significant risk factors for chronic pancreatitis but it is not a good hint to pick crhonic pancreatitis as the answer based on an alcohol history as alcohol also contributes to acute pancreatitis, gastro-oesophageal reflux, oesophagitis and indirectly to pancreatic cancer.

One might consider “Carcinoma of the head of the pancreas” as the answer given the similar symptoms of weight loss, epigastric pain and history of alcohol. In reality, it is difficult to differentiate the two hence the importance of imaging modalities such as ultrasounds and CT scans.

In chronic pancreatitis, plain abdominal films of pancreas can show diffuse calcifications which indicate significant damage to the pancreas. X-rays of the abdomen aer not one of the main imaging modalities of the pancreas, and it is usually done for other reasons such as to exclude bowel perforation in A&E. Again to stress that ultrasound and CT scans would be better imaging modalities for pancreatic diseases.

Q-24

A 44 year old male was admitted to the medical ward with complaint of diarrhoea, abdominal pain and weight loss for the last few months. The examination notes finger clubbing, perianal skin tags and abdominal tenderness. A colonoscopy reveals transmural granulomatous inflammation involving the ileocaecal junction. What is the SINGLE most likely diagnosis?

A. **Crohn's disease**
B. **Irritable bowel syndrome**
C. **Bowel cancer**
D. **Diverticulitis**
E. **Ulcerative colitis**

ANSWER:
Crohn's disease

EXPLANATION:
Transmural granulomatous inflammation involving the ileocaecal junction isone of the features seen in Crohn's diseaase.

Q-25

A 35 year old female presents with secondary amenorrhoea. Her blood tests show the following:

Serum bilirubin 42 micromol/L
Alanine transferase (ALT) 115 iu/L
Aspartate transaminase (AST) 89 iu/L
Alkaline phosphatase (ALP) 189 iu/L

What is the SINGLE most likely diagnosis?

A. **Primary sclerosing cholangitis**
B. **Autoimmune hepatitis**
C. **Primary biliiary cirrhosis**
D. **Acute liver failure**
E. **Gilbert's syndrome**

ANSWER:
Autoimmune hepatitis

EXPLANATION:
The combination of deranged LFTs combined with secondary amenorrhoea in a youngfemale strongly suggest autoimmune hepatitis.

In autoimmune hepatitis, serum aminotransferases: aspartate aminotransferase (AST)and alanine aminotransferase (ALT) are usually elevated at initial presentation. Serumalkaline phosphatase is normal or only mildly raised. A more than two-fold elevationsuggests an alternative or additional diagnosis.

Occasionally, the stem would include a form of another autoimmune disease such asaddison's disease, vitiligo, or an autoimmune thyroid disorder as this may be presentwith autoimmine hepatitis.

Autoimmune hepatitis
Autoimmune hepatitis (AIH) is a chronic disease of unknown cause, characterised bycontinuing hepatocellular inflammation and necrosis, which tends to progress tocirrhosis.

- Predominantly affects young or middle-aged women
- Up to 40% present with acute hepatitis and signs of autoimmune disease, eg fever, malaise, urticarial rash, polyarthritis, pleurisy, pulmonary infiltration, or glomerulonephritis. The remainder present with gradual jaundice or are asymptomatic and diagnosed incidentally with signs of chronic liver disease. Amenorrhoea is common and disease tends to attenuate during pregnancy.

Investigations:
The diagnosis rests on a combination of compatible biochemical, immunological andhistological features together with exclusion of other liver diseases.

Associated diseases
Concurrent autoimmune disorders occur in approximately 40% of patients, particularlyautoimmune thyroid disorder.

Q-26

A 46 year old woman presents with sudden episode of abdominal pain which started about 5 hours ago. The pain is located in the epigastrium and radiates to her back. She has vomited twice since the onset of attack. The pain is made worse by lying flat on her back and she is more comfortable sitting up and bending forwards. She was informed of the presence of gallstones in her gallbladder four weeks earlier when she reported pain in the right hypochondrium. Her temperature is 38.4 C, blood pressure is 120/85 mmHg, and pulse rate is 115 beats/minute. There is no presence of jaundice but there is marked tenderness in epigastrium. What is the SINGLE most appropriate investigation?

A. Abdominal X-ray
B. Serum amylase
C. Serum bilirubin
D. Barium swallow
E. Urea and electrolytes

ANSWER:
Serum amylase

EXPLANATION:
The likely diagnosis is acute pancreatitis. Serum amylase and lipase are appropriateinvestigations, looking for an elevation of more than 3 times the upper limit of normal.

While abdominal x-rays are not useful in the diagnosis of pancreatitis, they areroutinely ordered to exclude other potential causes of abdominal pain such asperforation or bowel obstruction.

Ultrasound is useful to detect the presence of gallstones but it is not a good diagnostictest for acute pancreatitis. The pancreas is poorly visualised in 25-50% of cases.

Urea and electrolytes and liver function test do not directly aid the diagnosis ofpancreatitis however, they are helpful in assessing the severity of the disease (e.g. byshowing the degree of leucocytosis or of hypovolaemia) or give clues of the aetiology ofpancreatitis (e.g. gallstone pancreatitis).

Q-27

A 56 year old man comes for a routine checkup. He is noted to have increased skin pigmentation, spider angioma and a heart murmur. He has mild joint pain particularly in those of the hands. He rarely drinks alcohol. On examination, his liver is firm and has a span of 10 cm. On further investigations of the heart murmur, he was given the diagnosis of restrictive cardiomyopathy. What is the SINGLE condition that he is most likely at risk of?

A. **Cerebellar degeneration**
B. **Gallstones**
C. **Renal failure**
D. **Hepatoma**
E. **Hepatic vein thrombosis**

ANSWER:
Hepatoma

EXPLANATION:
Hepatoma (more often called hepatocellular carcinoma) is a primary malignancy of theliver. The given scenario has features of haemochromatosis of which is among thecauses of restrictive cardiomyopathy. It is a very well known fact that. patients withhaemochromatosis have an increased risk of developing hepatocellular carcinoma.

The liver is a primary storage area for iron and will naturally accumulate excess iron.Over time the liver is likely to be damaged by iron overload causing cirrhosis. Cirrhosisand haemochromatosis together will increase the risk of hepatocellular carcinoma.

HAEMOCHROMATOSIS
Hereditary haemochromatosis (HHC) is an autosomal recessive genetic disease in whichincreased intestinal absorption of iron causes accumulation in tissues, especially theliver, which may lead to organ damage. Other organs that may be affected by irondeposits include the pancreas, joints, heart, skin and gonads.

Presentation
• Early diagnosis is difficult because HHC is often asymptomatic until the latestages of disease.
• Symptoms usually start between ages 40-60
• Initial symptoms are usually vague and nonspecific - eg, fatigue, weakness andheart problems
• HHC may be diagnosed incidentally - eg, following abnormal serum ferritin orLFTs
• Symptoms of advanced disease include:
  o Diabetes
  o Bronzing of the skin
  o Hepatomegaly
  o Cirrhosis
  o Arthropathy
  o Cardiac disease - arrhythmias or cardiomyopathy
  o Neurological or psychiatric symptoms - impaired memory, moodswings, irritability, depression

Remember the triad of diabetes, hepatomegaly and bronze pigmentation. This is seen in30% of patients with haemochromatosis and is a common presentation given in thequestions.

Q-28

A 15 year old child complains of right iliac fossa pain worsening over the past few weeks. He also has bouts of diarrhoea coming in episodes for more than a year. He has lost 7 kg in the last 5 months. On examination, perianal skin tags were seen. He was subsequently referred on to the gastroenterology team. A colonoscopy was performed which showed deep ulcers and skip lesions on the colonic mucosa. What is the SINGLE mot appropriate management?

A. Prednisolone
B. Mebeverine
C. Peppermint oil
D. Metronidazole
E. Vancomycin

ANSWER:
Prednisolone

EXPLANATION:
The diagnosis of Crohn's disease is quite clear here. Skip lesions is a give away that this is Crohn's disease. This is also supported by the weight loss and the perianal skin tags.

Q-29

A 36 year old bodybuilder presents with sudden onset of severe abdominal pain.

He was previously fit and well and only suffers from indigestion occasionally. He has been taking ibuprofen for a long term knee injury. On examination, he has a rigid abdomen, lies motionless on the bed and has no bowel sounds. His pulse rate is 115 bpm and blood pressure is 100/60 mmHg. What is the SINGLE most likely diagnosis?

A. **Biliary peritonitis**
B. **Ischaemic colon**
C. **Pancreatic necrosis**
D. **Perforated diverticulum**
E. **Perforated peptic ulcer**

ANSWER:
Perforated peptic ulcer

EXPLANATION:
The diagnosis here is perforated peptic ulcer induced by NSAIDs. The sudden onset, rigid abdomen, lying motionless and no bowel sounds are all hints that point towardes perforated peptic ulcer.

Q-30

A 69 year old smoker has had increasing dysphagia when eating solid food which has been ongoingfor the past 3 months. He has noticed a drop of 8 kg in wieght in the past few months. What SINGLE investigation is most likely to lead to a diagnosis?

A. **Barium swallow**
B. **Chest X-ray**
C. **Computed tomography chest**
D. **Endoscopy and biopsy**
E. **Videofluoroscopy**

ANSWER:
Endoscopy and biopsy

EXPLANATION:
The likely cause is oesophageal cancer where a malignant stricture or mass has resulted in difficulty in swallowing. An endoscopic biopsy is the definitive investigation.

Oesophageal cancer
Adenocarcinoma has now overtaken squamous cell carcinoma as the most common typeof oesophageal cancer

Risk factors

- Smoking → *risk factor for both adenocarcinoma and squamous cell carcinoma, but associated with a much higher risk for squamous cell carcinoma than adenocarcinoma.*
- Alcohol
- GORD
- Barrett's oesophagus → which is a precursor of adenocarcinoma
- Achalasia → *Chronic inflammation and stasis from any cause increase the risk ofoesophageal squamous cell carcinoma*

Very often in the stem, there would be a patient with a history of gastro-oesophagealreflux disease (GORD) or Barrett's oesophagus. Sometimes, they would give a history ofincreasing dysphagia and weight loss.

