




Paper 2

ProPharmace Mock Registration Assessment Review



#propharmacemock


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1

Paper 2 is mapped to the GPhC Framework:



High weighting	60-70%
Medium weighting	25-35%
Low weighting	up to 10%

Each question will be marked with high, medium and low weighting for your reference

2

High

Learning Point from Q1

B Advise her to see her GP for a clinical review and suitable acute and prophylactic migraine treatment

1 **Migraine acute treatment:**
Offer simple analgesia such as:

- Paracetamol, Ibuprofen or Aspirin
- Offer a triptan, alone or in combination with, paracetamol or an NSAID; oral sumatriptan is first choice.
- Do NOT offer ergots or opioids

2 **Prophylactic treatment should be considered if:**

- Migraine attacks are having a significant impact on quality of life and daily function, occur frequently (more than once on average) or are prolonged and severe despite optimal treatment.
- Acute treatments are either contraindicated or ineffective
- The person is at risk of medication overuse headache (MOH) due to frequent use of acute drugs.

3 The patient has had three attacks this month while taking the maximum dose of paracetamol with no avail. However she is also a CYP2D6 extensive metaboliser so, migraine is contraindicated. Therefore, the patient should be referred for prophylactic treatment

4 **Learning points going forward:**

- Revision of **over-the-counter treatment of Migraine;**
- Criteria for referral for migraines;
- What is a **CYP2D6 extensive metabolizer** and how does this affect patients taking medications such as codeine.
- <https://cks.nice.org.uk/topics/migraine/management/adults/>

3

High

Learning Point from Q2

A Expired stock of dipipanone hydrochloride 10 mg /cyclizine hydrochloride 30 mg tablets

1 Dipipanone hydrochloride with cyclizine is a schedule 2 drug - all schedule 2/3 and 4 (part 1) should be denatured before disposal.

	IS DENATURING REQUIRED?	IS AN AUTHORISED WITNESS REQUIRED?	RECORD KEEPING
PATIENT-RETURNED CONTROLLED DRUG	Yes, if Schedule 2, 3 or 4 (part 1)	No. However it is preferable for denaturing to be witnessed by another member of staff familiar with CDs (preferably a registered health professional)	A record should not be made in the CD register but records of patient-returned Schedule 2 CDs and their subsequent destruction should be recorded in a separate record for this purpose
EXPIRED/OBsolete/UNWANTED STOCK	Yes, if Schedule 2, 3 or 4 (part 1)	Yes, if Schedule 2. For Schedule 3 medicines it would be good practice to have another member of staff witness the denaturing	An entry should be made in the CD register for Schedule 2 CDs

B Expired stock of suboxane 2mg/500 mg tabs
Suboxane is a schedule 3 CD - witness is only good practice but not a legal requirement

C Expired Morphine 10mg/5ml solution
Morphine solution at that strength is a schedule 5

D/E Buprenorphine (Sch3) diamorphine (sch2)
Both are patient returns that do not require an authorised witness

2 **Learning points going forward:**

- Destruction of CDs
- Classification of CDs
- Record keeping for destroyed medicines

4

High

Learning Point from Q3

E Mr P is at risk of developing a fever and conjunctivitis if prednisolone is abruptly withdrawn

1 Abrupt withdrawal after a prolonged period can lead to acute adrenal insufficiency, hypotension or death. Withdrawal can also be associated with fever, myalgia, arthralgia, rhinitis, conjunctivitis, painful itchy skin nodules and weight loss.

2 Gradual withdrawal of systemic corticosteroids should be considered in those whose disease is unlikely to relapse and have:

- received more than 40 mg prednisolone (or equivalent) daily for more than 1 week;
- been given repeat doses in the evening;
- received more than 3 weeks' treatment;
- recently received repeated courses (particularly if taken for longer than 3 weeks);
- taken a short course within 1 year of stopping long-term therapy;
- other possible causes of adrenal suppression.

3 A. More than 3 weeks' treatment not 2 weeks
B. It needs to exceed 40mg not 30 mg
C. we do not know if Mr P had chicken pox before
D. Prednisolone should not be stopped, patient should be referred if he develops psychiatric symptoms
E. therefore, E is the most appropriate statement.

4 Learning points going forward: ✎

- ☒ Systemic corticosteroids; side effects, adrenal suppression, infections, chicken pox, measles, psychiatric conditions
- ☒ Withdrawal of corticosteroids criteria, monitoring

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5

High

Learning Point from Q4

E Trimethoprim may increase the risk of side effects of methotrexate

1

Methotrexate	Both trimethoprim and methotrexate can increase the risk of nephrotoxicity.
	Trimethoprim increases the risk of adverse effects when given with methotrexate. Manufacturer advises avoid.
	Severity of interaction: Severe Evidence for interaction: Anecdotal

2 Methotrexate and trimethoprim are both folate antagonists. A reduction in folic acid is thought to increase the side effects of methotrexate and thus concurrent use of trimethoprim and methotrexate can also increase the risk of nephrotoxicity

3 Learning points going forward: ✎

- ☒ Antibiotics & interactions
- ☒ Methotrexate adverse effects & folic acid
- ☒ Most common drug-drug interactions

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6

Low

Learning Point from Q5

B 50g of Urea, 30g of Lauromacrogols

- 1 Patient is taking 2 x 500g of Balneum Plus cream
= total 1000g
- 2 Each 500g cream contains 5% urea and 3% Lauromacrogols

Urea = 5g in 100g
Xg in 1000g
X = 50g

Lauromacrogols
3g in 100g
Xg in 1000g
X = 30g
- 3 Learning points going forward:
 - ☒ Practice basic numeracy questions without a calculator

7

High

Learning Point from Q6

C Miss D's ingested dose is above the toxic level of 150 mg/kg, and the plasma concentration needs to be determined before deciding whether Acetylcysteine needs to be administered

- 1 Ingested dose : 32 tablets x 500 mg = 16,000 mg
16,000mg / 100 Kg = 160 mg/Kg

Acetylcysteine treatment should commence in patients:

 - whose plasma-paracetamol concentration falls on or above the *treatment line* on the paracetamol treatment graph;
 - who present within 8 hours of ingestion of more than 150mg/kg of paracetamol if there is going to be a delay of 8 hours or more in obtaining the paracetamol concentration after the overdose;
 - who present 8–24 hours after ingestion of an acute overdose of more than 150mg/kg of paracetamol even if the plasma-paracetamol concentration is not yet available;
 - who present more than 24 hours after ingestion of an overdose if they are clearly jaundiced or have hepatic tenderness, their ALT is above the upper limit of normal (patients with chronically elevated ALT should be discussed with the National Poisons Information Service), their INR is greater than 1.3 (in the absence of another cause), or the paracetamol concentration is detectable.
- 2

A. Incorrect as level is above 150 mg/Kg

B. Incorrect as Miss D has arrived in hospital within 3 hours of ingestion, and the results will be available within two hours, therefore acetylcysteine can be delayed till plasma concentration is determined

D. Incorrect as activated charcoal should only be considered if the patient ingests more than 150 mg/kg and presents within 1 hour of ingestion


E. Incorrect as the patient ingested 160mg/kg, and the limit is 150 mg/kg

3 Learning points going forward:

 - ☒ Paracetamol poisoning acute overdose
 - ☒ How to use the paracetamol overdose treatment graph

8

Medium


 **Learning Point from Q7**

C 159 ml

1 From the resource: patient weights 100 Kg

First infusion	Second infusion	Third infusion
100– 109 kg	79 mL	100– 109 kg
	27 mL	53 mL

2 Total volume: $79 + 27 + 53 = 159 \text{ mL}$

3 Learning points going forward: 

- ☒ Paracetamol poisoning acute overdose
- ☒ How to use the paracetamol overdose treatment graph

9

Low

Learning Point from Q8

D Cod liver oil


1 Can I take cod liver oil supplements when I'm pregnant?


No. When you're pregnant you shouldn't take any supplements containing **vitamin A**, also known as retinol. This includes:

- fish liver oil supplements, such as cod liver oil
- high-dose multivitamin supplements
- any supplements containing vitamin A (retinol)

You should also avoid eating liver and liver products, such as liver pâté or liver sausage, as they may contain a lot of vitamin A. Too much vitamin A can harm your unborn baby.

People usually take fish oil supplements because they contain omega-3 fatty acids. These fatty acids can help protect against heart disease. It's better to eat fish than take fish oil supplements. However, it is recommended that no more than 2 portions of oily fish a week, such as salmon, trout, mackerel or herring, and no more than 2 tuna steaks or 4 medium-size cans of tuna per week.

 www.nhs.uk/pregnancy/keeping-well/
www.nhs.uk/pregnancy/keeping-well/foods-to-avoid/#fish-and-shellfish

2 Learning points going forward: 

- ☒ Be able to advise pregnant women on keeping well
- ☒ Medicines in pregnancy - what to avoid

10

Medium

Learning Point from Q9

E Flucloxacillin

1 Otitis externa

Otitis externa can be triggered by a bacterial infection caused by *Pseudomonas aeruginosa* or *Staphylococcus aureus*. Consider systemic antibacterial if spreading cellulitis or patient systemically unwell.

Choice of antibacterial therapy

No penicillin allergy

- Flucloxacillin

Penicillin allergy or intolerance

- Clarithromycin (or azithromycin or erythromycin)

If pseudomonas suspected

- Ciprofloxacin (or an aminoglycoside)

For topical treatments, see Otitis externa, under Ear.

2 Learning points going forward:

- ✓ Chapter 5: infections
- ✓ Antibacterial therapy for different infections
- ✓ Alternatives in penicillin intolerance or allergy

