**<u>Introduction to Candidates</u>** – Aim for 8 minutes

**You are a Foundation Doctor working in A&E.**

**Laetitia Allen is presenting with abdominal pain.**

**You have 6 minutes to take a focused history, after which the examiner will ask you some questions.**

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**Patient name:** Laetitia Allen

**Age:** 26 years

Patient is lying supine on the trolley with the head of the bed at 45 degrees, she looks to be in a lot of pain, she is slightly tearful.

**Focused History:**

**PC& HPC**

"My tummy hurts so much! It started all of a sudden! Please doctor, make it stop".

You presented acutely to A&E with sudden onset epigastric pain radiating to the back (you point to the epigastrium when asked where the pain is), associated with seven episodes of vomiting.

The pain is sharp, constant, relieved by sitting upright, 10/10 in severity. You have not taken any analgesia since the pain was so intense when it started, you presented directly to A&E.

No diarrhoea, no blood in the vomitus or the stools. You have not eaten anything today since you cannot keep anything down.

No previous similar episodes.

This pain feels much more severe than the one you experience when you suffer from UTIs.

ICE: "Is it a water infection?"

**PMH**

Recurrent UTIs

**DH**

COCP

**SH**

Works as a waitress in a café

Never-smoked

Drinks 1 glass of wine at the weekends

**FH**

None

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**Abdominal Examination (Provide these findings verbally to the student):**

**Inspection:**

From the end of the bed: Pt is mildly jaundiced.

Examination of the peripheries: Dry mucous membranes, capillary refill time 5 seconds

**Palpation:**

The abdomen is diffusely tender. There is rebound tenderness in the epigastrium and right hypochondrium.

Murphy's sign negative

Percussion yields pain diffusely, there are normal bowel sounds on auscultation.

**What are your differentials?**

Acute pancreatitis

Acute cholecystitis

Pyelonephritis

(UTI, etc...)

**What investigation(s) would you like to perform for this patient?**

Urine dipstick + urinary βhCG

FBC, U&E, CRP, serum amylase/lipase

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**These are the results of the investigations you requested:** *(PROVIDE THIS SHEET TO THE STUDENT)*

| | | | |
|---|---|---|---|
| White blood cell (WBC) count | 13.3 | x10^9/L | H 4.0-11.0 |
| Haemoglobin (Hb) | 141 | g/L | 115-165 |
| Platelet (PLT) count | 225 | x10^9/L | 150-400 |
| Neutrophil count | 11.9 | x10^9/L | H 1.7-7.5 |
| Lymphocyte count | 0.6 | x10^9/L | L 1.0-4.5 |
| Monocyte count | 0.6 | x10^9/L | 0.2-0.8 |
| Eosinophil count | 0.2 | x10^9/L | 0.0-0.4 |
| Basophil count | 0.1 | x10^9/L | 0.0-0.1 |

| | | | |
|---|---|---|---|
| Sodium | 137 | mmol/L | 133-146 |
| Potassium | 3.6 | mmol/L | 3.5-5.3 |
| Urea | 3.4 | mmol/L | 2.5-7.8 |
| Creatinine | 80 | umol/L | 46-92 |
| Estimated GFR | 75 | ml/min/1.73m2 | |
| C-reactive protein (CRP) | 11 | mg/L | H <5 |
| Glucose | 5.6 | | |

| | | | |
|---|---|---|---|
| Bilirubin | 75 | umol/L | H <21 |
| Protein | 79 | g/L | 60-80 |
| Albumin | 49 | g/L | 35-50 |
| Globulin | 30 | g/L | |
| Alkaline phosphatase | 143 | U/L | H 30-130 |
| Alanine transaminase | 467 | U/L | H <33 |

| | | | |
|---|---|---|---|
| Amylase | 2233 | U/L | H <100 |
| Calcium (adjusted) | 2.46 | mmol/L | 2.20-2.60 |
| Albumin | 49 | g/L | 35-50 |
| PaO2 | 7.0 kPa | | >10.5 |

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**What do you suspect the diagnosis to be in the light of these investigation findings?**

Acute pancreatitis

**What is the likely cause of the pancreatitis in this case?**

Gallstones

**What imaging will you do to confirm your diagnosis?**

USS/CT abdo to confirm pancreatitis

USS gallbladder to confirm cholelithiasis

MRCP to check for biliary obstruction (choledocholelithiasis)

**How would you manage this patient acutely?**

- Oxygen supplementation
- Aggressive fluid resuscitation:
    - 1L over 1h
    - Then 1L over 2h
    - Then 1L over 4h
- Analgesia, e.g: 1 g IV paracetamol STAT and then QDS, oral codeine, if the pain is very severe, patient can be given morphine PCA (patient-controlled analgesia), and then PRN morphine thereafter
- Anti-emetics (IV)

**What scoring system would allow you to assess the severity of acute pancreatitis**

Glasgow-Imrie Score

**Calculate the Glasgow-Imrie Score for this patient, and state where the patient needs to be admitted.**

Score = 2 (mild to moderate pancreatitis)

For surgical ward-based care.

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# Glasgow-Imrie Criteria for Severity of Acute Pancreatitis

*(PROVIDE THIS SHEET TO THE STUDENT)*

*Each criterion present adds 1 point.*

*A score of >3 would indicate severe disease, needing ITU admission.*

$PaO_2$ < 7.9 kPa

Age > 55 years

WBC > 15 X x10^9/L

Calcium < 2 mmol/L

Serum urea > 16 mmol/L

ALT> 200 U/L

Albumin < 32 g/L

Glucose > 10 mmol/L

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| Area | Clear Fail | Fail | Satisfactory | Good | Excellent |
|---|---|---|---|---|---|
| PC & HPC:<br><br>Good range of open and closed questions asked. | | | | | |
| PMH & DH | | | | | |
| SH | | | | | |
| FH | | | | | |
| ICE | | | | | |
| Differential dx | | | | | |
| Investigations | | | | | |
| Rapport/communication skill | | | | | |
| **Overall** | | | | | |

**Feedback:**

**Diagnosis**

Acute pancreatitis requires three factors to be present for diagnosis:

1. Characteristic severe epigastric/RUQ abdominal pain radiating to the back
2. Serum amylase/lipase > 3X the upper limit of normal
3. Characteristic findings of acute pancreatitis on imaging, i.e USS or CT

(e.g: "Bulky pancreatic body and tail with mild peripancreatic oedema and oedematous changes in the anterior pararenal space. No evidence of fluid collection within the pancreatic parenchyma noted. No signs of necrosis. Mild ascites also noted. The overall appearance is suggestive of acute pancreatitis. Normal rest of the abdominal viscera.")

Either serum amylase or lipase can be used (no need to do both), depending on each individual hospital. Lipase is more sensitive; however, it is also more expensive than amylase.

Make sure to obtain a detailed alcohol history (gallstones and alcohol are the two most common causes of acute pancreatitis).

**Management**

- The aim of acute management is to prevent Multiple Organ Dysfunction Syndrome (MODS), which is a complication of severe acute pancreatitis.

  This is why the need for early ITU referral needs to be identified.

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- If biliary obstruction is found on MRCP (biliary tree dilatation with CBD stone), urgent therapeutic ERCP needs to be arranged (within 72 hours of pain onset)
- Definitive management involves treating the cause of acute pancreatitis:
    - In this case, cholecystectomy needs to be performed during the same admission or within 2 weeks of the patient's admission for pancreatitis
    - Alcohol cessation for alcohol-related pancreatitis

Reference (accessed April 2021):

British Society of Gastroenterology (BSG)/NICE guidelines for the management of acute pancreatitis

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