Diagnosis
- Upper GI endoscopy with brushings and biopsy of any lesion seen is the first line test
- CT or MRI scan of the chest and upper abdomen is performed for staging purposes

Q-31

A 70 year old woman is reviewed following a course of oral clindamycin for a right lower limb cellulitis. She was initially admitted in the hospital for 3 days for the management of her cellulitis as she was unable to weight bear. She was discharged 2 days ago and quickly developed bloody diarrhoea and abdominal pain. She has a temperature of 38.8 C. Her blood tests show:

Haemoglobin 125 g/L
White blood cells 18 x 10^9/L
CRP 160 mg/l

What is the SINGLE most likely management?

A. Oral co-amoxiclav
B. Intravenous piperacillin + tazobactam
C. Intravenous ceftriaxone
D. Oral metronidazole
E. Intravenous amphotericin

ANSWER:
Oral metronidazole

EXPLANATION:
The scenario shows a classical picture of Clostridium difficile of which oral metronidazole is a treatment for.

The two risk factors here are:
- Clindamycin – increase risk of Clostridium difficile infections

- Recently been in hospital – likely where she may have picked up C. diff

In the exam, look out for antibiotic usage like cephalosporins, clindamycin, co-amoxiclav, and amoxicillin as a cause for Clostridium difficile

Q-32

A 60 year old man presents with a lump in the left supraclavicular region. He complains that he does not eat as much anymore because he does not have the appetite. He has also lost 10 kg in the last 3 months. What is the SINGLE most probable diagnosis?

A. **Gastric cancer**
B. **Lymphoma**
C. **Pancoast tumour**
D. **Thyroid cancer**
E. **Laryngeal cancer**

ANSWER:
Gastric cancer

EXPLANATION:
The lump in the left supraclavicular region is known as a Virchow's node. It is indicative of carcinoma of the stomach. The weight loss and decreased appetite supports the diagnosis of gastric cancer.

Q-33

A 43 year old male alcoholic presents after a large haematemesis. He has some other spider naevi on his chest. His blood pressure is 100/76 mmHg and pulse rate is 110 beats/minute. On examination, a swollen abdomen with shifting dullness is seen. What is the SINGLE most likely diagnosis?

A. **Peptic ulcer**
B. **Mallory-Weiss tear**
C. **Oesophageal cancer**
D. **Oesophageal varices**
E. **Oesophagitis**

ANSWER:
Oesophageal varices

EXPLANATION:
Spider naevi and ascites are suggestive of liver disease. It is likely that with the historyof alcohol, and his signs and symptoms, he has a diagnosis of chronic liver diseasewhich has resulted in portal hypertension and bleeding from oesophageal varices.

Oesophageal varices

• Dilated sub-mucosal veins in the lower third of the oesophagus

This can lead to variceal haemorrhage which occurs from the dilated veins (varices) atthe junction between the portal and systemic venous systems. The bleeding is oftensevere and life-threatening. Majority of the patients would have a history of chronicliver disease.

Presentation:
• Haematemesis (most commonly), melaena
• Signs of chronic liver disease

Investigation:
• Endoscopy at early stage

Acute management of variceal bleeding
• Always start with ABC
• Correct clotting: FFP, vitamin K
• Vasoactive agents like terlipressin → Terlipressin should be offered to patientswith suspected variceal bleeding at presentation
• Antibiotic prophylaxis → reduces mortality in patients with acute upper GIbleeding in association with chronic liver disease
• Endoscopic variceal band ligation → If band ligation not available, useemergency sclerotherapy as first line
• Sengstaken-Blakemore tube if uncontrolled haemorrhage
• Transjugular Intrahepatic Portosystemic Shunt (TIPSS) if still unable to control bleeding

Prophylaxis of variceal haemorrhage
• Propranolol often given at discharge to reduce portal pressure in order to decrease the risk of repeat bleeding

Q-34

A 21 year old man has been brought to A&E by his friends as he is having a yellow scleraand yellowing of the skin. He has recently been having flu-like symptoms and a nonproductivecough. A urine dipstick was performed and was normal. His blood resultsshow:

Haemoglobin 129 g/dl
Reticulocytes 1.2%
Bilirubin 44 µmol/L
Alkaline phosphatase (ALP) 88
Alanine transferase (ALT) 24
Albumin 42

What is the SINGLE most likely diagnosis?

A. Acute hepatitis
B. Gilbert's syndrome
C. Dubin Johnson Syndrome
D. Glucose-6-phosphate dehydrogenase
E. Infectious mononucleosis

ANSWER:
Gilbert's syndrome

EXPLANATION:
Gilbert's syndrome is usually an autosomal recessive disorder and is a common cause ofunconjugated hyperbilirubinaemia due to decreased UGT-1 activity which is the enzymethat conjugates bilirubin with glucuronic acid.

It may go unnoticed for many years and usually presents in adolescence withintermittent jaundice occurring during illness, physical exertion, stress or fasting. In thisstem, the jaundice was precipitated by infection.

Investigations usually show a mildly raised serum bilirubin but the other LFTs remainwithin normal ranges as seen in this stem. FBC would show normal reticulocyte count -this helps distinguish Gilbert's syndrome from other types of haemolysis. Urinedipsticks would be seen as normal as it is the unconjugated bilirubin that is high (notthe conjugated bilirubin as would be seen in Dubin Johnson syndrome).

Remember, viral infections are common triggers for a rise in the bilirubin in patients with Gilbert's syndrome.

Q-35

A 33 year old pregnant woman develops severe epigastric pain, nausea and vomiting at35 weeks gestation. She was diagnosed with pre-eclampsia 2 weeks ago. Onexamination, she has yellow sclerae. Laboratory investigations show a deranged liverfunction, low platelets, low serum glucose, raised serum ammonia. What is the SINGLEmost likely diagnosis?
A. Acute fatty liver of pregnancy
B. Hyperemesis gravidarum
C. Biliary colic
D. HELLP syndrome
E. Autoimmune hepatitis

ANSWER:
Acute fatty liver of pregnancy

EXPLANATION:
Acute fatty liver of pregnancy (AFLP) and HELLP (Haemolysis, Elevated Liver enzymes,Low Platelets) syndrome both have low platelets and deranged liver function as part ofthe clinical picture. However, low serum glucose and/or raised serum

ammonia aremore suggestive of AFLP. Vomiting is also more commonly seen in AFLP than HELLPsyndrome.

Acute fatty liver of pregnancy
Acute fatty liver of pregnancy (AFLP) is a rare form of jaundice in pregnancy. It occurslate in pregnancy and may be life-threatening. The aetiology of AFLP is unknown. It ispart of the spectrum of disorders related to pre-eclampsia. Differentiation from HELLP(Haemolysis, Elevated Liver enzymes, Low Platelets) syndrome can be difficult as signs
and symptoms can overlap.

Risk factors
• Pre-eclampsia → There is associated pre-eclampsia in 30–60% of AFLP
• First pregnancies
• Multiple pregnancy

Presentation
• Presents acutely with:
  o Nausea
  o Vomiting
  o Abdominal pain
  o Fevers
  o Headache
  o Pruritus
  o Jaundice
• Begins typically after 30 weeks of gestation
• It also may also appear immediately after delivery

Severe hypoglycaemia and clotting disorder may develop causing coma and death

Investigations
• Liver transaminases are elevated (ALT is typically elevated more than 500 U/L)
• Raised serum bilirubin
• Hypoglycaemia
• Abnormal clotting with coagulopathy (prolongation of prothrombin and partial thromboplastin times)
• Biopsy would be diagnostic

Management *(Unlikely to be asked in detail for the level of PLAB exam)*
• Treat hypoglycaemia
• Correct clotting disorders
• N-acetylcysteine (NAC) (Unlicensed use)
• Consider early delivery **A**

DIFFERENTIATING AFLP FROM HELLP
Acute fatty liver of pregnancy vs Haemolysis, Elevated Liver Enzymes, Low Platelets

syndrome

It is unlikely you would need to know all the different features of HELLP and AFLP for the level of the PLAB exam as even senior medical and obstetric teams often have difficulty telling them apart in a clinical setting, however, this table is inserted for those who would like to understand how to differentiate them for your own clinical knowledge

	HELLP	AFLP
Epigastric pain	++	+
Vomiting		++
Hypertension	++	+
Proteinuria	++	+
ALT/AST	+	+
Hypoglycaemia		++
Hyperuricaemia	+	++
DIC	+	++
Thrombocytopenia	++	+
WBC	+	++
Ammonia		++
Acidosis		++
Haemolysis	++	

Q-36

A 28 year old man has intermittent diarrhoea, fatigue and weight loss over the last 6 months. He has excluded gluten from his diet in the last 2 months and his symptoms have resolved. He wants to be tested to confirm the diagnosis of coeliac disease. What is the SINGLE most appropriate next step in action?

A. Jejunal biopsy
B. Reintroduce gluten prior to testing
C. Sweat test
D. Tissue transglutaminase antibodies
E. Stool sample

ANSWER:
Reintroduce gluten prior to testing

EXPLANATION:
If patients are already taking a gluten-free diet they should be asked, if possible, to reintroduce gluten for at least 6 weeks prior to testing. Serology test and jejunal biopsies may come back negative ifpatient is currently on a gluten-free diet.

Q-37

A 22 year old female comes to the GP surgery with complaints of diarrhoea for several months which have been worsening over the past week. She says that she opens her bowels in excess of five times in a day for the past week. She also

has recurrent bloating that makes her very uncomfortable, with right sided abdominal pain. The pain is mild and does not interferre with her daily activities, but she is quite concerned about the blood in stools which she noticed this morning. She leads a busy lifestyle, holding down two jobs and has had some recent weight loss which she attributes to stress and poor nutrition. She smokes a pack of cigarettes a day to deal with her stress. There is no significant past medical history. On physical examination, the patient appears pale. Her body mass index is 17 kg/m^2. On further oral examination, she is noted to have multiple ulcers in her mouth. Abdominal examination reveals distended abdomen, tenderness on right lower quadrant with no palpable masses. What is the SINGLE most likely cause of her condition?