11

High

Learning Point from Q10

D Losartan

1 Choice of antihypertensive drug¹, monitoring treatment and BP targets

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graph TD
    A[Hypertension with type 2 diabetes] --> B[ACEi or ARB]
    C[Hypertension without type 2 diabetes] --> D[Age <55 and not of black African or African-Caribbean family origin]
    C --> E[Age 55 or over]
    C --> F[Black African or African-Caribbean family origin (any age)]
    D --> B
    E --> G[CCB]
    F --> G
    B --> H[ACEi or ARB + CCB or thiazide-like diuretic]
    G --> I[ACEi or ARB + CCB or thiazide-like diuretic]
  
```

2 Patients over 55 years, and patients of any age who are of African or Caribbean family origin

Step 1: CCB

Step 2: add in ACEi or ARB (ARB is preferred in patients who are black African or African Caribbean)

3 Learning points going forward:

- ✓ Hypertension treatment guideline
- ✓ Ace-inhibitors
- ✓ calcium channel blockers
- ✓ Angiotensin receptor blockers
- ✓ Thiazide-like diuretics


12

High

Learning Point from Q11

D

400 mg every 8 hours



1

Anaerobic Infections

By mouth

- For Child 1 month**
7.5 mg/kg every 12 hours usually treated for 7 days (for 10–14 days in *Clostridioides difficile* infection).
- For Child 2 months–11 years**
7.5 mg/kg every 8 hours (max. per dose 400 mg) usually treated for 7 days (for 10–14 days in *Clostridioides difficile* infection).
- For Child 12–17 years**
400 mg every 8 hours usually treated for 7 days (for 10–14 days in *Clostridioides difficile* infection).
- For Adult**
400 mg every 8 hours, alternatively 500 mg every 8 hours usually treated for 7 days (for 10–14 days in *Clostridioides difficile* infection).

2

Learning points going forward:

- ☒ Chapter 5: infections
- ☒ Antibacterial therapy for different infections
- ☒ Alternatives in penicillin intolerance or allergy
- ☒ Doses for most common indications


13

High

Learning Point from Q12

D

Vancomycin



1

Antibiotics that have been frequently associated with *C. difficile* infection include:

- Clindamycin
- Cephalosporins (third and fourth generation)
- Fluoroquinolones
- Broad-spectrum penicillins

Management of *C. difficile*:

- First episode of mild to moderate infection: oral metronidazole for 10–14 days
- Second or subsequent episode for severe infection: oral vancomycin for 10–14 days
- Others: Fidaxomicin

🔗

[Propharmace antibiotics guide](https://cks.nice.org.uk/topics/diarrhoea-antibiotic-associated/management/diarrhoea-antibiotic-associated/#known-c-difficile-test-result-positive)
cks.nice.org.uk/topics/diarrhoea-antibiotic-associated/management/diarrhoea-antibiotic-associated/#known-c-difficile-test-result-positive

2

Learning points going forward:


- ☒ Chapter 5: infections
- ☒ Antibacterial therapy for different infections
- ☒ Alternatives in penicillin intolerance or allergy
- ☒ *C. difficile* treatment + advice

14

High


Learning Point from Q13

E Vincristine




1 All cytotoxic drugs **except vincristine and bleomycin** cause bone-marrow suppression. This commonly occurs 7 to 10 days after administration, but is delayed for certain drugs such as carmustine, lomustine, and melphalan.

Peripheral blood counts must be checked before each treatment, and doses should be reduced or therapy delayed if bone-marrow has not recovered.


<https://bnf.nice.org.uk/treatment-summary/cytotoxic-drugs.html>

2 Learning points going forward:

- ☒ Cytotoxic drugs - treatment summary
- ☒ Common adverse effects of cytotoxic drugs e.g. drugs that cause alopecia, nausea + vomiting, hyperuricaemia etc




15

Medium

Learning Point from Q14

C Ring 999 for an ambulance to transfer Master S to the hospital



1 Signs and symptoms of meningitis:

- Fever, nausea and vomiting, lethargy, irritable or unsettled mood, refusal of food and drink, headache, muscle ache or joint pain, respiratory symptoms such as a cough, and stiff neck.


2 Nice states:
"Primary care healthcare professionals should transfer children and young people with suspected bacterial meningitis or suspected meningococcal septicaemia to secondary care as an emergency by telephoning 999"

GPhC Learning Point:

Candidates must be able to recognise possible signs and symptoms of meningitis and respond appropriately to medical emergencies, including provision of first aid.

3 Learning points going forward:

- ☒ Be familiar with community medical emergencies and what action or referral is required.



16

Medium

Learning Point from Q15

B Vitamin B12

1 Mr S feels lethargic, low mood, and sensations of pins and needles.

Symptoms of vitamin B12 deficiency

If you have anaemia caused by a vitamin B12 deficiency, you may have other symptoms, such as:

- a pale yellow tinge to your skin
- a sore and red tongue (glossitis)
- [mouth ulcers](#)
- [pins and needles \(paraesthesia\)](#)
- changes in the way that you walk and move around
- disturbed vision
- irritability
- [depression](#)
- changes in the way you think, feel and behave
- a decline in your mental abilities, such as memory, understanding and judgement ([dementia](#))

GPhC Learning Point:
Candidates are expected to know vitamin deficiencies and their symptoms

Important/useful links

- <https://www.nhs.uk/> - useful for looking up symptoms, causes and treatments for each vitamin
- ProPharmace Blood and Nutrition Guide handout

2 Learning points going forward:

- ✓ Make a list of **vitamin deficiencies** and their symptoms, their natural sources, and their function in the body.
- ✓ What are the **common treatments for Vit deficiency**

17

High

Learning Point from Q16

D 120 hours

Mr C has been admitted to A&E following an overdose of digoxin. His serum digoxin concentration on admission is 4.5 micrograms/L.

Given that digoxin has a half-life of 60 hours, and assuming that his renal function is stable and absorption is complete, how long will it take for the digoxin plasma level to reach 1.125 micrograms/L?

4.5 mcg/L ---> 2.25 ---> 1.125
2 half lives = 60 x 2 = 120 hrs

GPhC Learning Point:
Using pharmaceutical calculations to verify the safety of doses and administration rates


18

High

Learning Point from Q17

C 28 days

1 All patient receiving electrical cardioversion are required to be provided 3 weeks of anticoagulation prior to the procedure (If possible, this can be omitted if patient has life-threatening haemodynamic instability). **This should then be followed with 4 weeks of anticoagulation to reduce the risk of prothrombotic events post-procedure.**

2 Learning points going forward: 

- ☒ Atrial fibrillation treatment guidelines
- ☒ Anticoagulation guidelines
- ☒ Cardioversion
- ☒ Stroke prevention

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19

High

Learning Point from Q18


A Mrs V should take folic acid 400 mcg daily for the first 12 weeks of pregnancy

1 MHRA/CHM advice: Carbimazole; increased risk of congenital malformations; strengthened advice on contraception (February 2019)

Carbimazole is associated with an increased risk of congenital malformations when used during pregnancy, especially in the first trimester and at high doses (daily dose of 15 mg or more).

Women of childbearing potential should use effective contraception during treatment with carbimazole. It should only be considered in pregnancy after a thorough benefit-risk assessment, and at the lowest effective dose without additional administration of thyroid hormones—close maternal, fetal, and neonatal monitoring is recommended.

However, Mrs V is not taking carbimazole, her husband is and, as such her pregnancy is not affected by it. She should take the regular dose of folic acid recommended in pregnancy i.e. 400 mcg. A higher dose of 5 mg is recommended for women whose baby is at a higher risk of congenital abnormalities such as those with a history of neural tube defects

2 Learning points going forward: 

- ☒ Drugs avoided in pregnancy
- ☒ Carbimazole MHRA warnings
- ☒ Advice regarding supplementation in pregnancy

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20

High

Learning Point from Q19

B 5 tablets

1 Zopiclone is CD 4
Length of treatment If the emergency supply is for a CD (i.e. phenobarbital or Schedule 4 or 5 CD), the maximum quantity that can be supplied is for five days' treatment.

2 Important reminders for CDs

- EEA prescribers can legally prescribe - only schedule 4/5
- Is prescription repeatable - only schedule 4/5
- Emergency supply - only schedule 4/5 + Phenobarbital for epilepsy
- Requisition necessary? Only for schedule 2/3
- Midwife supply orders: diamorphine, morphine, pethidine

3 Learning points going forward:

- ☒ CD classifications
- ☒ Legal requirements for a controlled drug requisition
- ☒ Safe custody
- ☒ Emergency supply
- ☒ Prescription requirements

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21

High

Learning Point from Q20

D Contact the prescriber as the dose of simvastatin should be adjusted to 20 mg daily with concurrent use of ranolazine tablets

1 Simvastatin dose interactions:

Dose adjustments due to interactions

Manufacturer advises max. 10mg daily with concurrent use of bezafibrate or ciprofibrate.

Manufacturer advises max. 20mg daily with concurrent use of amiodarone, amlodipine, or ranolazine.

Manufacturer advises reduce dose with concurrent use of some moderate inhibitors of CYP3A4 (max. 20mg daily with verapamil and diltiazem).

Manufacturer advises max. 40mg daily with concurrent use of lomitapide or ticagrelor.

Manufacturer advises max. 20mg daily with concurrent use of elbasvir with grazoprevir.

Manufacturer advises usual max. 20mg daily with concurrent use of bempedoic acid or bempedoic acid with ezetimibe; max. dose 40 mg daily in patients with severe hypercholesterolaemia and at high risk of cardiovascular complications.

Important learning point
Candidates must be able to know these dose adjustments

Candidates are expected to know significant drug interactions and be able to decide when a prescriber should be contacted.



2 Learning points going forward:

- ☒ Cardiovascular disease risk assessment;
- ☒ Simvastatin dosing, interactions, contraindications;
- ☒ Cautions and advise on muscle effects, hypothyroidism, Interstitial lung disease, conception and pregnancy.
- ☒ Revision on statins and hypercholesterolemia

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22

Medium

 **Learning Point from Q21** 

D Contact the prescriber and inform them that you recommend Mr M is started on the lower strength NiQuitin preparation

1 **Adults 18 years and over**

Abrupt cessation of smoking:

During a quit attempt every effort should be made to stop smoking with NiQuitin patches.

NiQuitin therapy should usually begin with NiQuitin 21 mg and be reduced according to the following dosing schedule:


Dose	Duration
Step 1 NiQuitin 21 mg	First 6 weeks
Step 2 NiQuitin 14 mg	Next 2 weeks
Step 3 NiQuitin 7 mg	Last 2 weeks

→ Light smokers (e.g. those who smoke less than 10 cigarettes per day) are recommended to start at Step 2 (14 mg) for 6 weeks and decrease the dose to NiQuitin 7 mg for the final 2 weeks.

Patients on NiQuitin 21 mg who experience excessive side-effects (please refer to precautions), which do not resolve within a few days, should change to NiQuitin 14mg. This strength should then be continued for the remainder of the 6 week course before stepping down to NiQuitin 7mg for two weeks. If the symptoms persist the patient should be advised to seek the advice of a healthcare professional.

23

High


Learning Point from Q22 

B 10-20 mg/L

1 **Phenytoin therapeutic drug requirements:**


In adults

The usual total plasma-phenytoin concentration for optimum response is 10–20mg/litre (or 40–80micromol/ litre). In pregnancy, the elderly, and certain disease states where protein binding may be reduced, careful interpretation of total plasma-phenytoin concentration is necessary; it may be more appropriate to measure free plasma-phenytoin concentration.

 • ProPharmace High Risk Drugs Guide

Therapeutic range for other high risk drugs:

- Carbamazepine: 4-12 mg/L
- Digoxin 0.8-2 mcg/L
- Lithium: 0.4- 1 mmol/L
- Theophylline: 10-20 mg/L
- Vancomycin: 10-15 mg/L

2 **Learning points going forward:** 

☒ **Therapeutic drug monitoring** requirements for all **high risk drugs**

24

High

Learning Point from Q23

E Tell the mother she should call 999, ask for an ambulance and state "anaphylaxis", even if symptoms are improving

1 Signs of a severe anaphylactic reaction:

- Swelling in the throat (altered voice, difficulty swallowing or breathing)
- Wheezing
- Dizziness feeling faint, tiredness (low BP)

The individual should use an adrenaline auto-injector, if they do not feel better after the first injection, the second injector should be used 5-15 minutes after the first.

2 Advice for patients and carers:

- Carry two adrenaline auto-injectors at all times.
- Use the adrenaline auto-injector at the first signs of a severe allergic reaction.