A. **Crohn's disease**
B. **Ulcerative colitis**
C. **Coeliac disease**
D. **Colon cancer**
E. **Medications**

ANSWER:
Crohn's disease

EXPLANATION:
The patient is suffering from Crohn's disease. In this scenario, we have multiple clues which point towards Crohn's disease such as diarrhoea with the location of abdominal pain. The common site of the pain in Crohn's disease is the lower right side of the abdomen due to the involvement of the small intestine (ileum). Other common features are weight loss and mouth ulcers. Another subtle hint is the smoking history. Smoking increases the risk of developing Crohn's by about three to four times.

While ulcerative colitis also can present as chronic diarrhoea, it more often involves the other part of the colon (left sided colitis)

In coeliac disease, the diarrhoea is mainly due to malabsorption, which leads to abnormally high levels of fat in stools termed as steatorrhoea, which is not the case in this patient.

Colon cancer is the last thing that you should be thinking of in a patient in this age group.

Medications are not the right option as there is no significant past medical history in this patient.

Q-38

A 26 year old young man presents to the GP surgery with a history of passing loose stools for the past 2 months. He says his stools contain a small amount of blood and mucous and are associated with abdominal pain. He has around 4 to 5

bowel movements a day. A colonoscopy was organised and performed which he was started on treatment. What is the SINGLE most appropriate treatment for his condition?

A. **Mesalazine**
B. **Corticosteroids**
C. **Mebeverine**
D. **Cyclosporine**
E. **Peppermint oil**

ANSWER:
Mesalazine

EXPLANATION:
The clinical features and treatment after colonoscopy suggests diagnosis of ulcerative colitis for which initial treatment of mild to moderate symptoms are mesalazine.

Q-39

A 33 year old female has intermittent diarrhoea and abdominal bloating which is usually exacerbated by consumptiion of wheat and eggs. She has been feeling more tired in the past few months. She has no significant weight loss. What is the SINGLE most likely diagnosis?

A. **Coeliac disease**
B. **Ulcerative colitis**
C. **Crohn's disease**
D. **Gastroenteritis**
E. **Malabsorption**

ANSWER:
Coeliac disease

EXPLANATION:
The best answer here is coeliac disease. Whilst it is true that coeliac disease causes malabsorption which accounts for the intermittent diarrhoea and abdominal bloating, the more specific answer is still Coeliac disease since there is a history of wheat in the diet.

Eggs actually do not exacerbate coeliac disease as it is not gluten however her meals which contain wheat is likely the cause of her malabsorption symptoms.

Q-40

A 42 year old man with type 2 diabetes presents with fatigue and shortness of breath. He is noted to have a bronze tinge to his skin. Abdominal examination reveals hepatomegaly. His blood test show a high ferritin level. A diagnosis has been made but he is refusing all treatment. Which organ is the most likely to be at risk of developing cancer?

A. **Testes**
B. **Adrenal gland**
C. **Liver**
D. **Pancreas**
E. **Heart**

ANSWER:
Liver

EXPLANATION:
The diagnosis here is haemochromatosis. The liver is a primary storage area for iron and will naturally accumulate excess iron. Over time, the liver is likely to be damaged by iron overload causing cirrhosis. Cirrhosis and haemochromatosis together will increase the risk of hepatocellular carcinoma.

Q-41

A 42 year old female presents to her GP following a staging CT for her recently diagnosed renal cell carcinoma. On the CT scan, gallstones were noticed in the gallbladder. She has no history of abdominal pain or jaundice and is otherwise well. A left sided nephrectomy for her renal cell carcinoma has been scheduled. What is the SINGLE mot appropriate course of action?

A. **Ultrasound abdomen**
B. **ERCP (Endoscopic Retrograde Cholangiopancreatography)**
C. **MRCP (Magnetic Resonance Cholangiopancreatography)**
D. **Reassurance**
E. **Laparoscopic cholecystectomy**

ANSWER:
Reassurance

EXPLANATION:
Reassurance is the correct option here. It is reserved for patients who are asymptomatic and have stones in their gallbladder. Stones that are found incidentally, as a result of imaging investigations unrelated to gallstone disease in patients who are asymptomatic do not require any intervention. But be aware that if the gallstones were found in the common bile duct instead of the gallbladder, then a laparoscopic cholecystectomy may be needed regardless if they are symptom free or have symptoms.

Q-42

A 45 year old man had his head of pancreas removed due to malignancy. 10 days later, he complains of worsening abdominal pain. On examination, he has a rigid abdomen which is tender. He has a temperature of 37.5 C, a blood pressure of 95/55 mmHg and a pulse rate of 125 bpm. His past medical history includes

peptic ulcer disease. What is the SINGLE most appropriate next action?

A. **CT abdomen**
B. **Erect chest X-ray and abdominal X-ray**
C. **MRI abdomen**
D. **US abdomen**
E. **Endoscopy**

ANSWER:
Erect chest X-ray and abdominal X-ray

EXPLANATION:
This is a case of perforated peptic ulcer with the features of shock, abdominal rigidity and raised temperature. Perforation of a peptic ulcer causes an acute abdomen with epigastric pain that may progress to generalised rigidity.

The stress of an operation may cause the body to produce higher amounts of acid, which can irritate preexisting ulcers leading to easy perforation. A diagnosis is made by taking an erect abdominal/chest X-ray (seeking air under the diaphragm).

Q-43

A 48 year old female presents with tiredness and painless dysphagia. She complains of a feeling of something stuck in her throat. A full blood count shows microcytic, hypochromic anaemia. On examination, glossitis is noted. An oesophageal web is found at the post cricoid region. What is the SINGLe most likely diagnosis?

A. **Coeliac disease**
B. **Plummer-Vinson syndrome**
C. **Pharyngeal carcinoma**
D. **Barrett's oesophagus**
E. **Oesophageal carcinoma**

ANSWER:
Plummer-Vinson syndrome

EXPLANATION:
When someone presents with dysphagia, glossitis and iron deficiency anaemia, Plummer Vinson syndrome is your answer.

Plummer Vinson syndrome
• A condition where iron deficiency is associated with a postcricoid oesophagealweb

The syndrome most often affects middle-aged women.

Presentation:

• Painless, intermittent dysphagia → due to oesophageal webs
• Symptoms of iron-deficiency anaemia

Management:
• Iron supplements
• Dilation of the webs

Q-44

A 49 year old female presents with right hypochondrial pain. An ultrasound shows a large gallstone. Her BP is 120/85 mmHg; respiratory rate 18/min; Heart rate 90 bpm; Temperature 37.6 C; WBC 15 x 10^9/L. What is the SINGLE most appropriate treatment?

A. **Laparoscopic cholecystectomy**
B. **Reassure**
C. **Low fat diet**
D. **Ursodeoxycholic acid**
E. **Emergency laparotomy**

ANSWER:
Laparoscopic cholecystectomy

EXPLANATION:
As she is symptomatic, reassurance is out of the question. The two remaining options are laparoscopic cholecystectomy or emergency laparotomy. Laparoscopic cholecystectomy is the preferred option here as there are no signs of gallbladder perforation. Laparotomy has higher risk as it is much more invasive.

Q-45

A 41 year old man has had a liver biopsy as part of investigations for abnormal liver function test. The pathology report states: special stains demonstrate the presence of a very large amount of iron pigment within hepatocytes. What SINGLE condition is identified by the pathology report?

A. **Alpha-1-antitrypsin deficiency**
B. **Haemangioma**
C. **Haemochromatosis**
D. **Haemosiderosis**
E. **Wilson's disease**

ANSWER:
Haemochromatosis

EXPLANATION:

In haemochromatosis, characteristically, the iron is found predominantly in a periportal distribution (acinar zone 1) within the hepatic lobule, with virtually all iron deposited in parenchymal hepatocytes and none in Kupffer cells.

By contrast iron overload in haemosiderosis causes to accumulation of iron granules predominantly in kupffer cells and more in central area rather than peripheral hepatocyte.

Since the question gives a pathology report of large amount of iron pigment in hepatocytes rather than Kupffer cells, the diagnosis is haemochromatosis.

Q-46

A 51 year old man has become increasingly fatigued over the past 10 months. Hismedical history includes having a gastrectomy a year ago. His physicalexamination isunremarkable. His blood tests show:

Haemoglobin 85 g/L
White cell count 7 x 109/L
Platelets 240 x 109/L
Mean cell volume 129 fL

What is the SINGLE most likely finding on a blood smear?

A. Hypersegmented neutrophils
B. Nucleated RBC
C. Blasts
D. Hypochromic, microcytic RBC
E. Schistocytes

ANSWER:
Hypersegmented neutrophils

EXPLANATION:
These findings together with a history of a gastric resection whereby malabsorption ofB12 could occur, points towards the diagnosis of B12 deficiency. Mean cell volume isalso increased which supports that diagnosis. Hypersegmented neutrophils are seen onblood smear in megaloblastic anaemias.

Q-47

A 50 year old man has severe pain on defecation. On examination, a tender, reddishblue swelling is seen near the anal verge. What is the SINGLE most likely diagnosis?

A. Perianal abscess
B. Perianal haematoma
C. Pilonidal cyst

D. Haemorrhoids
E. Anal fistula
Perianal haematoma

ANSWER:
Perianal haematoma

EXPLANATION:
Perianal haematoma
Strictly speaking, it is actually a clotted venous saccule. It appears as a 2-4mm ‘darkblueberry’ (purple colour) under the skin at the anal margin. It is seen as swollen andacutely tender perianal lumps.

Management:
It may be evacuated under local anaesthesia or left to resolve spontaneously.

- Incision and drainage of the clot relieve pain but the thrombosis often recurs and there may be persistent bleeding.
- Conservative treatment includes analgesia, ice packs and stool softeners. A topical calcium antagonist may help to relieve pain. If managed conservatively, symptoms usually settle within 10-14 days

Q-48

A 28 year old female presents with 1 week history of jaundice, fever and malaise. Shewas diagnosed with hypothyroidism for which she is receiving levothyroxine. Her bloodtests show:

Serum bilirubin 40 µmol/L
Alanine transferase (ALT) 120 iu/L
Aspartate transaminase (AST) 90 iu/L
Alkaline phosphatase (ALP) 200 iu/L
Prothrombin time (PT) 25 sec

What is the SINGLE most likely diagnosis?