- Take the following actions immediately after every use of an adrenaline auto-injector:
 - a. Call 999, ask for an ambulance and state "anaphylaxis", even if symptoms are improving.
 - b. Lie flat with the legs raised in order to maintain blood flow. If you have breathing difficulties sit up to make breathing easier.
 - c. Seek help immediately after using the auto-injector and if at all possible stay with the person while waiting for the ambulance.
- Check the expiry date of the adrenaline auto-injectors and obtain replacements before they expire. Expired injectors will be less effective.

3 Learning points going forward:

- ☒ First aid procedure
- ☒ Emergency treatment of anaphylaxis

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25

High

Learning Point from Q24

A Action

1 Stages of change behavioural model:

Mr AJ is at the 'Action' stage as he is ready to find a clinic where he could receive the appropriate help to recover from his addiction due to losing his friend recently.

2 Learning points going forward:

- ☒ Define each stage of the change model
- ☒ How does this apply to services such as smoking cessation, weight loss etc

Refer back to the ProPharmace consultation skills guide under day 3 on your VLE

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26

High

Learning Point from Q25

A Co-amoxiclav

1 **Animal bites**

Seek medical advice for an animal bite if it may be infected:

- redness and swelling around the wound
- Feels warm and increasingly painful
- liquid or pus leaks from the wound
- a fever of 38 degrees or above
- sweats and chills
- swollen glands under the chin or in the neck, armpits or groin
- red streaks extending along the skin from the wound

Treatment for animal bite infection

- **Oral first line:**
 - Co-amoxiclav.
 - Alternative in penicillin allergy or co-amoxiclav unsuitable: **doxycycline with metronidazole**; seek specialist advice in pregnancy.
- **Intravenous first line:**
 - Co-amoxiclav.
 - Alternative in penicillin allergy or co-amoxiclav unsuitable: **cefuroxime or ceftriaxone, with metronidazole**; seek specialist advice if a cephalosporin is not appropriate.

2 **Learning points going forward:**

- ☒ Skin infections and their treatment
- ☒ Alternatives in penicillin allergy

27

High

Learning Point from Q26

B Decrease the dose and maintain the dosing interval

1 **Gentamicin therapeutic dose monitoring**

For multiple daily dose regimens, blood samples should be taken approximately 1 hour after intramuscular or intravenous administration ('peak' concentration) and also just before the next dose ('trough' concentration). If the pre-dose ('trough') concentration is high, the interval between doses must be increased. If the post-dose ('peak') concentration is high, the dose must be decreased.

2 Mr C's trough level was 0.5 mg/L, and peak level was 7 mg/L, therefore his peak level is above the target range (3-5 mg/L) hence the dose must be decreased and dosing interval to be maintained

3 **Learning points going forward:**

- ☒ High risk drugs - drug monitoring
- ☒ Gentamicin
- ☒ Define trough and peak serum levels and how they affect dosing

28

High

Learning Point from Q27

D Serum creatinine

1 **Gentamicin monitoring**

Excretion of aminoglycosides is principally via the kidney and accumulation occurs in renal impairment. Ototoxicity and nephrotoxicity occur commonly in patients with renal failure. Therefore it is important to monitor serum creatinine and creatinine clearance.

If there is impairment of renal function, the interval between doses must be increased; if the renal impairment is severe, the dose itself should be reduced as well.

GPhC Learning Point:
Candidates are expected to recognise and manage adverse effects of medicines

• ProPharmace high-risk drugs guide

3 **Learning points going forward:**

- ☒ High risk drugs - drug monitoring
- ☒ Gentamicin - monitoring
- ☒ Define trough and peak serum levels and how they affect dosing

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29

Medium

Learning Point from Q28

B Miss M is presenting signs of measles, which is a notifiable disease. Refer Miss M to her GP and notify the local Health Protection Team.

1 Measles starts with cold-like symptoms (runny/ blocked nose, sneezing, swollen eyelids, high temperature, cough) that develop about 10 days after becoming infected. This is followed by a rash (small, red-brown, flat, raised spots that may join together to form blotchy patches), and small greyish-white spots in their mouth.



Measles is a notifiable disease to the local health protection team (HPT) and all notifiable diseases must be referred.

2 **Learning points going forward:**


- ☒ Responding to symptoms in the community
- ☒ List of notifiable disease

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30

High

Learning Point from Q29




D Refuse the sale of the folic acid tablets and advise her to see her prescriber as soon as possible

1 In women who take valproate while pregnant, around 1 in 10 babies will have a birth defect. In women who take valproate while pregnant, about 3–4 children in every 10 may have developmental problems. The long-term effects are not known.


Valproate **must not be used in any woman or girl able to have children** unless there is a pregnancy prevention programme (PPP) in place.

Other options:

- A. Pregnant women should take a multi-vitamin but this does not address the use of valproate
- B. Miss RG should not be told to stop her medication abruptly as it may increase the risk of status epilepticus
- C. Epileptic pregnant women require a higher strength folic acid (5 mg)
- E. The decision to continue the use of valproate in this patient rests with the prescriber and the patient should be referred.

 <https://www.gov.uk/guidance/valproate-use-by-women-and-girls>

2 Learning points going forward:




- ☒ Medications to avoid during pregnancy
- ☒ Pregnancy prevention programme
- ☒ Sodium valproate

31

Medium

Learning Point from Q30




B Swallow tablets whole with a full glass of water; on rising 30 minutes before the first food or drink of the day

1 **Directions for administration**

Manufacturer advises swallow tablets whole with full glass of water; on rising, take on an empty stomach at least 30 minutes before first food or drink of the day **or**, if taking at any other time of the day, avoid food and drink for at least 2 hours before or after risedronate (particularly avoid calcium-containing products e.g. milk; also avoid iron and mineral supplements and antacids); stand or sit upright for at least 30 minutes; do not take tablets at bedtime or before rising.

Other drugs that should be taken on an empty stomach:

- Alendronic acid 30 mins before breakfast
- Levothyroxine 30–60 minutes before food or drink

2 Learning points going forward: 


- ☒ Counselling advice for common drugs
- ☒ Bisphosphonates

32

High

Learning Point from Q31

E Morphine Sulphate 50mg/50ml solution for infusion, 80ml per 24 hours



1 The equivalent parenteral dose of morphine (subcutaneous, intramuscular, or intravenous) is half of the oral dose. If the patient becomes unable to swallow, generally morphine is administered as a continuous subcutaneous infusion.

Total oral dose: 160 mg
 Half of the oral dose: 80 mg

Options A/B are for injection
Option C/D patch strength are too high

<https://bnf.nice.org.uk/guidance/prescribing-in-palliative-care.html>

2 Learning points going forward:

☒ Accurately perform calculation affecting patient care

☒ **Morphine oral to IV conversions**


☒ Prescribing in palliative care

33

Medium


Learning Point from Q32

B Folliculitis



1 Symptoms of folliculitis include clusters of small red bumps or white-headed pimples that develop around hair follicles, pus filled blisters that break open and crust over, itchy burning skin and painful, tender skin.

Folliculitis can occur in patients who do not apply their cream in the direction of hair growth. Emollients should be applied in the direction of hair growth to reduce the risk of folliculitis.



<https://www.nhs.uk/conditions/ingrown-hairs/>

2 Learning points going forward:

☒ Counselling advice regarding the use of emollient creams

☒ Responding to symptoms in the community

☒ **Recognizing different skin conditions**

34

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17

Medium

Learning Point from Q33

E The prescription is not legally valid.

1

Pharmacy stamp <small>Please don't stamp over age box</small>	Age D.O.B	Title, Forename, Surname & Address Ms T 45 High street W7 8LE
Number of day's treatment <small>180 Ensure 2800 mg supplements</small>	Isotretinoin 50 mg Once daily Supply 28 tablets	
Signature of Prescriber 		Date 29/4/2021
For Dispense <small>xxx</small>	Dr xxx xxx Surgery	

2 Learning points going forward:

- ☒ Isotretinoin and pregnancy prevention programme

A Patients should be advised to speak to their doctor if they experience any changes in mood or behaviour, and encouraged to ask family and friends to look out for any change in mood. However, it is not contraindicated.

B You cannot supply isotretinoin without a negative pregnancy test

C You can't supply isotretinoin as the prescription is not legally valid

D There is no interaction between isotretinoin and citalopram

E The prescription is valid for 7 days only, this is dated 29th April

35

Medium

Learning Point from Q34

D Levothyroxine is best taken in the morning with breakfast.

1 Levothyroxine is best taken in the morning. The dose should be taken at least 30 minutes before breakfast, caffeine-containing liquids or other medication. Caffeine, antacids, calcium salts and iron salts can reduce the absorption of levothyroxine

2 Learning points going forward:

- ☒ Counselling advice - method of administration
- ☒ Thyroid conditions

A Calcium salts can reduce the absorption of levothyroxine - this is correct

B You should leave a 4 hour gap between taking iron and levothyroxine - this is correct

C You should wait at least 30 mins after taking your levothyroxine before you drink coffee or tea - this is correct

D Levothyroxine is best taken in the morning with breakfast - this is incorrect therefore the least appropriate option


E You should not take antacids at the same time as levothyroxine - this is correct

36

Low

Learning Point from Q35

A Thiamine deficiency




1 Symptoms of thiamine deficiency B1:

- Fatigue
- Loss of appetite
- Weight loss
- Nausea
- weakness
- Mental confusion
- paralysis of extremities
- Gastrointestinal upset

Also, alcoholism can cause thiamine deficiency, leading to Wernicke's encephalopathy


Advice for those taking thiamine supplements

- You'll usually take thiamine once a day if you have a mild vitamin B1 deficiency.
- You can take it with or without food.
- It's best to avoid alcohol if you are taking thiamine for a vitamin B1 deficiency.
- Some people may feel sick or have a stomach ache when taking thiamine, but these side effects are usually mild.



Propharmace vitamins and minerals

2 Learning points going forward:



☒ Vitamin deficiencies


☒ Alcohol dependence

37

High

Learning Point from Q36


B 48 mmol/mol (6.5%) or lower



1 A target HbA1c concentration of 48mmol/mol (6.5%) or lower is recommended in patients with type 1 diabetes. Blood-glucose concentration should be monitored at least four times a day, including before each meal and before bed. Patients should aim for:

- a fasting blood-glucose concentration of 5–7 mmol/litre on waking;
- a blood-glucose concentration of 4–7 mmol/litre before meals at other times of the day;
- a blood-glucose concentration of 5–9 mmol/litre at least 90 minutes after eating;
- a blood-glucose concentration of at least 5 mmol/litre when driving.


2 Learning points going forward:



☒ Insulin regimens

☒ Insulin types

☒ Type 1 diabetes



<https://bnf.nice.org.uk/treatment-summary/type-1-diabetes.html>

38

High

Learning Point from Q37

B Give Mr A 200ml of pure apple juice

1 Hypoglycaemia symptoms

- sweating
- feeling tired
- [dizziness](#)
- feeling hungry
- tingling lips
- feeling shaky or trembling
- a fast or pounding heartbeat ([palpitations](#))
- becoming easily irritated, tearful, anxious or moody
- turning pale

<https://bnf.nice.org.uk/treatment-summary/hypoglycaemia.html>

2 Any patient with a blood-glucose concentration less than 4 mmol/litre, with or without symptoms, and who is conscious and able to swallow, should have 15–20 g of fast-acting carbohydrate. This is available in approximately 3–4 heaped teaspoonfuls of sugar dissolved in water, 4–7 glucose tablets, or 150–200 mL of pure fruit juice

3 Learning points going forward:

- ☒ Hypoglycaemia signs and symptoms
- ☒ Hypoglycaemia treatment
- ☒ Counselling advice on hypoglycaemia on preventing and recognizing symptoms when taking other medications

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39

High

Learning Point from Q38