A. Acute on chronic liver failure
B. Hyperacute liver failure
C. Autoimmune hepatitis
D. Acute liver failure
E. Drug induced hepatitis

ANSWER:
Autoimmune hepatitis

EXPLANATION:
In autoimmune hepatitis, serum aminotransferases: aspartate aminotransferase (AST)and alanine aminotransferase (ALT) are usually elevated at initial presentation.

Serumalkaline phosphatase is normal or only mildly raised. A more than two-fold elevationsuggests an alternative or additional diagnosis. Hypoalbuminaemia and prolongation ofprothrombin time are markers of severe hepatic synthetic dysfunction.

These lab test do not rule out other liver diseases but given the combination of the presence of another autoimmune disease like hypothyroidism, the most likely diagnosis here is autoimmune hepatitis.

Q-49

A 35 year old man presents with burning retrosternal pain for the past few days. He has recently completed a course of treatment for H. pylori. Endoscopy shows multiple ulcers along the lower esophagus, stomach and duodenum. What is the SINGLE next most appropriate investigation?

A. **Computed tomography of the abdomen**
B. **Colonoscopy**
C. **Gastrin levels**
D. **Urease test**
E. **Barium swallow**

ANSWER:
Gastrin levels

EXPLANATION:
The gastrin levels need to be checked to rule out a gastrinoma

A gastrinoma is a neuroendocrine tumor usually found in the pancreas or duodenum.

These tumours secrete gastrin which stimulates parietal cells of the stomach to secrete hydrochloric acid into the stomach cavity leading to intractable peptic ulcerations. Gastrinomas are suspected when peptic ulcers occur at unusual sites, such as the second part of the duodenum or the jejunum, or ulcers recur after adequate surgery. One-third of patients have watery diarrhoea due to high gastric output. Diagnosis is made by measurement of fasting gastrin levels or secretin stimulation test.

ZOLLINGER-ELLISON SYNDROME
Zollinger-Ellison syndrome is characterised by gastric acid over secretion due to excessive levels of gasgtrin secreted from tumours found in the duodenum or pancreas. It presents as severe peptic ulcer disease, gastro-oesophageal reflux, and diarrhoea.

When to suspect Zollinger-Ellison syndrome?
Suspect in those with:
- Mulitiple peptic ulcers resistant to drugs
- If associated with diarrhoea or steatorrhoea
- Associated with family history of peptic ulcers

Q-50

A 42 year old obese female has severe upper abdominal pain. She vomited severaltimes today. She has a temperature of 37.8°C. She is married and has 5 living children.She has no previous surgeries. Her blood count shows:

Haemoglobin 123 g/L
White cell count 17.3 x 109/L
Platelets 150 x 109/L

What is the SINGLE most likely diagnosis?

A. Ectopic pregnancy
B. Ovarian torsion
C. Hepatitis
D. Endometriosis
E. Cholecystitis

ANSWER:
Cholecystitis

EXPLANATION:
Remember the mnemonic for gallstones: 5Fs: Female, Forties, Fair, Fertile, Fat

Q-51

A 47 year old woman diagnosed with coeliac at the age of three has recently developed diarrhoea and weight loss for the past three months. What is the SINGLE most likely reason for this?

A. Tapeworm infection
B. Lymphoma of the small intestine
C. Tuberculosis
D. Giardia
E. Irritable bowel syndrome

ANSWER:
Lymphoma of the small intestine

EXPLANATION:
One must remember the cancer risk associated with coeliac disease. Intestinal lymphoma is one of them.

Q-52

A 58 year old man has been having frequent episodes of secretory diarrhea for the past 2 weeks. His diarrhoea is extremely watery with large amounts of mucus. A diagnosis of villous adenoma was made after performing an endoscopy. What is the SINGLE most likely electrolyte abnormality?

A. Hyperkalemia
B. Hypernatremia
C. Hyponatremia
D. Hypokalemia
E. Hypercalcemia

ANSWER:
Hypokalemia

EXPLANATION:
This is a very high yield question and you need to remember that villous adenoma is one of the causes of hypokalaemia.

Q-53

A 45 year old smoker has suspected oesophageal carcinoma with a mass seen within the middle third of the oesophagus with metastasis to the liver. He has severe dysphagia. What is the SINGLe most appropriate management to treat his symptoms?

A. Nasogastric tube
B. Radiotherapy
C. Percutaneous gastrostomy
D. Resection
E. Stenting

ANSWER:
Stenting

EXPLANATION:
Dysphagia from inoperable oesophageal cancer isa complex issue with little consensus on the ideal management approach. For advanced cases of oesophageal cancer that are causing dysphagia, insertion of a stent into the oesophagus may be recommended. The stent expands once in place and holds the oesophagus open to manage symptoms of dysphagia.

Although radiotherapy also provides symptom relief (long-term relief), the waiting times for initiation of radiotherapy is long, and there are long lag times between initiation of treatment and relief of symptoms. Endoluminal stents provides more rapid and effective early relief for symptomatic patients.

Percutaneous endoscopic gastrostomy (PEG) is an endoscopic medical procedur in which a tube is passed into a patient's stomach through the abdominal wall to provide a means of feeding when oral intake is not adequate. This is usually in stroke patients who are at the risk of aspiration pneumonia or to decompress the stomach in cases of gastric volvulus.

OESOPHAGEAL STENT
An oesophageal stent is a tube placed in the oesophagus to keep a blocked area open so that the patient can swallow soft food and liquids. Oesophageal stents may be self-expandable metallic stents, or made of plastic, or silicone. They are used primarily in palliative cancer treatment.

Q-54

A 76 year old man is on treatment for prostate cancer and bone metastasis. He complains of only passing stool once every four to five days. He drinks adequate fluids and describes his stool as being soft. What is the SINGLE most appropriate management for his constipation?

A. Stool softeners
B. Senna
C. Phosphage enema
D. Low residue diet
E. Lactulose

ANSWER:
Senna

EXPLANATION:
Since this patient is on treatment for prostate cancer and bone metastasis, logic dictates that he would also be taking a large amount of opioid medication. One of the side effects of opioid based medication, such as morphine, is constipation.

Since he is only complaining of constipation and not hard stool, stool softeners is incorrect.

He has no evidence of having impacted stool and therefore, phosphate enema is incorrect.

A low residue diet is a low fibre diet. This is blatantly incorrect answer in the choices.

So we are left with two choices: senna and lactulose

According to NICE CKS, we should try interventions for constipation in this order.
1. High fibre diet
2. Stimulatant laxative (senna)
3. Osmotic laxative (laculose/macrogol)
4. Add on a prokinetic agent such as metoclopramide, domperidone, or erythromycin
5. Consider the use of a dantron-containing laxative
6. Seek specialist advice if the patient is still experiencing constipation

Q-55

A 58 year old man presents with a lump in the left supraclavicular fossa. It has been present for the last 6 months. He also complains of dyspepsia and weight loss which he accounts for due to his reduced appetite. What is the SINGLE most likely term for the lump?

A. **Virchow's node**
B. **Lymphoma**
C. **Pancoast tumour**
D. **Thyroglossal cyst**
E. **Reactive lymph nodes**

ANSWER:
Virchow's node

EXPLANATION:
The lump in the left supraclavicular region is known as a Virchow's node. It is indicative of carcinoma of the stomach. The weight loss and decreased appetite support the diagnosis of gastric cancer.

Q-56

A 35 year old man presented to his GP with the complaint of heartburn. This first occurred four weeks ago when he noticed epigastric pain with acid-reflux causing a sore throat in his mouth following a meal. At the time of presentation, he claimed that the only discomfort that he experienced was tenderness and pain in his epigastric region. He complained of no altered bowel habits, sweating, dysphagia or generalised weakness. There was no history of non-steroidal anti-inflammatory drug (NSAID) use or recent infections. A neighbour advised him to try a popular heartburn remedy so he went to his local pharmacy andtried an over-the-counter medication (Gaviscon ®). This only improved his symptoms minimally. The patient's past medical history is significant for hypertension, diagnosed two years ago which is now well controlled with medication. He used to drink around two to four cups of coffee per day which he claims he has now reduced to one cup per day. He has no history of smoking and only drinks socially. Following his consultation, the patient was subsequently further investigated for a Helicobacter pylori infection, and the test returned with a positive result. He was started on triple therapy to eradicate his Helicobacter pylori infection and his treatment regimen was successfully completed. He has now returend for a review and states that he is still suffering from heartburn and indigestion. What is the SINGLE most appropriate test to ensure the eradication of Helicobacter pylori?

A. **C13 urea breath test**
B. **C14 urea breath test**
C. **H. pylori antibodies**
D. **Endoscopy**
E. **Stool antigen test**

ANSWER:
C13 urea breat test

EXPLANATION:
It is only necessary to check for the eradication of Helicobacter pylori in patients whose symptoms return. In this case, the patient was tested positive for Helicobacter pylori and started on triple therapy. His history shows that his compliance was good and that he successfully finished his treatment. However, he still complains of indigestion. So the issue in this question is to choose the single best test that will confirm the eradication of Helicobacter pylori.

We know that the answer is a urea breath test as that is the only test that NICE recommends post eradication, but is the answer a C13 urea breath test or a C14 urea breath test?

According to the National Institute for Health and Care Excellence (NICE), the urea breath test is the only current valid method for detecting eradication of Helicobacter pylori infection. Urea can be labelled with two different carbon isotopes: C14 and C13. The main difference between them is that the former is radioactive, whereas the latter is stable. The C13 urea breath test is the recommended test to perform. This is because it is a non-radioactive isotope which can be used safely for repeated testing, which is frequently required in clinical practice.

Endoscopy is only required if H. pylori is completely eradicated, as shown by urea breath testing, to further investigate the cause of dyspepsia.

Q-57

A 54 year old man presents with a worsening history of intermittent dysphagia over aperiod of 3 months. He has not experienced any weight loss and complains ofsometimes regurgitating food, after which he says he experiences a feeling of greatrelief. He has a history of recurrent respiratory tract infections over the past few yeaers. He is a non smoker. What is the SINGLE most likely diagnosis?

A. Achalasia
B. Oesophageal carcinoma
C. Scleroderma
D. Plummer-Vinson syndrome
E. Barrett's OesophagusA

ANSWER:
Achalasia

EXPLANATION:
Note that in achalasia the symptoms can also be intermittent. It usually presents with gradually progressive, intermittent dysphagia. The dysphagia associated with

oesophageal carcinoma is more rapid than achalasia. In achalasia, they may have a history of recurrent respiratory tract infections like in this stem.

Q-58

A 39 year old woman is admitted with central abdominal pain radiating through to theback. She has vomited several times in the last 24 hours. She denies any diarrhoea. Bending forward helps alleviate the pain. On examination, there is epigastric tenderness associated with guarding. She has a blood pressure of 100/70 mmHg, a respiratory rate of 20 breaths/minute, a pulse rate of 106 beats/minute and a temperature of 37.9 C. Her blood test show:

Amylase 1335 U/mL (Elevated)
CRP 214 mg/L
White cell count (WCC) 19.6 x 10^9/L

What is the SINGLE best step in management?

A. **Parenteral nutrition**
B. **Fluid resuscitation, analgesia and nutritional support**
C. **Urgent laparoscopy**
D. **Intravenous antibiotics**
E. **Cholecystectomy**

ANSWER:
Fluid resuscitation, analgesia and nutritional support

EXPLANATION:
The likely diagnosis is acute pancreatitis given the elevated amylase.

The initial treatment for acute pancreatitis is supportive and includes earely fluid resuscitation, analgesia, and nutritional support.

Parenteral nutrition is only used when the enteral route is not tolerated, or if it is not meeting specific caloric requirements.

Surgical debridement may be required where there is proven infection and necrosis. Note that laparoscopic surgical debridement has largely been replaced by newer minimally invasive techniques such as transgastric endoscopy and video-assisted translumbare retroperitoneal necrosectomy followd by closed lavage of infected pancreatic necrosis and so urgent laparoscopy is not the answer here. Also remember that there need to be some evidence of necrosis before surgical debridement is considered.

Intravenous antibiotics (e.g. IV imipenem) can be started in moderate to severe cases even without evidence of infected necrosis. This should preferably follow percutaneous aspiration of peritoneal fluid for culture however in this case, fluid resuscitation,

analgesia and nutritional support are more important than just antibiotics.

60% of acute pancreatitis in adults in the UK are due to gallstones and thus cholecystectomy can be considered but should only be considered after the initial symptoms of acute pancreatitis have resolved.

Q-59

A 38 year old man complains of "crushing" chest discomfort for 1 hour that started when he drank a cold drink. He has no significant medical history. ECG shows sinus rhythm. He is given sublingual nitroglycerin in the emergency room that improves his chest pain almost immediately. He has a pulse of 70 beats/minute, a blood pressure of 130/80 mmHg and a respiratory rate of 18 breaths/minute. Cardiac enzymes came back negative. What is the SINGLE most likely diagnosis?

A. **Myocardial infarction**
B. **Pericarditis**
C. **Oesophageal spasm**
D. **Pulmonary embolism**
E. **Pneumothorax**

ANSWER:
Oesophageal spasm

EXPLANATION:
The pain statrted when he drank a cold drink. The most likely answer here is oesophageal spasm

Q-60

A 28 year old female presents with a 4 month history of diarrhoea, lethargy and weight loss. She complains of abdominal discomfort and passing stools more than 6 times a day. An endoscopy was performed which shows cobblestone mucosa. What is the SINGLE most likely diagnosis?

A. **Amoeba**
B. **Colon cancer**
C. **Infective diarrhoea**
D. **Crohn's disease**
E. **Ulcerative colitis**

ANSWER:
Crohn's disease

EXPLANATION:
The diagnosis of Crohn's disease is quite clear here. Lethargy and weight loss are non specific signs that can occur in Crohn's disease. The give away here is the cobblestone

mucosa that is seen on endoscopy which is pathognomic for Crohn's disease.

Q-61

A 64 yeaer old man presents to the clinic with lethargy and a dull pain in the right hypochondrium that has been worsening over the past for a few months. He has significant weight loss over the last several weeks. On examination, he is noted to have a slight yellow tinge of his skin and whites of his eyes. Abdominal palpation reveals a tender right upper quadrant with a firm, enlarged liver. Further investigations were performed over the next few weeks. The histology of his liver biopsy returns with the report showing evidence of adenocarcinoma and immunostaining of Thyroid transcription factor 1 (TTF-1) which indicates a primary pulmonary tumour. What is the SINGLe most likely route of metastases in this patient?

- **A. Haematogenous**
- **B. Lymphatic**
- **C. Direct infiltration**
- **D. Transcoelomic**
- **E. Diaphragmatic**

ANSWER:
Haematogenous

EXPLANATION:
Haematogenous spread to the liver from lung is the most common route of metastases.

TTF-1 is a protein seen by immunostaining which is used as a clinicalmarker of lung adenocarcinoma.

Q-62

A 39 year old patient was recently diagnosed with coeliac disease and has been treatedwith a gluten free diet for 2 years. He now has an exacerbation of the classic symptomsof coeliac disease such as abdominal pain, diarrhoea, and has loss significant weight.The biopsy of the small intestine shows lymphomatous infiltrates.

What is the SINGLEmost likely diagnosis?

A. Lymphoma
B. Diverticular disease
C. Lynch syndrome
D. Gastric tuberculosis
E. Peritoneal tumor

ANSWER:
Lymphoma

EXPLANATION:
Enteropathy-associated T-cell lymphoma (EATL) is a complication of celiac disease (CD).
This tumor derives from the neoplastic transformation of aberrant intraepithelial Tlymphocytes emerging in coeliac patients unresponsive to a gluten-free diet.

Biopsy may show lymphomatous infiltrates accompanied by a prominent mixedinflammatory infiltrate composed of histiocytes, small lymphocytes, plasma cells, andeosinophils, which may obscure the neoplastic cells.

Just keep in mind that lymphoma should be at the top of the list of answers when you see a patient with coeliac disease in the PLAB exam.

Q-63

A 41 year oldman with type 2 diabetes mellitus presents to the clinic with complaints of pain in hisjoints and an unusual increase in breast size. He feels increasingly fatigued over the past few months. On examination, there is a deep tan color of hisskin and his liver is enlarged on palpation. What is the SINGLE most likely diagnosis?

- **A. Haemochromatosis**
- **B. Prolactinoma**
- **C. Hemosiderosis**
- **D. Wilson's disease**
- **E. Liver cancer**

ANSWER:
Haemochromatosis

EXPLANATION:
The deep tan color of the skin with the combination of diabetesis termed "bronze diabetes": and it is seen in haemochromatosis. The iron overload can also cause symptoms of arthropathy and gynaecomastia.

Q-64

A 56 year old woman has had severe abdominal pain for 24 hours radiating to her back and is accompanied by nausea and vomiting. She denies any diarrhoea or fever. She appears to be tachycardic and in shock. She has a history of gallstones. What is the SINGLE most likely investigations to confirm the diagnosis?

- **A. Ultrasound abdomen**
- **B. Abdominal X-ray**
- **C. Serum lipase**
- **D. Urea andelectrolytes**

E. Liver function test

ANSWER:
Serum lipase

EXPLANATION:
Please see Q-17

Q-65

A 60 year old man presents with weight loss and complains of mild abdominal pain, bloating and diarrhoea for the past 6 months. A recent blood test shows a haemoglobin of 7 g/dl. What is the SINGLE most appropriate investigation?

A. Barium enema
B. Colonoscopy
C. Sigmoidoscopy
D. Compute tomographic (CT) colonography
E. Carcinoembryonic Antigen (CEA)

ANSWER:
Colonoscopy

EXPLANATION:
Colonoscopy would be able to diagnose majority of the causes of change of bowel habitand weight loss. The likely diagnosis here is colorectal cancer although inflammatorybowel disease could also present with similar features (e.g. weight loss, abdominalpain, and anaemia). Whatever the cause, a colonoscopy and biopsy is the gold standardto give us a diagnosis.

Colorectal carcinoma diagnosis
Colonoscopy is still the preferred diagnostic investigation. Alternatives to colonoscopyinclude barium enema and CT colonography.

If a patient is without major comorbidities, colonoscopy should be offered to diagnosecolorectal cancer. If a lesion suspicious of cancer is detected, a biopsy sample should besent for histology.

Flexible sigmoidoscopy, then barium enema can be used as an alternative tocolonoscopy for patients with major comorbidity. Barium enema may also be used ifcolonoscopy fails to visualise the caecum or if the patient is unable to tolerate thecolonoscopy procedure.

Computed tomographic (CT) colonography can also be used as an alternative if the localradiology service can demonstrate competency in this technique. If a lesion suspicious of cancer is detected on CT colonography, a colonoscopy with biopsy to confirm thediagnosis should be performed.

The tumour marker Carcinoembryonic Antigen (CEA) is of no use for diagnosis orstaging, but can be used to monitor disease relapse if raised at diagnosis and falls tonormal after resection.

Q-66

A 38 year old man has just returned from Kenya a few days ago. Since his return, he has developed watery diarrhoea with crampy abdominal pain. What is the most likely causative organism?

A. **Giardia**
B. **Entamoeba**
C. **Shigella**
D. **Salmonella**
E. **Eschericia coli**

ANSWER:
Eschericia coli

EXPLANATION:
The most common organism that causes traveller's diarrhoea is E. coli. It will usually cause a mild self-limiting diarrhoea for less than 72 hours.

Q-67

A 44 year old man who has attended the Emergency Department multiple times in the past several months with complaints of upper abdominal pain. He develops episodes of pain lasting for weeks. There has been a gradual rise in his amylase on every visit. He has had a variety of investigations to explore the cause during his previous visits. These included gastroscopy and an ultrasound which was found to be normal. On examination, his abdomen is soft and mildly tender at the epigastrium. What is the SINGLE most likely cause of his abdominal pain?