B Mr N should withhold the next 1 or 2 doses of warfarin and the subsequent maintenance dose should be reduced

1 INR 5.0–8.0, no bleeding—withhold 1 or 2 doses of warfarin sodium and reduce subsequent maintenance dose

- ☒ **A** Incorrect as this is when there is a minor bleeding
- ☒ **C** Incorrect as this is when the INR > 8.0
- ☒ **D** Incorrect as this is when the INR >8.0
- ☒ **E** Incorrect A&E referral is not required

2 Learning points going forward:

- ☒ Candidates must be able to recall what a normal INR is, in association
- ☒ with their health condition
- Warfarin and risk of bleeding

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40

Medium

Learning Point from Q39

A Take the missed contraceptive pill immediately, and take the next pill at the normal time. Miss Z does not need to take the morning after pill.

1 Missed pill

The following advice is recommended: 'If you forget a pill, take it as soon as you remember and carry on with the next pill at the right time. If the pill was more than 12 hours overdue you are not protected. Continue normal pill-taking but you must also use another method, such as the condom, for the next 2 days'.

The Faculty of Sexual and Reproductive Healthcare recommends emergency contraception if one or more tablets are missed or taken more than 12 hours late and unprotected intercourse has occurred before 2 further tablets have been correctly taken.

2 Learning points going forward:

- ☒ Revise emergency contraception and terms under which it should be supplied
- ☒ Hormonal contraception
- ☒ Missed pill in COC vs POC and other types

<https://www.nhs.uk/conditions/contraception/miss-combined-pill/>

41

Medium

Learning Point from Q40

E Contact the prescriber as Gaviscon is currently not suitable for Baby Y

1

Pharmacy stamp <small>Please don't stamp over age box</small>	Age 7m D.O.B	Title, Forename, Surname & Address Baby Yeller 45 Close Drive NW7 7QE
Number of day's treatment	NHS Number 12345678	
Endorsements	Gaviscon infant sachets 1 dose prn, mix with feeds. Max 6 doses/day	
	Diarolyte sachets Give as directed	

Alginic acid is contraindicated where excessive water loss likely (e.g. fever, diarrhoea, vomiting, high room temperature)


<https://bnf.nice.org.uk/drug/alginic-acid.html>

42

High


Learning Point from Q41

E An independent investigation



1 Root Cause Analysis (RCA), should be applied for the investigation of Serious Incidents. This endorses three levels of investigation:

1. Concise investigations: suited to less complex incidents which can be managed by individuals or a small group of individuals at a local level
2. Comprehensive investigations -suited to complex issues which should be managed by a multidisciplinary team involving experts and/or specialist investigators
3. Independent investigations -suited to incidents where the integrity of the internal investigation is likely to be challenged or where it will be difficult for an organisation to conduct an objective investigation internally due to the size of organisation, or the capacity/ capability of the available individuals and/or number of organisations involved.




england.nhs.uk/patientsafety/wp-content/uploads/sites/32/2015/04/serious-incident-framwrk-upd2.pdf

43

High

Learning Point from Q42

C If he develops signs of hypoglycaemia while driving, he should stop the vehicle in a safe place, switch off the engine, move away from the driver's seat and consume a suitable source of sugar




1

✗ **A** He should check his blood glucose 2 hours before driving and every 2 hours while driving


✗ **B** His blood glucose should always be above 5 mmol/L while driving

✗ **D** If he develops hypoglycaemia while driving he should wait until 45 minutes after blood glucose has returned to normal, before continuing the journey

✗ **E** All drivers who are treated with insulin must inform the DVLA, regardless whether they have had a hypoglycaemic attack or not

2 Learning points going forward: 

- ☒ Hypoglycaemia signs and symptoms
- ☒ Hypoglycaemia treatment
- ☒ Counselling advice on hypoglycaemia on preventing and recognizing symptoms when taking other medications



<https://www.diabetes.org.uk/guide-to-diabetes/life-with-diabetes/driving>


44


High


Learning Point from Q43


E The use of amiodarone can increase the sensitivity of skin to sunlight therefore, it is advised that the patient uses a wide-spectrum sunscreen, avoids the prolonged exposure to sunlight and the use of sunbeds.


1 Amiodarone safety information


Corneal micro-deposits
 **Counseling:** patient may experience night-time glares when driving.


Optic neuropathy/neuritis (blindness)
 Stop if vision is impaired, reversible on withdrawal of treatment.

Pneumonitis, pulmonary fibrosis
 Counsel patient on symptoms of shortness of breath and dry cough

Peripheral neuropathy
 Counsel patients on symptoms of numbness, tingling hands and feet, and tremors

Phototoxicity (burning, erythema)
 Slate-grey skin on light-exposed areas
 Patient advised to shield the skin from light during treatment and a few months after stopping and to use a wide-spectrum, high spf sunscreen.

Hepatotoxicity
 Report jaundice, nausea, vomiting, malaise, itching, bruising, abdominal pain. Liver transaminases levels are raised 3-fold

2 Learning points going forward: 

- ☒ Amiodarone safety information
- ☒ Cautions, monitoring and counselling advice

45

High


Learning Point from Q44

B Ibuprofen (Nurofen)

1 In adults and children aged 16 years and older, a stepwise strategy for managing mild-to-moderate pain is recommended:

- **Step 1** – start [paracetamol](#).
- **Step 2** – substitute the [paracetamol](#) with ibuprofen. If the person is unable to take a [nonsteroidal anti-inflammatory drug](#) (NSAID), use a [weak opioid](#) (such as codeine phosphate).
- **Step 3** – add [paracetamol](#) to the ibuprofen or [weak opioid](#).
- **Step 4** – continue with [paracetamol](#) and replace the ibuprofen with an alternative NSAID (such as naproxen).
- **Step 5** – add a [weak opioid](#) to the [paracetamol](#) and/or NSAID.

cks.nice.org.uk/topics/analgesia-mild-to-moderate-pain/


2 Learning points going forward: 


- ☒ Pain management ladder
- ☒ Analgesics
- ☒ NSAIDs
- ☒ advice on pulled muscle

First-step for mild-moderate pain in paracetamol, but patient has tried that already and is not helping therefore, the next step would be Ibuprofen.

46

Medium

 **Learning Point from Q45**



E Authorise dispensing of this medication with the current label

1 Veterinary label requirements:

1. Name of the prescribing veterinary surgeon
2. Name and address of the animal owner
3. Name and address of the pharmacy
4. Identification and species of the animal
5. Date of supply
6. Expiry date of the product
7. The name or description of the product or its active ingredients and content quantity
8. Dosage and administration instructions
9. The words: 'For animal treatment only'
10. The words: 'Keep out of reach of children'

20 Cefalexin 250mg tablets
 Give two tablets by mouth every 12 hours for ten days. Can give with or without food.
 Mr D, owner of Furry the cat –
 90 Homedale Road, W9 9LL.
 Prescribed by L. Matthews.
 For animal treatment only.
 29/3/2019 Exp: 1/7/2021
 Heckler Pharmacy, 88 Standstead Way, LU7 8JL.
 Keep out of reach of children.


2 Learning points going forward:

- ☒ Vet prescription requirements
- ☒ Categories of Vet medicines
- ☒ What is under the veterinary cascade
- ☒ Sale of unauthorised veterinary medicines

47

Medium


Learning Point from Q46



D 5 years

1 It is a requirement to keep records of receipt and supply of POM-V and POM-VPS products showing:

- Name of the medicine
- Date of the receipt or supply
- Batch number
- Quantity
- Name and address of the supplier or recipient
- If there is a written prescription, record the name and address of the prescriber and keep a copy of the prescription
- Pharmacists can either keep all documents that show the required information or can make appropriate records in their private prescription book
- Records can be kept electronically
- Records and documents must be kept for at least five years
- Pharmacies that supply POM-V and POM-VPS medicines must undertake an annual audit

 **MEP 43**

2 Learning points going forward:

- ☒ Vet prescription requirements
- ☒ Categories of Vet medicines
- ☒ What is under the veterinary cascade
- ☒ Sale of unauthorised veterinary medicines

48

High

Learning Point from Q47

E Recommend Mr R seeks medical attention

1 MHRA/CHM advice: Hydrochlorothiazide: risk of non-melanoma skin cancer, particularly in long-term use (November 2018)

The MHRA advises healthcare professionals to:

- inform patients taking hydrochlorothiazide-containing products of the cumulative, dose-dependent increased risk of non-melanoma skin cancer, particularly in long-term use, and advise patients to regularly check for and report any new or changed skin lesions or moles;
- advise patients to limit exposure to sunlight and UV rays and use adequate sun protection;
- reconsider the use of hydrochlorothiazide in patients who have had previous skin cancer;
- examine all suspicious moles or skin lesions (potentially including histological examination of biopsies).

<https://www.gov.uk/drug-safety-update/hydrochlorothiazide-risk-of-non-melanoma-skin-cancer-particularly-in-long-term-use>

2 Learning points going forward:

- ☒ MHRA/CHM advice and warnings

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Low


Learning Point from Q48

B Take the controlled drugs and store them in the CD cupboard, away from the pharmacy stock, and clearly marked as patient returned CDs. Denature the CD drugs with a witness from the pharmacy present.

1 TABLE 15: DENATURING AND WITNESS REQUIREMENTS FOR PATIENT-RETURNED AND EXPIRED CONTROLLED DRUGS

	IS DENATURING REQUIRED?	IS AN AUTHORISED WITNESS REQUIRED?	RECORD KEEPING
PATIENT-RETURNED CONTROLLED DRUG	Yes, if Schedule 2, 3 or 4 (part 1)	No. However it is preferable for denaturing to be witnessed by another member of staff familiar with CDs (preferably a registered health professional)	A record should not be made in the CD register but records of patient-returned Schedule 2 CDs and their subsequent destruction should be recorded in a separate record for this purpose
EXPIRED/OBSOLETE/UNWANTED STOCK	Yes, if Schedule 2, 3 or 4 (part 1)	Yes, if Schedule 2. For Schedule 3 medicines it would be good practice to have another member of staff witness the denaturing	An entry should be made in the CD register for Schedule 2 CDs

Patient returned CD's need to be denatured if Sch 2/3 or 4 but do not require an authorised witness

 **MEP 43**

2 Learning points going forward:

- ☒ Destruction of CDs
- ☒ Classification of CDs
- ☒ Record keeping for destroyed medicines

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50

Medium

Learning Point from Q49

D 240 mg

1 **Paracetamol 120mg/5ml syrup**

2-3 months 2.5 ml and if necessary after 4-6 hrs give a second dose (No more than 2 doses per 24 hrs)

3-5 months	60 mg		2.5 ml
6-23 months	120 mg		5 ml
2-3 years old	180 mg		5 ml + 2.5 ml
4-5 years old	240 mg		5 ml + 5 ml

GPhC Learning Point: need to know

- Candidates are expected to know the doses of both paracetamol and ibuprofen for children

2 Learning points going forward:

- Check the **different strengths of Paracetamol and ibuprofen products** available OTC and know their licensed age ranges and doses.

Diagnose acute otitis media (AOM) if there is acute onset of symptoms, including:

- In older children and adults—earache.
- In younger children—holding, tugging, or rubbing of the ear, or non-specific symptoms such as fever, crying, poor feeding, restlessness, behavioural changes, cough, or rhinorrhoea.

51

Low

Learning Point from Q50

C Sell pack of 7 esomeprazole 20mg tablets

1 **TABLE 21 : ACTIVITIES THAT CAN TAKE PLACE WITH A RESPONSIBLE PHARMACIST IN CHARGE OF THE PHARMACY (BUT DOES NOT REQUIRE SUPERVISION OF A PHARMACIST)**

ACTIVITY	OTHER POINTS TO CONSIDER
Sale of GSL medicines	Undertaken by suitable trained staff and operating within an agreed documented operating procedure.
Processing waste stock medicines or patient returned medicines (excluding CDs)	<p>Undertaken by suitable trained staff and operating within an agreed documented operating procedure.</p> <p>There are also medicines disposal obligation in NHS pharmaceutical services legislation.</p> <p>Responsible Pharmacists and Superintendents should give consideration to processing stock or patient returned medicines which are CDs.</p>

GPhC Learning Point: need to know

- Trainees are expected to know the remit of a responsible pharmacist

MEP 43 - The responsible pharmacist

2 Learning points going forward:

- Activities that can take place without a responsible pharmacist to be in charge of the pharmacy but requires supporting staff to be trained.

52

High

Learning Point from Q51

A Alanine aminotransferase

1 Before starting a statin:
Perform the following baseline blood tests to ensure that lipid-modification treatment is suitable for the person:

- Creatine kinase (CK) - ask the person if they have persistent generalized unexplained muscle pain
- Liver function tests (alanine aminotransferase or aspartate aminotransferase)
- Renal function (including estimated glomerular filtration rate)
- HbA1c
- Thyroid stimulating hormone

After initiating a statin:

- **Repeat liver function tests (LFTs) within 3 months of starting treatment, and again at 12 months.**
- Checking creatine kinase (CK) if unexplained muscle symptoms (such as pain, tenderness, or weakness) develop.

2 Learning points going forward:

- ☒ Statins and hypercholesterolemia
- ☒ Cardiovascular disease
- ☒ Cautions and advise on muscle effects, hypothyroidism, interstitial lung disease, conception and pregnancy

53

High

Learning Point from Q52

B MrAG should re-start the usual dose of lithium as soon as possible

1 What if a patient forgets to take their lithium dose:

- tablets or slow-release tablets – if it's less than 6 hours since you were supposed to take your lithium, take it as soon as you remember. If it is more than 6 hours, just skip the missed dose and take your next one at the usual time
- liquid – if you forget to take a dose, just skip the missed dose and take your next one at the usual time

2 Learning points going forward:

- ☒ **Lithium**
- ☒ Bipolar disorder
- ☒ **High risk drugs**
- ☒ Overdose management

[Propharmace high risk drugs guide](#)

54

High

Learning Point from Q53

B Ibuprofen

All NSAIDs are associated with serious gastro-intestinal toxicity; the risk is higher in the elderly.

Highest risk of GI effects

1. Piroxicam, Ketoprofen and ketorolac trometamol
2. Indometacin, diclofenac and naproxen
3. Ibuprofen
4. Selective inhibitors of COX-2 e.g. celecoxib

Lowest risk of GI effects

Recommendations are that NSAIDs associated with a low risk e.g. ibuprofen are generally preferred, to start at the lowest recommended dose and not to use more than one oral NSAID at a time.

2 Learning points going forward:

- ☑ NSAIDs and their effect on GI and cardiovascular events
- ☑ High risk drugs
- ☑ NSAIDs safety information and counselling

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55

High

Learning Point from Q54

D Constipation

1 Long-term effects of Proton Pump Inhibitors

MHRA/CHM warning

Very low risk of subacute cutaneous lupus erythematosus. Lesions occur, especially on sun-exposed areas, with arthralgia. Counsel patients to avoid sun exposure and to stop the PPI

- Hypomagnesemia - predispose to digoxin toxicity- monitoring required before prolonged treatment.
- Fractures
- Rebound acid secretion
- May mask symptoms of gastric cancer
- Increased risk of fractures and risk of osteoporosis (maintain adequate intake of calcium and vitD)
- Increased risk of GI infections. C.difficile (reduced acidity)

Useful resources:

- <https://www.rpharms.com/resources/quick-reference-guides/proton-pump-inhibitors>



2 Learning points going forward:

- ☑ POM to P Omeprazole
- ☑ PPI's

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56


Medium

 **Learning Point from Q55** 


B Mr N should discontinue metformin at the time of surgery, and re-start it no earlier than 48 hours post surgery if normal renal function has been established

1 From the SPC under section 4.4 special warnings and precautions for use:

Surgery
Metformin Hydrochloride must be discontinued at the time of surgery under general, spinal or epidural anaesthesia. Therapy may be restarted no earlier than 48 hours following surgery or resumption of oral nutrition and provided that renal function has been re-evaluated and found to be stable.

 **Useful resources:**


- Propharmace resources practice slides

2 **Learning points going forward:** 

☒ Practice identifying what is included under each section of an SPC extract and practice being able to turn to the relevant section to reduce reading time

57


Medium

Learning Point from Q56 

C Hypocalcaemia


1 **Contraindications for all thiazides:**

- Addison's disease;
- **hypercalcaemia**;
- hyponatraemia;
- refractory hypokalaemia;
- symptomatic hyperuricaemia

 **Loop diuretics on the other hand cause Hypocalcaemia**

Thiazides cause:


- hypercalcaemia
- Hypo - K/Na/Mg/Cl
- Hyperglycaemia - exacerbate diabetes
- Hyperuricaemia - exacerbate gout

2 **Learning points going forward:** 


- ☒ Thiazides and thiazide-like diuretics
- ☒ Loop diuretics
- ☒ Potassium-sparing diuretics

58

High



Learning Point from Q57



D

Her first child who was born at 4.6kg

1 From the resource:

Assess the risk of gestational diabetes using risk factors in a healthy population. At the booking appointment, check for the following risk factors:

- BMI above 30 kg/m²
- previous macrosomic baby weighing 4.5 kg or more
- previous gestational diabetes
- family history of diabetes (first-degree relative with diabetes)
- an ethnicity with a high prevalence of diabetes.


Offer women with any of these risk factors testing for gestational diabetes (see recommendations 1.2.5 to 1.2.7). [2008, amended 2015]

2 Learning points going forward:


☒ Practice identifying what is included under each section of an SPC extract and practice being able to turn to the relevant section to reduce reading time.

59

High



Learning Point from Q58



B

Advise Mr T to stop taking carbimazole and to visit the GP immediately

1 Neutropenia and agranulocytosis

Manufacturer advises of the importance of recognising bone marrow suppression induced by carbimazole and the need to stop treatment promptly.

- Patient should be asked to report symptoms and signs suggestive of infection, especially sore throat.
- A white blood cell count should be performed if there is any clinical evidence of infection.
- Carbimazole should be stopped promptly if there is clinical or laboratory evidence of neutropenia.

Other warnings for carbimazole:

- MHRA/CHM advice: Carbimazole: increased risk of congenital malformations; strengthened advice on contraception (February 2019)
- MHRA/CHM advice: Carbimazole: risk of acute pancreatitis (February 2019)

2 Learning points going forward:

☒ Carbimazole

☒ High risk drugs

☒ Counselling on signs of neutropenia

Patients should report symptoms and signs suggestive of infection especially sore throat and should stop the medication and seek medical attention immediately.

60

Medium

Learning Point from Q59

A Take with or just after food, or a meal

Following a recent blood test, Mr R is diagnosed with type 2 diabetes mellitus. He agrees with his GP to start taking metformin 500mg daily for one week and then twice a day thereafter and repeat the blood test in 3 months.



Which of the following cautionary labels must be present on the dispensing label for metformin?

- A Take with or just after food, or a meal
- B Take 30 to 60 minutes before food
- C Take with a full glass of water
- D Do not drink alcohol
- E May cause harmless discolouration of the urine

1 Candidates are expected to recognise different classes of oral antidiabetics and that metformin is the only biguanide. Metformin must always be taken with a meal, usually breakfast

2 Learning points going forward:

- ☒ Warning labels for common medications

61

Medium

Learning Point from Q60

A Beclometasone dipropionate inhaler 100mcg twice daily

1 **BTS/SIGN (2019) treatment recommendations for children**

Intermittent reliever therapy

- Start an inhaled short-acting beta2 agonist (such as salbutamol or terbutaline sulfate).



Regular preventer (maintenance) therapy

BTS/SIGN (2019) recommend starting a very low-dose (child aged 5–12 years) or a low-dose (child aged over 12 years) of ICS in children presenting with any one of the following features: using an inhaled short-acting beta2 agonist three times a week or more, symptomatic three times a week or more, waking at night due to asthma symptoms at least once a week, or have had an asthma attack in the last 2 years, and starting an ICS at a dose appropriate to the severity of asthma.

Patient is already on intermittent reliever therapy, and the next step would be to add a very low dose of ICS - according to BTS guidelines a very low dose would be clenil 50 mg two puffs twice daily



2 Learning points going forward:

- ☒ Asthma Nice and BTS guidelines
- ☒ Referral for review of asthma treatment
- ☒ Counselling on asthma therapies

62

Medium

 **Learning Point from Q61** 

D Ferinject may be administered via an intravenous infusion if the solution has been diluted in sterile 0.9% m/V sodium chloride.

1 *Intravenous infusion*

Ferinject may be administered by intravenous infusion, in which case it must be diluted. The maximum single dose is 20 mg iron/kg body weight, but should not exceed 1,000 mg iron.


For infusion, Ferinject must only be diluted in sterile 0.9% m/V sodium chloride solution as shown in Table 3. Note: for stability reasons, Ferinject should not be diluted to concentrations less than 2 mg iron/mL (not including the volume of the ferric carboxymaltose solution). For further instructions on dilution of the medicinal product before administration, see section

2 **A** Incorrect: the Hb level should be re-assessed no earlier than 4 weeks post final ferinject administration to allow adequate time for erythropoiesis and iron utilisation

B Ferinject must not be administered by the SC or IM route

C Ferinject may be administered by IV injection using undiluted solution



E Preparations should be used immediately after dilution with sterile 0.9% m/V sodium chloride solution

3 **Learning points going forward:** 

☒ Practice identifying what is included under each section of an SPC extract and practice being able to turn to the relevant section to reduce reading time.

63


Medium

 **Learning Point from Q62** 

C 15 minutes

1 **Table 3: Dilution plan of Ferinject for intravenous infusion**

Volume of Ferinject required			Equivalent iron dose			Maximum amount of sterile 0.9% m/V sodium chloride solution	Minimum administration time
2	to	4 mL	100	to	200 mg	50 mL	No minimal prescribed time
>4	to	10 mL	>200	to	500 mg	100 mL	6 minutes
>10	to	20 mL	>500	to	1,000 mg	250 mL	15 minutes

2 **Learning points going forward:** 

☒ Practice identifying what is included under each section of an SPC extract and practice being able to turn to the relevant section to reduce reading time.

64

High

Learning Point from Q63

D Mrs. K has a CHA2DS2-VASc score of 4 and should be commenced on Apixaban 5mg BD

1 Chadsvasc risk factors [click on present risk factors]

RISK FACTORS	SCORE
Congestive heart failure	1
Hypertension ✓	1
Age ≥ 75	2
Age 65-74 ✓	1
Diabetes mellitus ✓	1
Stroke/TIA/thrombo-embolism	2
Vascular disease	1
Sex Female ✓	1
Your score	0

2 According to the NICE guidelines, anticoagulation should be offered to all patients with a score of 2 or above. Warfarin is an option, however the patient is needle phobic and cannot have regular blood tests, which is a requirement for patients on warfarin. Therefore, option D is most appropriate.

3 Learning points going forward:

- ☒ Cha2DS2-VASc score
- ☒ HAS-Bled score
- ☒ Anticoagulation
- ☒ Apixaban

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65

High

Learning Point from Q64

C Advise the father that his son's condition is self-limiting, but he should seek medical attention if breathing becomes difficult

1 Symptoms of croup
Suspect croup in a child with a sudden-onset, seal-like barking cough, often accompanied by stridor and chest wall (intercostal) or sternal indrawing. Symptoms are typically worse at night and increase with agitation.

2 Croup is usually self-limiting, and symptoms usually resolve within 48 hours. If the child is being managed at home, the use of paracetamol or ibuprofen to control fever and pain should be advised, and parents should be advised to seek urgent medical advice if there is any deterioration.

3 Learning points going forward:

- ☒ Childhood conditions
- ☒ Responding to symptoms
- ☒ Signs of referral
- ☒ Self-care advice

<https://www.nhs.uk/conditions/croup/>

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66

Medium

Learning Point from Q65

E Public Interest Disclosure Act


1 Under the PIDA you should raise a concern about issues which have happened, or which you reasonably believe are likely to happen and involve a danger to the health or safety of an individual (for example, irresponsible or illegal prescribing, abuse of a person receiving care, or a professional whose health or fitness to practise may be impaired)

- A crime, or a civil offence (for example, fraud, theft or the illegal diversion of drugs)
- A miscarriage of justice
- Damage to the environment
- A cover-up of information about any of the above

<https://www.pharmacyregulation.org/raising-concerns>

2 Learning points going forward:

- ✓ Appendix 5: GPhC in practice: guidance on raising concerns
- ✓ The Law - page 170 MEP 43
- ✓ How to raise a concern



67

High

Learning Point from Q66


C For the prevention of isoniazid-induced peripheral neuropathy

1 Peripheral neuropathy

Pyridoxine hydrochloride should be given prophylactically in all patients from the start of treatment. Peripheral neuropathy is more likely to occur where there are pre-existing risk factors such as diabetes, alcohol dependence, chronic renal failure, pregnancy, malnutrition and HIV infection.

2 Learning points going forward:

- ✓ TB treatment
- ✓ Isoniazid



68

High

Learning Point from Q67

C Try to persuade Miss L to inform her parents that she is seeking contraceptive advice

1 If a girl younger than 16 years of age requests emergency contraception without parental consent, assess her competency to independently consent to treatment and document in her case notes that she meets) or does not meet the Fraser criteria.

Further reading:

- FSRH guidelines on emergency contraception: <https://www.fsrh.org/standards-and-guidance/documents/ceu-clinical-guidance-emergency-contraception-march-2017/>
- CKS Nice pathway: <https://cks.nice.org.uk/topics/contraception-emergency/management/management/>
- MEP 43 page 40

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69

High

Learning Point from Q68

A Edoxaban 30 mg once daily

1 Treatment of deep-vein thrombosis, Prophylaxis of recurrent deep-vein thrombosis, Treatment of pulmonary embolism, Prophylaxis of recurrent pulmonary embolism

By mouth

For Adult (body-weight up to 61 kg)
30mg once daily, duration of treatment adjusted according to risk factors—consult product literature, treatment should follow initial use of parenteral anticoagulant for at least 5 days.

For Adult (body-weight 61 kg and above)
60mg once daily, duration of treatment adjusted according to risk factors—consult product literature), treatment should follow initial use of parenteral anticoagulant for at least 5 days.

Need to know
Trainees are expected to know the doses for common NOACs

2 Learning points going forward:


- ☒ NOACs
- ☒ Anticoagulants

Propharmace Anticoagulation guide


ProPharmace

70

High



Learning Point from Q69



C

Doses of Concerta XL exceeding 54mg daily are unlicensed

3. How to take Concerta XL

How much to take
 Always take this medicine exactly as your doctor has told you. Check with your doctor or pharmacist if you are not sure.

- your doctor will usually start treatment with a low dose and increase it gradually as required.
- the maximum daily dose is 54 mg.
- you should take Concerta XL once each day in the morning with a glass of water.


The tablet should be swallowed whole and not chewed, broken, or crushed. The tablet may be taken with or without food.

The tablet does not dissolve completely after all of the drug has been released and sometimes the tablet shell may appear in your stools. This is normal.

71

High

Learning Point from Q70




D

0.4 g

1 Two fingertip units = 1g of cream
 Two FTU x twice daily x 10 days = 40 FTU

2 2 FTU = 1 g
 40 FTU = x = 20g
 Miconazole 2% = 2g in 100g
 Therefore Xg in 20g
 Xg = 0.4g

3 Learning points going forward: 


- ☒ Use pharmaceutical calculations to verify the safety of doses and administration rates
- ☒ Accurately perform calculations affecting patient care

72

High

Learning Point from Q71

E Mr H should wait at least six months before trying to conceive



1 It is not known if methotrexate is present in semen. Methotrexate has been shown to be genotoxic in animal studies, such that the risk of genotoxic effects on sperm cells cannot completely be excluded.

As precautionary measures, sexually active male patients or their female partners are recommended to use reliable contraception during treatment of the male patient and for at least 6 months after cessation of methotrexate. Men should not donate semen during therapy or for 6 months following discontinuation of methotrexate.

2 Learning points going forward:

- ☒ Common side-effects of cytotoxic drugs
- ☒ Methotrexate important safety information


Methotrexate and pregnancy

73

Medium

Learning Point from Q72

E Dantron (Co-danthramer) 5mg/1mL



1 Co-danthramer is associated with introducing a strong red hue in a patient's urine shortly after being administered. Further to this, the use of co-danthramer is normally reserved for palliative care settings due to its carcinogenic properties.

Drugs which discolour body secretions:

- Red: levodopa, clofazimine, dantron, rifaximin
- Reddish/brown: senna, rifampicin, entacapone
- Yellow/brown: nitrofurantoin, sulfasalazine, tolcapone
- Pink/orange: phenindione

2 Learning points going forward:


- ☒ Make a list of the drugs that commonly discolour urine or other bodily fluids

74

High

Learning Point from Q73

D Chest X-ray



1 Thyroid function tests should be performed before treatment and then every 6 months. Clinical assessment of thyroid function alone is unreliable. Thyroxine (T4) may be raised in the absence of hyperthyroidism; therefore tri-iodothyronine (T3), T4, and thyroid-stimulating hormone (thyrotrophin, TSH) should all be measured. A raised T3 and T4 with a very low or undetectable TSH concentration suggests the development of thyrotoxicosis.


Liver function tests required before treatment and then every 6 months.

Serum potassium concentration should be measured before treatment.

Chest x-ray required before treatment.

2 Learning points going forward:

- ☒ Amiodarone
- ☒ Drug monitoring - high risk drugs
- ☒ Thyroid function tests




ProPharmace high-risk drugs guide under day 2 under your VLE

75

Medium

Learning Point from Q74

B QVAR Easi-Breathe 100mcg/dose: two puffs twice a day, adjusted according to response



1 For Qvar[®] preparations

When used by inhalation

When switching a patient with well-controlled asthma from another corticosteroid inhaler, initially a 100-microgram metered dose of Qvar[®] should be prescribed for 200–250 micrograms of beclometasone dipropionate or budesonide and for 100 micrograms of fluticasone propionate.

When switching a patient with poorly controlled asthma from another corticosteroid inhaler, initially a 100-microgram metered dose of Qvar[®] should be prescribed for 100 micrograms of beclometasone dipropionate, budesonide, or fluticasone propionate; the dose of Qvar[®] should be adjusted according to response.

Trainees are expected to know the dose conversions and potency differences for ICS brands such as QVAR and Kelhale

Patient was on beclomethasone 200 mcg twice a day, therefore 100 mcg two puffs twice a day would be the equivalent dose conversion

76

Medium

Learning Point from Q75

C If you regularly drink as much as 14 units per week, it is best to spread your drinking evenly over three or more days

1 To keep health risks from alcohol to a low level it is safest not to drink more than 14 units a week on a regular basis
 If you regularly drink as much as 14 units per week, it's best to spread your drinking evenly over three or more days.
 If you have one or two heavy drinking episodes a week, you increase your risk of long-term illness and injury. The risk of developing a range of health problems (including cancers of the mouth, throat and breast) increases the more you drink on a regular basis

<https://www.drinkaware.co.uk/facts/alcoholic-drinks-and-units/low-risk-drinking-guidelines>

2 Learning points going forward:

- ☒ Health promotion
- ☒ Alcohol counselling and advice
- ☒ Calculating alcohol units

77

Medium

Learning Point from Q76

A A GPhC representative asking for medication records of a pharmacist who is currently under investigation by the court

1 Maintaining confidentiality is an important duty, but there are circumstances when it may be appropriate to disclose confidential information. These are when a pharmacy professional:


- Has the consent of the person under their care
- Has to disclose by law
- Should do so in the public interest, and/or
- Must do so in the vital interests of a person receiving treatment or care, for example if a patient needs immediate urgent medical attention


2 Learning points going forward:

- ☒ Confidentiality page 158-159 MEP 43

78

Medium

 **Learning Point from Q77**



A Administer 72 mg of alteplase through intravenous infusion

1 Mr PY has been confirmed to have sustained an ischaemic stroke within the last hour, so he is eligible for alteplase administration (within 4.5 hours)


Under 4.2 Posology and method of administration
Acute ischaemic stroke dosing table
The recommended total dose is 0.9 mg alteplase/kg body weight

Weight (kg)	Total Dose (mg)	Bolus Dose (mg)	Infusion Dose*
78	70.2	7.0	63.2
80	72.0	7.2	64.8
82	73.8	7.4	66.4

79

High


Learning Point from Q78




C Cyclizine

1 Consider drug treatment with an anti-emetic if initial treatments such as dietary advice or rest have failed and the woman has persistent symptoms.

- If an anti-emetic is required in pregnancy, prescribe an antihistamine (**oral cyclizine or oral promethazine**), or a phenothiazine (oral prochlorperazine), and reassess after 24 hours.
- If the response to the treatment is good:
 - Continue treatment with the chosen anti-emetic.
 - Review the woman once a week thereafter.
 - Oral metoclopramide or oral ondansetron are second-line options, but should not be prescribed for longer than 5 days.



 <https://cks.nice.org.uk/topics/nausea-vomiting-in-pregnancy/management/management/>

2 Learning points going forward: 

- ☒ Dietary advice for vomiting in pregnancy
- ☒ Referral points for N+V

80

Medium

 **Learning Point from Q79** 

E Miss D should not give her daughter the medication she has at home as it has exceeded its shelf life

6.3 Shelf life

36 months unopened.

1 month opened.



Diluted product shelf life: 28 days.

6.4 Special precautions for storage

Protect from light, store below 25 °C.

81

Medium

 **Learning Point from Q80** 

B Inform Miss A that her daughter's symptoms are a side effect of the medication which could occur in children when they initially take this medication, but should subside within a few days. She should seek medical attention if they do not

Nervous system disorders:

- Extrapyramidal effects such as:
 - Acute dystonias or dyskinesias, usually transitory, are commoner in children and young adults and usually occur within the first 4 days of treatment or after dosage increases.
 - Akathisia characteristically occurs after large doses.
 - Parkinsonism is commoner in adults and the elderly. It usually develops after weeks or months of treatment. One or more of the following may be seen: tremor, rigidity, akinesia or other features of Parkinsonism (commonly just tremor).

82

Medium

Learning Point from Q81

D Mr M is 32 years old and develops diarrhoea after taking clindamycin

1 The yellow card scheme should be used to report ALL suspected adverse drug reactions to newly licensed medicines. For established medicines, all suspected reactions that SERIOUS, MEDICALLY SIGNIFICANT, or RESULT IN HARM should be reported. Serious reactions include those that are fatal, life-threatening, disabling, incapacitating, or which result in or prolong hospitalisation.

A It is known that ACE inhibitors can cause dry cough as a side effect

B It is known that iron supplements can cause constipation

C Solifenacin is an antimuscarinic and so can cause dry mouth

D Antibiotic-associated diarrhoea can be life-threatening and may require hospitalisation

E Metoprolol may cause cold hands as a side effect

2 Learning points going forward:

- ☒ Adverse reactions to drugs
- ☒ Yellow card scheme

<https://bnf.nice.org.uk/guidance/adverse-reactions-to-drugs.html>

83

Medium

Learning Point from Q82

A Orange Guide: Rules and Guidance for Pharmaceutical Manufacturers and Distributors

1 **Orange Guide: Rules and Guidance for Pharmaceutical Manufacturers and Distributors**
Good manufacturing practice (GMP) is the minimum standard that a medicines manufacturer must meet in their production processes. Products must:

- be of consistent high quality
- be appropriate to their intended use
- meet the requirements of the marketing authorisation (MA) or product specification

<https://www.pharmpress.com/product/9780857112859/orangeguide>

2 Learning points going forward:

- ☒ Familiarise yourself with the different types of resources and their purpose

84

Medium

Learning Point from Q83

D Vincristine

1 Drugs may be divided according to their emetogenic potential and some examples are given below, but the symptoms vary according to the dose, to other drugs administered and to the individual's susceptibility to emetogenic stimuli.

Mildly emetogenic treatment fluorouracil, etoposide, methotrexate (less than 100 mg/m², low dose in children), the **vinca alkaloids**, and abdominal radiotherapy.

Moderately emetogenic treatment the taxanes, doxorubicin hydrochloride, intermediate and low doses of cyclophosphamide, mitoxantrone, and high doses of methotrexate (0.1– 1.2 g/m²). **Highly emetogenic treatment** cisplatin, dacarbazine, and high doses of cyclophosphamide.