A. **Excessive alcohol intake**
B. **Viral infection**
C. **Bacterial infection**
D. **Opiate abuse**
E. **Cystic fibrosis**

ANSWER:
Excessive alcohol intake

EXPLANATION:
Around 80% of chronic pancreatitis results from alcohol excess in developed countries. Given his recurrent presentation over several months we can say this is chronic. Patients with chronic pancreatitis usually have constant and relapsing episodes of upper abdominal pain lasting for days or weeks. He would likely go on to have a CT scan of

his abdomen as the CT of pancreas is often the imaging modality of choice.

Cystic fibrosis is incorrect. This is a genetic disorder that affects people from birth and is associated with respiratory complications. Furthermore, sadly most of sufferers will not live beyond the age of 30 years.

CHRONIC PANCREATITIS

- Alcohol – seen in majority of cases
- Smoking
- Autoimmune

Clinical features

- Classically presents with epigastric pain radiating into the back
  - Pain is relieved when sitting forward
  - Pain is the most common presentation of chronic pancreatitis
  - Pain is episodic with short periods of severe pain
  - Eating may exacerbate the pain
- Steatorrhoea
  - Steatorrhoea occurs due to malabsorption of fats from the lack of pancreatic lipase secretion which could subsequently cause weight loss
  - Occasionally, the question writers may use words like “offensive stools which are difficult to flush” which in other words represent the term steatorrhoea
- Diabetes
- Jaundice
  - This is a later presentation due to obstruction of the common bile duct when the head of the pancreas becomes fibrosed.

Remember, patients with chronic pancreatitis seek medical attention mainly because of symptoms of abdominal painor maldigestion and weight loss

Investigations

- Serum lipase and lipase
  - Maybe slightly elevated however in contrast to acute pancreatitis, the serum amylase and lipae levels are not strikingly elevated
- Transabdominal ultrasound scans
  - Often as part of the initial assessment
- Contrast-induced spiral CT scan
  - Remains the gold standard for imaging technique for pancreatic disease
  - Shows evidence of pancreatic calcification

Management*Think of the individual clinical features and how to manage them*

- Pain – analgesia
- Steatorrhoea or malabsorption – Pancreatic enzymes supplements and fat soluble vitamins
- Diabetes – oral hypoglycaemics and insulin

Q-68

A 27 year old woman comes to the hospital with pain and distension of her abdomen. The pain started a few days ago and it has been worsening over the past 24 hours. She gives a history of recent bloody diarrhoea. She has been suffering with chronic diarrhoea and abdominal cramping for a few months associated with fever and malaise. Her diarrhoea is often episodic with periods where she has normal stool consistency for a few days however she feels greatly inconvenient during episodes where she has increased frequency of defecation. An erect abdominal X-ray was requested and performed which shows mucosal oedema and a dilated transverse colon. Her temperature is 38.5 C. She has a pulse rate of 105 beats/minute and a blood pressure of 100/60 mmHg. Her blood results show:

White cell count (WCC) 16.3 (4-11 x 10^9/L)
CRP 125 mg/L (< 10 mg/L)
Haemoglobin 100 g/L (115-160 g/L)

What is the SINGLE most likely diagnosis?

A. **Ulcerative colitis**
B. **Crohn's disease**
C. **Infective diarrhoea**
D. **Intussusception**
E. **Ischaemic colitis**

ANSWER:
Ulcerative colitis

EXPLANATION:
Ulcerative colitis is often episodic and presents with chronic diarrhoea that can be bloody. Systemic symptoms include fever and malaise. In moderate to severe attacks, blood test would show raised white blood cells and CRP with anaemia (iron deficiency anaemia).

The features that she presents with in the hospital are consistent with a toxic megacolon. This is characterised by a very dilated colon accompanied by abdominal distension, abdominal pain and in some cases shock. Toxic megacolon is one of the well known complications of ulcerative colitis.

Q-69

A 32 year old woman complains of brief episodes of severe shooting pain in th3e rectum that usually occur at night. Rectal examination and flexible sigmoidoscopy detect no abnormalities. What is the SINGLE most probable diagnosis?

A. **Anal haematoma**

B. Anal fissure
C. Rectal carcinoma
D. Proctalgia fugax
E. Piles

ANSWER:
Proctalgia fugax

EXPLANATION:
A normal rectal examination and flexible sigmoidoscopy excludes the other options.Only proctalgia fugax is left.

Proctalgia fugax
Severe recurrent rectal pain in the absence of any organic disease. Attacks may occur atnight, after bowel actions, or following ejaculation. Anxiety is said to be an associatedfeature.

Q-70

A 43 year old lady presents with jaundice. Skin excoriations were seen on physical examination. Blood test reveals a raised alkaline phosphatase with mildy raised alanine transaminase. Antimitochondrial antibodies are found to be positive. What is the SINGLE most likely diagnosis?

A. Hepatitis B
B. Hepatitis C
C. Primary biliary cirrhosis
D. Primary sclerosing cholangitis
E. Obstetric cholestasis

ANSWER:
Primary biliary cirrhosis

EXPLANATION:
The diagnosis here is primary biliary cirrhosis

The classic presentation is itching in a middle-aged woman as we see here.

Often asymptomatic and diagnosed after finding alkaline phosphatase on routine LFT.Lethargy, sleepiness, and pruritus may precede jaundice.

There is an association with Sjögren syndrome.

Antimitochondrial antibodies (AMA) are the hallmark for this disease

To help remember: Think of the M rule for Primary biliary cirrhosis
• *IgM*

• *anti-Mitochondrial antibodies*
• *Middle aged females*

PRIMARY BILIARY CIRRHOSIS VS PRIMARY SCLEROSING CHOLANGITIS

Primary Biliary Cirrhosis	Primary Sclerosing Cholangitis
• Autoimmune, idiopathic • Association – Sjogren • Pruritus, raised ALP • Antimitochondrial antibody (AMA) positive • Management involves ursodeoxycholic acid, cholestyramine	• Autoimmune, idiopathic • Association – IBD (especially UC) • Pruritus, raised ALP • ERCP is the most specific test • Management involves ursodeoxycholic acid, cholestyramine

Q-71

A 12 year old child complains of right iliac fossa pain and diarrhoea. On colonoscopy, a transmural, cobblestone appearance mucosa is seen near the ileo-caecal injection. What is the SINGLE most appropriate management?

A. Mesalazine
B. Paracetamol
C. Ibuprofen
D. Metronidazole
E. Mercaptopurine

ANSWER:
Mesalazine

EXPLANATION:
The diagnosis of Crohn's disease is quite clear here. A transmural, cobblestone appearance mucosa is a give away that this is Crohn's disease.

Q-72

A 25 year old woman has diarrhoea and abdominal bloating over the last 4 months. Onexamination, she has blistering rash over her elbows. Her blood test show:
Haemoglobin 105 g/L
Mean cell volume (MCV) 79 fL
On jejunal biopsy, there is shortening of the villi and lymphocytosis. What is the SINGLEmost likely diagnosis?

A. Coeliac disease
B. Whipple's disease
C. Crohn's disease
D. Tropical sprue
E. Giardiasis

ANSWER:
Coeliac disease

EXPLANATION:
The blistering rash over her elbows is called dermatitis herpetiformis. Dermatitisherpetiformis, is a skin condition linked to coeliac disease. Typical symptoms ofdermatitis herpetiformis are red, raised patches, often with blisters and severe itching.

The low haemoglobin is another clue towards coeliac as one of the most commonpresentation of coeliac disease is iron deficiency anaemia. Folate and B12 deficiencycan also occur.

The shortening of villi (villous atrophy) and lymphocytosis on jejunal biopsy is providesus with the diagnosis of coeliac disease.

One may be thinking of tropical sprue as a diagnosis as it also has villous atrophy onjejunal biopsy and has similar presentation. But tropical sprue does not present withdermatitis herpetiformis and it is also much rarer as compared to coeliac disease.

Q-73

A 40 year old woman complains of dysphagia when eating solids and drinking liquids.She sometimes suffers from severe retrosternal chest pain. Barium swallow reveals adilated oesophagus which tapers to a fine distal end. What is the SINGLE mostappropriate management?

A. Reassurance
B. Antispasmodics
C. Dilatation of the lower oesophageal sphincter
D. Endoscopic diverticulectomy
E. Calcium channel blocker

ANSWER:
Dilatation of the lower oesophageal sphincter

EXPLANATION:
Please see Q-11

Q-74

A 25 year old woman complains of diarrhoea, and abdominal cramps for the past 8months. She says that her diarrhoea has recently become bloody. A biopsy wasperformed and the colonic mucosa shows crypt abscesses. What is the SINGLE mostlikely diagnosis?

A. Ulcerative colitis
B. Crohn's disease

C. Infective diarrhoea
D. Colorectal cancer
E. Irritable bowel syndrome

ANSWER:
Ulcerative colitis

EXPLANATION:
Crypt abscesses (Crypts of Lieberkühn) are typical of ulcerative colitis, though notdiagnostic. They are mucosal crevices that are seen in the normal gastrointestinal tract.

In ulcerative colitis, these get clogged up with neutrophilic exudates, forming "cryptabscesses." These are not "real" abscesses and do not require surgical drainage.

It is important to know the differences of ulcerative colitis and crohn's disease for PLABas it is very commonly asked.

Q-75

What is the pathological change in Barrett's esophagus?

A. Replacement of squamous epithelium to columnar epithelium
B. Replacement of columnar epithelium to squamous epithelium
C. Replacement of squamous epithelium to cuboidal epithelium
D. Dysplasia
E. Hyperplasia

ANSWER:
Replacement of squamous epithelium to columnar epithelium

EXPLANATION:
Barrett's oesophagus
Barrett's oesophagus results from prolonged exposure of normal oesophagealsquamous epithelium to the refluxate of GORD. This causes mucosal inflammation anderosion, leading to replacement of the mucosa with metaplastic columnar epithelium.

The most significant associated morbidity is oesophageal adenocarcinoma.

Q-76

A 48 year old woman is admitted to A&E with a productive cough and a moderatefever. She complains of central chest pain and regurgitation of undigested food. Shefinds it difficult to swallow both food and liquids. These symptoms of swallowing havebeen present for the last 4 months. A chest X-ray shows megaesophagus. What is themost likely diagnosis?

A. Pharyngeal pouch
B. Hiatus hernia
C. Bulbar palsy
D. Achalasia
E. Tuberculosis

ANSWER:
Achalasia

EXPLANATION:
The diagnosis here is Achalasia. It can sometimes present as chest pain. The productivecough in this question points towards aspiration pneumonia secondary to retained foodand fluid in the oesophagus. Regurgitation of undigested food, and difficulty swallowingboth food and liquids are classic for achalasia. A chest X-ray would also show a largeoesophagus in Achalasia.

While some might argue that the answer here could potentially be pharyngeal pouch due to the regurgitation of undigested food and the aspiration pneumonia. The writers of the PLAB test would provide other hints if pharyngeal pouch was the answer such as halitosis which may occasionally be seen in a pharyngeal pouch. Furthermore, megaesophagus points towards achalasia as being the answer for this question.

Q-77

A 58 year old man has a history of moderate to severe recurrent epigastric pain at night for the past month. He has no history of peptic ulcers diagnosed previously and has no previous investigations for dyspepsia. He is not on any regular medications. What is the SINGLE most appropriate investigation that would lead to a diagnosis?

A. Endoscopy
B. Urea breath test
C. Helicobacter pylori serology test
D. Stool antigen test
E. Barium swallow

ANSWER:
Endoscopy

EXPLANATION:
In previous recommendations, patients aged 55 years or older with unexplained and persistent recent-onset dyspepsia should be referred urgently for endoscopy. In recent years, the recommendations have changed to consider routine endoscopic investigations in patients over the age of 55 where symptoms persist despite Helicobacter pylori testing and acid suppression

Since this question is asking for an investigation that would lead to a diagnosis,

endoscopy is the best answer to investigate for a peptic ulcer.

Q-78

A 75 year old man living in a nursing home is taken to the hospital by his nurse. He has been suffering from longstanding constipation and has been having difficulty in passing stools for the past 7 days. He appears mildly confused and agitated. He has a heart rate of 110 beats/minute and a respiratory rate of 30 breaths/minute. On rectal examination, faecal impaction is noted. What is the SINGLE most appropriate management?

A. **Sodium picosulphate**
B. **Danthron**
C. **Phosphate enema**
D. **Methylcellulose**
E. **Bran**

ANSWER:
Phosphate enema

EXPLANATION:
If constipation is not treated and is left to manifest for a long period of time, it can result in the development of faecal impaction which symptoms may be seen as dehydration, tachycardia, tachypnoea, agitation, and confusion if severe.

A person with faecal impaction may require emergency treatment or hospitalization. For rapid action, phosphate enema is preferred. Phosphate enemas contain sodium acid phosphate and sodium phosphate. The osmotic activity of the former increases the water content of the stool so that rectal distension follows and it is thought that this induces defecation by stimulating rectal motility. It has a very quick onset of action which makes enemas useful for when a rapid evacuation of a stony dull faecal impaction is required.

Q-79

A 23 year old woman has abdominal bloating, weight loss and intermittent diarrhoea. She describes her stools as "frothy" and difficult to flush down the toilet. Her blood test show:

Haemoglobin 105 g/L
White cell count 7.1 x 109/L
Platelets 350 x 10 9/L
Ferritin 11 ng/ml
Vitamin B12 225 ng/L
Folate 1.9 mcg/L

Endomysial antibodies were tested positive. What is the SINGLE most likely diagnosis?

A. Coeliac disease
B. Ulcerative colitis
C. Crohn's disease
D. Irritable bowel syndrome
E. Giardiasis

ANSWER:
Coeliac diseae

EXPLANATION:
The anaemia and low ferritin and folate levels are characteristic of coeliac disease. Thisis in combination with the endomysial antibodies. A jejunal biopsy should be done toconfirm this diagnosis.

Q-80

A 44 year old male is admitted with repeated attacks of pancreatitis. He has peripheral paraesthesia and loss of proprioception in the legs. He is having memory loss and difficulties with thinking. What is the SINGLE most appropriate management?

A. Thiamine
B. Pyridoxine
C. Hydroxycobalamin
D. Lipase
E. Antibiotics

ANSWER:
Hydroxycobalamin

EXPLANATION:
Inadequate vitamin B12 absorption can be due to chronic pancreatitis.

Neuropsychiatric features of B12 deficiency include dementia which is why he is having memory loss and difficulties with thnking.

Peripheral paraesthesia and disturbances of position and vibration sense are classically seen in B12 deficiency.

Treat with hydoroxocobalamin

Q-81

A 24 year old female presents with a 4 month history of bloody diarrhoea, lethargy and weight loss. She complains of abdominal discomfort and passing stools more than 8 times a day. An endoscopy was performed which shows deep ulcers, and skip lesions. What is the SINGLE most likely diagnosis?

A. **Diverticulitis**
B. **Colon cancer**
C. **Infective diarrhoea**
D. **Crohn's disease**
E. **Ulcerative colitis**

ANSWER:
Crohn's disease

EXPLANATION:
The diagnosis of Crohn's disease is quite clear here. Lethargy and weight loss are non specific signs that can occur in Crohn's disease. The give away here is the deep ulcers, and skip lesions that is seen on endoscopy which is pathognomic for Crohn's disease.

Note that although Crohn's disease usually has non bloody diarrhoea, it occasionally may present with bloody diarrhoea.

Q-82

A 55 year old man develops fatigue and palpitations. He had a gastrectomy a years ago. Recent blood tests were ordered which show:

Haemoglobin 98 g/L
Mean cell volume (MCV) 110 fL

On neurological examination, loss of proprioception and vibration sense were noted. What is the SINGLE most likely diagnosis?

A. **Iron deficiency**
B. **Folate deficiency**
C. **Vitamin B12 deficiency**
D. **Haemolytic anaemia**
E. **Sickle cell disease**

ANSWER:
Vtiamin B12 deficiency

EXPLANATION:
High MCV and low Hb – Macrocytic anaemia

These findings together with a history of ileal resection whereby malabsorption of B12 could occur, points towards the diagnosis of B12 deficiency.

Q-83

A 59 year old man has multiple liver metastasis with the primary tumour originatingfrom the large bowel. He has abdominal pain, and jaundice. On general

inspection, helooks cachexic and drowsy. He has significant ascites and oedema seen on both ankles.His family have concerns that he is not having sufficient fluids orally. His urine output islow. He currently takes regular haloperidol 1.5 mg three times a day and lactulose 10mltwice a day. His blood test show:

Serum urea 6.2 mmol/L
Serum creatinine 85 µmol/L
Sodium 129 mmol/L
Calcium 2.42 mmol/l
Potassium 3.6 mmol/l
Albumin 18 g/L
Bilirubin 105 µmol/L
Alkaline phosphatase (ALP) 411 U/L

What is the SINGLE most appropriate management?

A. Albumin infusion
B. Crystalloids intravenously
C. Furosemide intravenous
D. Fluids via nasogastric tube
E. Cease haloperidol

ANSWER:
Albumin infusion

EXPLANATION:
This patient has hypoalbuminaemia. When plasma proteins, especially albumin, nolonger sustain sufficient colloid osmotic pressure to counterbalance hydrostaticpressure, oedema and ascites develops.

Intravenous albumin may be used to increase a colloid osmotic pressure to draw fluidback into the intravascular compartment to reduce the oedema and ascites. It restoresintravascular plasma volume with less exacerbation of salt and water overload thanisotonic solutions. Albumin infusion produces only a transient effect but it is useful incases like this where surgery may not be an option and treatment of intravascular fluiddeficit and oedema is required. It is also useful to obtain a diuresis inhypoalbuminaemic patients.

Haloperidol has no role in causing hypoalbuminaemia.

Q-84

A 34 year old man presents with slow progressive dysphagia. He has been using H2blockers for the last year because of retrosternal discomfort. He has not noticed anyweight loss. A haemoglobin level was done a month ago which reads 13.3g/dL. What isthe SINGLE most likely diagnosis?

A. Foreign body
B. Plummer-Vinson syndrome
C. Pharyngeal pouch
D. Peptic stricture
E. Esophageal Cancer

ANSWER:
Peptic stricture

EXPLANATION:
Peptic strictures have an association with gastro-oesophageal reflux disease and cancause dysphagia.

The fact that there is no weight loss and haemoglobin is normal points towards abenign cause. Esophageal cancer at this age group is also uncommon.

Q-85

A 30 year old lady complains of intermittent diarrhoea, chronic abdominal pain and tenesmus. Sometimes she notices blood in her stool. What is the SINGLE most likely cause of her symptoms?

A. Inflammatory bowel disease
B. Diverticulosis
C. Irritable bowel disease
D. Adenomyosis
E. Endometriosis

ANSWER:
Inflammatory bowel disease

EXPLANATION:
Inflammatory bowel disease remains the best choice among the rest. All the symptomsstated in the question including tenesmus can occur in inflammatory bowel disease.

The answer is unlikely to be diverticulosis as diverticulosis is defined as the presence ofdiverticula which are asymptomatic. This patient has symptoms.

Blood in stools is not seen in irritable bowel disease. Remember, passing blood is not asymptom of IBS.

The symptoms are not at all consistent with adenomyosis or endometriosis

Q-86

A 35 year old woman has sudden onset epigastric pain, chills and nausea. She gave birthto a health baby 2 days ago. Her blood pressure was normal throughout

pregnancy. Hertemperature is 37.3°C and her blood pressure is 139/90 mmHg. Urinalysis reveals noproteins. Her blood test show:

Alkaline phosphatase (ALP) 420 U/L
Alanine transferase (ALT) 650 U/L
Bilirubin 25 µmol/L
International normalized ratio (INR) 1.0
Haemoglobin 101 g/L
Platelets 350 x 10^9/L
White cell count (WCC) 13.5 x 10^9/L

What is the SINGLE most likely diagnosis?
A. Acute cholecystitis
B. Pre-eclampsia
C. Obstetric cholestasis
D. Acute fatty liver of pregnancy
E. HELLP syndrome

ANSWER:
Acute cholecystitis

EXPLANATION:
The history of sudden onset epigastric pain, chills, and nausea in the postpartum periodwith a likely history of an uneventful pregnancy makes cholecystitis the most likelydiagnosis.