2 Learning points going forward:

☒ Cytotoxic drugs and their adverse effects

<https://bnf.nice.org.uk/treatment-summary/cytotoxic-drugs.html>

85

High

Learning Point from Q84

E 500 mg

1 Anaphylaxis

2 Learning points going forward:

☒ Medical emergencies in the community

Adrenaline/epinephrine injection (1 mg/mL (1 in 1000))

- By intramuscular injection
 - CHILD 5 YEARS AND BELOW 150 micrograms (0.15 mL), repeated every 5 minutes if necessary
 - CHILD 6–11 YEARS 300 micrograms (0.3 mL), repeated every 5 minutes if necessary
 - CHILD 12–17 YEARS 500 micrograms (0.5 mL), repeated every 5 minutes if necessary; 300 micrograms (0.3 mL) should be given if child is small or prepubertal
 - ADULT 500 micrograms (0.5 mL), repeated every 5 minutes if necessary

High-flow oxygen and intravenous fluids should be given as soon as available.

86

High

Learning Point from Q85

B Domperidone

1 Domperidone acts at the chemoreceptor trigger zone. It has the advantage over metoclopramide hydrochloride and the phenothiazines of being less likely to cause central effects such as sedation and dystonic reactions because it does not readily cross the blood-brain barrier.

In Parkinson's disease, domperidone [unlicensed in those weighing less than 35 kg] can be used to treat nausea caused by dopaminergic drugs.

<https://bnf.nice.org.uk/treatment-summary/nausea-and-labyrinth-disorders.html>

2 Learning points going forward:

- ☒ Domperidone
- ☒ Nausea & vomiting
- ☒ Identify which anti-emetic is suitable when


87

High


Learning Point from Q86

A Dimeticone 4% lotion


Dimeticone 4% – Hedrin lotion/Once gel/spray




✓ Suitable for pregnant and BF women



✓ 6m+
Can be used in children over 6 months old




✓ Suitable for asthmatics




8Hr
8hr treatment time (Hedrin Once gel is 15 mins only)


Isopropyl myristate and cyclomethicone




! Not suitable for pregnant and BF women



! Not suitable for children




✓ 2yr+




10mins


Dimeticone 92% – NYDA




✗ Not suitable for pregnant and BF women



✗ Not suitable for children



✓ 2yr+



8Hr


NYDA may cause eye irritation or may interact with other hair products


There are several different products that can be applied to the scalp and hair to kill head lice, including:

- dimeticone 4% lotion or lotion spray – applied and left for 8 hours (usually overnight)
- dimeticone 4% spray gel – applied and left for 15 minutes
- mineral oil and dimeticone spray – applied and left for 15 minutes
- isopropyl myristate and cyclomethicone solution – applied and left for 5-10 minutes

88

High

 **Learning Point from Q87**



D 12 units once a day

1 Switch between insulin glargine 100 units/ml and Toujeo

Insulin glargine 100 units/ml and Toujeo are not bioequivalent and are not directly interchangeable.

- When switching from insulin glargine 100 units/ml to Toujeo, this can be done on a unit-to-unit basis, but a higher Toujeo dose (approximately 10-18%) may be needed to achieve target ranges for plasma glucose levels.
- When switching from Toujeo to insulin glargine 100 units/ml, the dose should be reduced (approximately by 20%) to reduce the risk of hypoglycaemia.


Patient is taking 15 units of Toujeo, therefore when switching to Lantus it needs to be reduced by 20%= 12 units


2 Learning points going forward:

- ☒ Be able to navigate through conversions between different types of insulins using a provided resource

89

High

 **Learning Point from Q88**



E Mrs N would benefit from taking colecalciferol 400 iu capsules once daily

1

Vitamin D		
Serum total 25-OH Vit D level	42 nmol/L	<25nmol/L deficient 25-50nmol/L insufficient >50nmol/L adequate >125nmol/L potential toxicity

Mrs N's vitamin D level indicates insufficiency. For people with vitamin D insufficiency (25[OH]D 25-50 nmol/L), maintenance doses should be started without the use of loading doses.

Giving dietary advice (including on calcium intake) and lifestyle advice (including on safe sun exposure).

<https://cks.nice.org.uk/topics/vitamin-d-deficiency-in-adults-treatment-prevention/>

2 Learning points going forward:

- ☒ Vit D deficiency
- ☒ Advice on increasing VitD levels

90

High

Learning Point from Q89

A Atorvastatin 20mg tablet

1 Cardiovascular disease risk assessment and prevention

Primary prevention:

- Aspirin is not recommended for primary prevention of CVD due to the limited benefit gained versus risk of side-effects such as bleeding.
- Antihypertensive drug treatment should be offered to patients who are at high risk of CVD
- A statin is recommended as the lipid-lowering drug of choice for primary prevention of CVD.

NICE (2016) recommend low-dose atorvastatin for patients who have a 10% or greater 10-year risk of developing CVD (using the QRISK2 calculator), and for patients with chronic kidney disease.

2 Learning points going forward:

- ☒ CVS risk assessment
- ☒ QRISK score
- ☒ Promoting healthy lifestyles

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91

High

Learning Point from Q90

D The cause is bacterial, but antibiotic therapy is not usually needed. A warm compress should be applied for 5-10 minutes three to four times a day to reduce swelling


1 If the sty is external:

- Swelling is located at the eyelid margin
- Swelling is usually localized around an eyelash follicle.
- It points anteriorly through the skin. A small, yellow, pus-filled spot may be visible.

Advise the person not to attempt to puncture the sty. Advise to avoid using eye makeup or contact lenses until the area has healed.

2 Learning points going forward:

- ☒ Responding to symptoms
- ☒ Eye infections & conditions



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92

High

Learning Point from Q91

G Gliclazide

1 Sulfonylureas: gliclazide, glimepiride, glipizide, tolbutamide

1. Are often added as first intensification in patients taking metformin.
2. A common side effect of the sulfonylureas is weight gain

Be familiar with being able to use and navigate the Nice type 2 diabetes treatment algorithm

<https://www.nice.org.uk/guidance/ng28/resources/algorithm-for-blood-glucose-lowering-therapy-in-adults-with-type-2-diabetes-pdf-2185604173>

Common anti-diabetic warnings:

- Sulfonylureas: weight gain & risk of hypoglycaemia
- Pioglitazone: increased risk of heart failure, bladder cancer, and bone fracture
- SGLT2 inhibitors: risk of diabetic ketoacidosis, increased risk of lower-limb amputation (mainly toes), reports of Fournier's gangrene, volume depletion in elderly

2 Learning points going forward:

- ☒ Sulfonylureas
- ☒ Type 2 diabetes
- ☒ Cautions and Contra-indications of antidiabetic medications

93

High

Learning Point from Q92

B Empagliflozin

1 Patient is obese (BMI 30.3 kg/m²) and so would benefit from weight loss.

Glucagon-like peptide -1 (GLP-1) mimetics for adults with type 2 diabetes who have a BMI lower than 35 **and:**

- For whom insulin therapy would have insignificant occupational implications or
- Weight loss would benefit other significant obesity-related comorbidities

However both dulaglutide and liraglutide are both available as injectables and so unsuitable for this patient due to his fear of needles.

SGLT2 inhibitors also have a proven benefit in reducing weight - hence empagliflozin is the best option for this patient

<https://www.nice.org.uk/guidance/ng28/resources/algorithm-for-blood-glucose-lowering-therapy-in-adults-with-type-2-diabetes-pdf-2185604173>

2 Learning points going forward:

- ☒ GLP-1 mimetics
- ☒ Type 2 diabetes
- ☒ Cautions and Contra-indications of antidiabetic medications

94

High

Learning Point from Q93

H Insulin glargine

1 Injectable therapy includes GLP-1 mimetics and insulin. The patient is already on triple therapy and the next step would be to add insulin. Furthermore, the use of GLP-1 mimetic is not warranted as the patient's BMI is not high enough.

Considerations when starting insulin therapy

1. First-line: offer isophane insulin once or twice daily according to need
2. Consider both Isophane and short-acting insulin (biphasic) particularly if HbA1c is 75 mmol/mol
3. Consider using insulin detemir or glargine if the person needs assistance to inject insulin

Insulin therapy in type 2 diabetes:

<https://cks.nice.org.uk/topics/insulin-therapy-in-type-2-diabetes/management/insulin-therapy-type-2-diabetes/>

2 Learning points going forward:

- ☒ Insulin types
- ☒ Type 1 diabetes
- ☒ Which insulin type is suitable for which patient

95

High

Learning Point from Q94

F Flucloxacillin

1 The patient is experiencing symptoms of cellulitis after an insect bite:

When to get medical advice

Contact your GP or call [NHS 111](#) for advice if:

- you're worried about a bite or sting
- your symptoms do not start to improve within a few days or are getting worse
- you've been stung or bitten in your mouth or throat, or near your eyes
- a large area (around 10cm or more patch of skin) around the bite becomes red and swollen
- you have symptoms of a wound infection, such as pus or increasing pain, swelling or redness
- you have symptoms of a more widespread infection, such as a high temperature, [swollen glands](#) and other [flu-like symptoms](#)

Treatment of cellulitis:

First choice antibacterials

- **Oral or Intravenous first line:**
 - Flucloxacillin.
 - Alternative in penicillin allergy or flucloxacillin unsuitable: [clarithromycin](#), oral [erythromycin](#) (in pregnancy), or oral [doxycycline](#).
- **Oral or Intravenous first line if infection near the eyes or nose:**
 - Co-amoxiclav.
 - Alternative in penicillin allergy or co-amoxiclav unsuitable: [clarithromycin with metronidazole](#).

2 Learning points going forward:

- ☒ Infections: skin infections
- ☒ Referral signs for common ailments

96

High

Learning Point from Q95

C Cefalexin

1 Patient is experiencing symptoms of pyelonephritis:

Common signs and symptoms of pyelonephritis include:

- Flank/renal angle pain and/or tenderness.
- Myalgia.
- Flu-like symptoms.
- Rigors or raised temperature of 37.9°C or higher (or below 36°C in people aged over 65 years).
 - Most people have fever, although it may be absent early in people with early or mild cases, frail, older people, or in the immunocompromised.
- Nausea/vomiting.

Treatment of Pyelonephritis in pregnant women:

Pregnant women

Choice of antibacterial therapy

- **Oral first line:**
 - Cefalexin.
- **Intravenous first line** (if severely unwell or unable to take oral treatment):
 - Cefuroxime.
- **Second line** or combining antibacterials if concerned about susceptibility or sepsis:
 - Consult local microbiologist.

2 Learning points going forward:

- ☒ Infections: urinary tract infections
- ☒ Signs and symptoms of common infections

97

High

Learning Point from Q96

D Clarithromycin

1 FeverPAIN score can be used to determine the likelihood of streptococcal infection:

- **Fever** over 38 degrees
- **Purulence** (pharyngeal/tonsillar exudate)
- **Attend** rapidly (3 days or less)
- Severely **Inflamed** tonsils
- **No** cough or coryza

A score of 0 or 1 is associated with a 13% to 18% likelihood of isolating streptococcus. A score of 2 or 3 is associated with a 34% to 40% likelihood of isolating streptococcus. A score of 4 or 5 is associated with a 62% to 65% likelihood of isolating streptococcus.

<https://cks.nice.org.uk/topics/sore-throat-acute/diagnosis/diagnosing-the-cause/>

While phenoxymethylpenicillin is the first choice antibiotic, the patient has a penicillin allergy and therefore clarithromycin will be the alternative.

- **Phenoxymethylpenicillin**
 - Suggested duration of treatment 5 to 10 days.
- **If penicillin-allergic, clarithromycin (or erythromycin)**
 - Suggested duration of treatment 5 days.

2 Learning points going forward:

- ☒ Infections: Oropharyngeal infections
- ☒ Signs and symptoms of common infections

98

High

Learning Point from Q97

A Bisoprolol

1 Stable angina is characterised by predictable chest pain or pressure, often **precipitated by physical exertion or emotional stress** causing an increase in myocardial oxygen demand. Although pain typically occurs in the front of the chest, **it may also radiate to the neck, shoulders, jaw or arms; the pain is relieved with rest.**

Treatment:

1. Sublingual glyceryl trinitrate used as a preventative measure before performing activities.
2. **For long-term prevention: a beta-blocker (atenolol, bisoprolol, metoprolol or propranolol) - First line**
3. A rate-limiting CCB should be considered as an alternative if BBs are contra-indicated in patients with Prinzmetal's angina or decompensated heart failure.

2 Learning points going forward:

- ✓ Assessment of chest pain
- ✓ Difference in stable vs unstable angina vs myocardial infarction and their long-term treatment
- ✓ Beta-blockers
- ✓ Calcium-channel blockers

99

High

Learning Point from Q98

D Losartan

1 Choice of antihypertensive drug¹, monitoring treatment and BP targets