Symptomatic gallstone disease is the second most common abdominal emergency inpregnant women. Pregnancy alters bile composition and gallbladder emptying slows inthe second trimester, increasing the risk of gallstones.

The raised ALT is of something to note. The causes of raised liver enzymes in postpartum period is endless. They include:
• Pregnancy-related liver diseases such as:
  o Obstetric cholestasis
  o Pre-eclampsia, eclampsia,
  o HELLP syndrome
  o Acute fatty liver of pregnancy
• Liver diseases unrelated to pregnancy
  o Viral hepatitis
  o Autoimmune liver disease
  o Wilson’s disease
  o Budd-Chiari syndrome
  o Acute cholecystitis
  o Drug-induced hepatotoxicity

As there is no protein in the urine and blood pressure has been normal throughoutpregnancy, pre-eclampsia is unlikely. As haemoglobin levels and platelet levels arewithin a normal range for someone who has just delivered a baby, HELLP syndrome isunlikely. Obstetric cholecystitis may have aminotransferase levels as high as 20 timesthe normal limit, but the raised bile acids would cause significant pruritus which wouldbe the main presenting feature rather than epigastric pain.

Biliary colic occurs when a stone temporarily occludes the cystic duct. There is a colickypain in the right upper quadrant radiating to right shoulder. The episode is usually selflimiting. Ultrasound establishes diagnosis of gallstones. The diagnostic accuracy ofultrasound for detecting gallstones is 95%.

The main difference of biliary colic and acute cholecystitis is the inflammatorycomponent. In acute cholecystitis there is local peritonism, fever, and elevated WCC.

Q-87

55 year old man comes to the Emergency Department with 3 episodes of haematemesis and epigastric pain and is currently waiting for investigations. He has a history of rheumatoid arthritis for which he takes non-steroidal anti-inflammatory drugs. He has a pulse rate of 70 beats/minute and his blood pressure is 120/80. What is the SINGLE most appropriate management?

A. **Intravenous proton pump inhibitor**
B. **Oral antacids**
C. **Intravenous antibiotics**
D. **Fresh frozen plasma (FFP)**
E. **Intravenous steroids**

ANSWER:
Intravenous proton pump inhibitor

EXPLANATION:
It is clear that this man has a peptic ulcer disease which is causing his upper GI bleeding. Part of the management involves resuscitation with intravenous fluids, intravenous analgesia, antiemetics and intravenous PPI if known peptic ulcer disease.

Intravenous antibiotics is only considered prophylactically if we are considering upper GI bleeding from varices or a perforated peptic ulcer.

There is no reason to administer fresh frozen plasma or intravenous steroids in this stem.

Q-88

A 23 year old female presents with an 8 week history of bloody diarrhoea. She says herbowels have not been right for the past few months and she frequently

has to run tothe toilet. A diagnosis of ulcerative colitis is made. What is the SINGLE most likely signto be seen on a barium enema?

A. Loss of haustral markings
B. Kantor's string sign
C. Cobblestone appearance
D. Rose thorn ulcers
E. Fistula

ANSWER:
Loss of haustral markings

EXPLANATION:
Loss of haustration is pathognomonic for Ulcerative Colitis. Cobblestone appearance isseen on an endoscopy in Crohn's disease. Kantor's string sign, rose thorn ulcers, andfistulae are seen on a small bowel enema in Crohn's disease.

Q-89

A 43 year lady had endoscopic retrograde cholangiopancreatography for gallstone disease. Twenty-four hours after the procedure she returns to the emergency department with severe right upper quadrant pain. On examination, she appears generally unwell with a pyrexia of 38.9 C. She looks yellow and she is extremely tender in the right upper side of her abdomen. What is the SINGLE most likely diagnosis?

A. Acute pancreatitis
B. Ascending cholangitis
C. Acute cholecystitis
D. Cancer of the head of the pancreas
E. Upper GI perforation

ANSWER:
Ascending cholangitis

EXPLANATION:
The correct answer is option B. Ascending cholangitis. This is a classical presentation with Charcot's triad of fever, RUQ pain and jaundice. Abdominal sepsis is one of three most common types of sepsis, particularly as this lady recently had a procedure at the time of presentation is most suspicious of an infective pathology.

Option A. Acute pancreatitis is incorrect as this typically / classically presentswith profuse vomiting and central (umbilical) abdominal pain that radiates under the ribs. This distribution of pain relates to the embryonic origins of the pancreas which is the midgut.

Option C. Acute cholecystitis is incorrect as although it is a good differential given the

presentation, it is not the single best answer given the history of jaundice. Jaundice is not typically present in cholecystitis.

Option D. Cancer of the head of the pancreas is incorrect as there is nothing in the question to suggest a malignant pathology such as weight loss. Furthermore, the classic presentation of cancer of the head of the pancreas is 'painless jaundice'.

Option E. Upper GI perforation is incorrect as this usualoly presents with generalised abdominal tenderness with guarding and the patient will typically be much more unwell. This is a good differential to keep in mind as the patient did just have recent endoscopy. However, if a perforationh had occurred, the patient would have become unwell immediately at the time of the even, not twenty-four hours later!

Q-90

A 41 year old lady attends the clinic complaining of a long history of mild pruritus andfatigue. She looks jaundiced. Alkaline phosphatase was raised on routine liver functiontest. She was diagnosed with Sjögren syndrome a few years back. What is the SINGLEmost appropriate test to perform to help make a diagnosis?

A. Rheumatoid factor
B. Antinuclear antibodies
C. Anti Smooth Antibodies
D. Antimitochondrial antibodies
E. Antineutrophil cytoplasmic antibodies

ANSWER:
Antimitochondrial antibodies

EXPLANATION:
The diagnosis here is primary biliary cirrhosis

The classic presentation is itching in a middle-aged woman as we see here.

Often asymptomatic and diagnosed after finding alkaline phosphatase on routine LFT.Lethargy, sleepiness, and pruritus may precede jaundice.

There is an association with Sjögren syndrome.

Antimitochondrial antibodies (AMA) are the hallmark for this disease

Q-91

An 83 year old woman who is a resident in a nursing home is admitted to a hospitalwith a 4 day history of chronic constipation. She has had no weight loss or change inappetite. She has been on analgesics for 3 weeks for her back pain. She is in obviousdiscomfort. Rectal examination reveals faecal impaction with hard stools. What is theSINGLE most appropriate immediate management?

A. Codeine phosphate for pain relief
B. High fiber diet
C. IV fluids
D. Phosphate enemas
E. Urinary catheterisation

ANSWER:
Phosphate enemas

EXPLANATION:
This is an example of overflolw diarrhoea. Medications such as opioid pain relievers reduce intestinal movement and may causefaecal matter to become too large, hard and dry making it difficult to expel. Subsequently, faeces become so harde that they cannot be expelled and faecal fluid will flow around the block.

Phosphate enemas contain acid phosphate and sodium phosphate. The osmotic activity of the former increases the water contact of the stool so that rectal distension follows and it is thought that this induces defecation by stimulating rectal motility. It has a very quick onset of action which makes enemas useful for when a rapid evacuation of a stony dull faecal impaction is required.

Phosphate enema is the clear asnwer here as the question is addressing the immediate management.

It is important to remember the relation between elderly, bedridden individuals and faecal impaction. Fecal impaction isa fairly common complication of long-term constipation in the elderly and bedridden, occurring in about 30% of all nursing home residents. Hence in the exam, it is likely they would have the words, "Nursing home" in the stem.

Faecal impaction
If the patient has faecal impaction, try:
• Bisacodyl suppositories
• Arachis oil retention enema to soften
• Phosphate enema
• An alternative is polyethylene glycol, Movicol taken for three days
• Manual removal (with midazolam, morphine, or caudal anaesthesia)
• Once successful it is imperative to start regular oral measures to preventrecurrence of the problem

To be more specific in managing faecal impaction:
These are quite specific and are unlikely to be asked in the PLAB exam but nonetheless good for your practice.
• For hard stools, consider using a high dose of an oral macrogol
• For soft stools, or for hard stools after a few days treatment with a macrogol,consider

starting or adding an oral stimulant laxative.
• If the response to oral laxatives is insufficient or not fast enough, consider:
• Using a suppository: bisacodyl for soft stools; glycerol alone, or glycerolplus bisacodyl for hard stools.
• Using a mini enema

The final choice of laxative will depend on individual preference and what has previously been tried.

Q-92

A 33 year old woman has severe upper abdominal pain with radiation to the backwithin 24 hours of removing gallstones by endoscopic retrogradecholangiopancreatography (ERCP). The pain is eased when she leans forward. Shereports some nausea and vomiting but denies any diarrhoea. Jaundice is noted and theepigastric region is tender on palpation. Her blood pressure is 120/80 mmHg, andtemperature is 37.3°C. What is the SINGLE most likely reason for his signs andsymptoms?

A. Ascending cholangitis
B. Acute pancreatitis
C. Perforated duodenal ulcer
D. Chronic pancreatitis
E. Bleeding

ANSWER:
Acute pancreatitis

EXPLANATION:
The likely cause is acute pancreatitis. Pancreatitis is one of the most frequent post-ERCPcomplications. The incidence of this is around 20%.

Ascending cholangitis may have similar presentation but given that she is apyrexial, thelikely cause is acute pancreatitis. Note that even in acute pancreatitis, mild pyrexia is common.

Q-93

A 21 year old woman complains of diarrhoea, and abdominal cramps for the past 5 months. She says that her diarrhoea has recently become bloody. A rectal biopsy was performed and histology was reported as "decreased amounts of goblet cells". What is the SINGLE most likely diagnosis?

A. Ulcerative colitis
B. Crohn's disease
C. Infective diarrhoea
D. Colorectal cancer
E. Irritable bowel syndrome

ANSWER:
Ulcerative colitis

EXPLANATION:
The diagnosis of ulcerative colitis is quite clear here. Decreased goblet cells on histology points towards ulcerative colitis