```

graph TD
    A[Hypertension with type 2 diabetes] --> B[Step 1: ACEi or ARB2,3]
    C[Hypertension without type 2 diabetes] --> D[Age <55 and not of black African or African-Caribbean family origin]
    C --> E[Age 55 or over]
    C --> F[Black African or African-Caribbean family origin (any age)]
    D --> B
    E --> G[Step 1: CCB]
    F --> G
    B --> H[Step 2: ACEi or ARB2,3 + CCB or thiazide-like diuretic]
    G --> I[Step 2: CCB + ACEi or ARB2,3 or thiazide-like diuretic]
    H --> J[Step 3: ACEi or ARB2,3 + CCB + thiazide-like diuretic]
    I --> J
    
```

When choosing antihypertensive drug treatment for adults of black African or African-Caribbean family origin, consider an angiotensin II receptor blocker (ARB), in preference to an angiotensin-converting enzyme (ACE) inhibitor

2 Learning points going forward:

- ✓ Hypertension treatment guideline
- ✓ Ace-inhibitors
- ✓ calcium channel blockers
- ✓ Angiotensin receptor blockers
- ✓ Thiazide-like diuretics

100


High

Learning Point from Q99

G Amiodarone


1 If necessary, amiodarone hydrochloride can be started 4 weeks before and continuing for up to 12 months after electrical cardioversion to increase success of the procedure, and to maintain sinus rhythm

Sinus rhythm can be restored by electrical cardioversion, or pharmacological cardioversion with an oral or intravenous antiarrhythmic drug e.g., flecainide acetate or amiodarone hydrochloride. If atrial fibrillation has been present for more than 48 hours, electrical cardioversion is preferred

 ProPharmace high-risk drugs guide under day 2 under your VLE

2 Learning points going forward:

- ☒ Amiodarone
- ☒ Drug monitoring - high risk drugs
- ☒ Atrial fibrillation treatment



101


High

Learning Point from Q100

B Increased risk of respiratory depression

1 MHRA/CHM advice: Benzodiazepines and opioids: reminder of risk of potentially fatal respiratory depression (March 2020)


Benzodiazepines and benzodiazepine-like drugs co-prescribed with opioids can produce additive CNS depressant effects, thereby increasing the risk of sedation, respiratory depression, coma, and death. Furthermore, the volume of distribution of diazepam is increased in older patients, which would lead to higher plasma concentrations.

 <https://bnf.nice.org.uk/drug/diazepam.html>

Patients should be informed of the signs and symptoms of respiratory depression and sedation and advised to seek urgent medical attention should these occur.

2 Learning points going forward:

- ☒ MHRA warnings/advice
- ☒ Benzodiazepines
- ☒ Opioids
- ☒ Prescribing in elderly



102

High

Learning Point from Q101

E Increased risk of cardiovascular event

ACE inhibitors and ARBs have important side effects in patients with CKD, including the potential to induce hyperkalaemia. The risk of hyperkalaemia from ACEI is low if the eGFR is >40 mL/min per 1.73 m² and the initial serum potassium is in the low-normal range, and even lower if a diuretic such as furosemide is also given. So, A is incorrect.

The antiproteinuric effect of ACEI is most prominent in patients who are on a low-sodium diet or who are treated with diuretics since relative volume depletion results in greater angiotensin II dependence of the glomerular microcirculation.

In patients with CKD, a high sodium intake (above approximately 6 g/day [14 g of sodium chloride]) is associated with a higher risk of having a cardiovascular event, including heart failure, myocardial infarction, and stroke.

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103

High

Learning Point from Q102

D Increased risk of respiratory failure

1 This is a drug-condition. Gentamicin is contraindicated in patients with Myasthenia Gravis

Aminoglycosides may impair neuromuscular transmission

A number of other medications commonly administered in the operating room can affect neuromuscular transmission, in patients with MG, they can exacerbate muscle weakness, especially in the presence of residual anaesthetic agents. When any of these medications is given in the operating room or the recovery room, the potential for respiratory or bulbar weakness should be considered.

2 Learning points going forward:

- ☒ Antibiotics
- ☒ Contra-indications
- ☒ Myasthenia gravis

Propharmace high risk drugs guide

ProPharmace

104

Medium


Learning Point from Q103

D Mumps

1 Symptoms of mumps



Mumps is most recognisable by the painful swellings in the side of the face under the ears (the parotid glands)

Other symptoms of mumps include headaches, joint pain, and a high temperature, which may develop a few days before the swelling of the parotid glands.

 ProPharmace responding to symptoms guide

2 Learning points going forward:

- ☒ Childhood conditions
- ☒ Responding to symptoms
- ☒ Mumps referral and counselling

105

Medium

Learning Point from Q104

C Whooping cough


1 Whooping cough symptoms

Whooping cough (also called pertussis) is a bacterial infection of the lungs and breathing tubes

The first signs of whooping cough are like a cold.


After about a week, you or your child:

- will get coughing bouts that last for a few minutes and are worse at night
- will make a "whoop" sound – a gasp for breath between coughs (young babies and some adults may not "whoop")
- may bring up a thick mucus, which can make you sick (vomit)
- may become very red in the face (more common in adults)

 ProPharmace responding to symptoms guide

2 Learning points going forward:

- ☒ Childhood conditions
- ☒ Responding to symptoms
- ☒ whooping cough referral and counselling



106

Medium

Learning Point from Q105

F Hand, foot and mouth disease


1 The first signs of hand, foot and mouth disease can be:

- a sore throat
- a high temperature
- not wanting to eat

After a few days mouth ulcers and a rash will appear.


Ulcers appear in the mouth and on the tongue. These can be painful and make it difficult to eat or drink.

Raised spots usually appear on the hands and feet, and sometimes on the thighs and bottom as well.

 [Propharmace responding to symptoms guide](#)

2 Learning points going forward:

- ☒ Childhood conditions
- ☒ Responding to symptoms
- ☒ Referral and counselling



107

Medium


Learning Point from Q106

H Plaque psoriasis

1 Plaque psoriasis is the most common form of psoriasis.


Its symptoms are dry red skin lesions, known as plaques, covered in silver scales. They normally appear on your elbows, knees, scalp and lower back, but can appear anywhere on your body. The plaques can be itchy or sore, or both. In severe cases, the skin around your joints may crack and bleed.

First-line therapy which includes traditional topical therapies - eg, corticosteroids, vitamin D analogues, dithranol and tar preparations.

 <https://patient.info/doctor/chronic-plaque-psoriasis>


2 Learning points going forward:


- ☒ Recognizing skin conditions
- ☒ Responding to symptoms
- ☒ Referral and counselling



108


Medium

 **Learning Point from Q107**




F Acne vulgaris

1 Inflammatory lesions such as:
Papules and pustules – superficial raised lesions (less than 5 mm in diameter).
Nodules or cysts (larger than 5mm in diameter) – deeper, palpable lesions which are often painful and may be fluctuant



Treatment options:

- Benzoyl peroxide
- Topical retinoids
- Topical antibiotics
- Azelaic acid
- Oral antibiotics
- Combined oral contraceptives


 <https://cks.nice.org.uk/topics/acne-vulgaris/diagnosis/clinical-features/>


2 Learning points going forward:

- ☒ Recognizing skin conditions
- ☒ Responding to symptoms
- ☒ Referral and counselling

109


Medium

 **Learning Point from Q108**




B Tinea manuum

1 Tinea manuum is the name given to infection of one or both hands with a dermatophyte infection
Tinea manuum causes a slowly extending area of peeling, dryness and mild itching on the palm of one hand



Other types of fungal infections:

- Scalp - tinea capitis.
- Feet - tinea pedis.
- Hands - tinea manuum.
- Nail - tinea unguium (or onychomycosis).
- Beard area - tinea barbae.
- Groin - tinea cruris.
- Body including trunk and arms - tinea corporis

 <https://patient.info/doctor/dermatophytosis-tinea-infections>

2 Learning points going forward:

- ☒ Recognizing skin conditions
- ☒ Responding to symptoms
- ☒ Referral and counselling

110

High

Learning Point from Q109

E Reduce dose

1 Hyperkalaemia and other side-effects of ACE inhibitors are more common in those with impaired renal function and the dose may need to be reduced.

Dose adjustments

Max. daily dose 5 mg if eGFR 30–60 mL/minute/1.73 m²; max. initial dose 1.25 mg once daily (do not exceed 5 mg daily) if eGFR less than 30 mL/minute/1.73 m².

Mr AK's eGFR is 28 mL/min and therefore his dose needs to be reduced to less than 5 mg

2 Learning points going forward:

- ☒ Adjustments in renal impairment
- ☒ ACE inhibitors and renal effect

<https://bnf.nice.org.uk/guidance/prescribing-in-renal-impairment.html>

111

High

Learning Point from Q110

F Discontinue

1 In adults

Manufacturer advises avoid if eGFR is less than 30 mL/minute/1.73 m².

In children

Manufacturer advises avoid if estimated glomerular filtration rate is less than 30 mL/minute/1.73 m².

Mrs AF's eGFR is 25 mL/min and so metformin should be discontinued as it is renally excreted.

2 Learning points going forward:

- ☒ Adjustments in renal impairment
- ☒ Metformin and renal effect
- ☒ Make a list of drugs that are commonly avoided in renal impairment

<https://bnf.nice.org.uk/guidance/prescribing-in-renal-impairment.html>

112

High

Learning Point from Q111

F Discontinue

1 For all THIAZIDES AND RELATED DIURETICS

Thiazides and related diuretics are ineffective if eGFR is less than 30 mL/minute/1.73m² and should be avoided.

Metolazone remains effective if eGFR is less than 30 mL/minute/1.73m² but is associated with a risk of excessive diuresis.

<https://bnf.nice.org.uk/guidance/prescribing-in-renal-impairment.html>

2 Learning points going forward:

- ☒ Adjustments in renal impairment
- ☒ Thiazides and renal effect
- ☒ Make a list of drugs that are commonly avoided in renal impairment

113

High

Learning Point from Q112

D ECG

1 Amiodarone Monitoring

- Annual eye test
- Chest X-ray before treatment
- Liver function every 6 months
- TSH, T3, T4 before treatment and every 6 months
- Blood pressure and ECG
- Serum potassium

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Amiodarone side-effects

- Corneal micro-deposits
- Optic neuropathy/neuritis (blindness)
- Pneumonitis, pulmonary fibrosis
- Phototoxicity (burning, erythema)
- Peripheral neuropathy
- Hepatotoxicity
- Hyper or hypo thyroidism

2 Learning points going forward:

- ☒ Monitoring requirements of high-risk drugs
- ☒ Amiodarone contra-indications

114

High

Learning Point from Q113

B Endocrine function tests

1 Regular clinical monitoring of endocrine function should be considered when children are taking an antipsychotic drug known to increase prolactin levels; this includes measuring weight and height, assessing sexual maturation, and monitoring menstrual function.

2 Learning points going forward:

- ☒ Monitoring requirements of high-risk drugs
- ☒ Antipsychotics cautions and safety information

115

High

Learning Point from Q114

F Serum calcium concentration

1 Monitoring of patient parameters

Correct disturbances of calcium and mineral metabolism (e.g. vitamin-D deficiency, hypocalcaemia) before starting treatment. Monitor serum-calcium concentration during treatment.

2 Learning points going forward:

- ☒ Monitoring requirements for high-risk drugs
- ☒ Bisphosphonates safety information and carer advice

116

Medium


Learning Point from Q115

E PHQ-9

1 Patient Health Questionnaire (PHQ-9)


The PHQ-9 is the depression module, which scores each of the nine DSM-IV criteria as "0" (not at all) to "3" (nearly every day). It has been validated for use in primary care.

It is not a screening tool for depression, but it is used to monitor the severity of depression and response to treatment.

 <https://patient.info/doctor/patient-health-questionnaire-phq-9>

2 Learning points going forward:

- ☒ Define the different types of scores used in diagnosis and what they are used for



117

Medium

Learning Point from Q116


D Centor score

1 The Centor Score includes a set of criteria which can be used to identify the likelihood of a bacterial infection in adult patient complaining of a sore throat.

Centor criteria


- Tonsillar exudate
- Tender anterior cervical lymphadenopathy or lymphadenitis
- History of fever (over 38°C)
- Absence of cough

Each of the Centor criteria score 1 point (maximum score of 4). A score of 0, 1 or 2 is thought to be associated with a 3 to 17% likelihood of isolating streptococcus. A score of 3 or 4 is thought to be associated with a 32 to 56% likelihood of isolating streptococcus.

 <https://www.nice.org.uk/guidance/ng84>

2 Learning points going forward:

- ☒ Define the different types of scores used in diagnosis and what they are used for



118

Medium

Learning Point from Q117

F CRB-65

1 Mr D is experiencing possible symptoms of pneumonia. As he has presented in the community, the CRB-65 score will be used to assess his symptoms.

CRB65 severity score:
1 point for each feature present:

- Confusion
- Respiratory rate $\geq 30/\text{min}$
- Blood pressure (SBP < 90 or DBP $\leq 60\text{mmHg}$)
- Age ≥ 65 years

↓

Treat according to clinical judgement and CRB65 severity score

0

Low severity

1-2

Moderate severity

3-4

High severity

2 Learning points going forward:

- ☒ Define the different types of scores used in diagnosis and what they are used for
- ☒ Familiarize yourself with using the CRB65/CURB65 score and what they stand for;

119

Medium

Learning Point from Q118

C Hyperkalaemia

1 Common symptoms of hyperkalaemia:

- Feeling very tired or weak
- Stomach pain or nausea
- Dizziness
- Muscle pain or cramps
- Trouble breathing
- Weakness in the arms and/or legs
- Unusual heartbeat or chest pains

The patient is being prescribed an ACE inhibitor and aldosterone antagonist (The latter of which was initiated recently). It is likely that both of these agents may have played an additive role in facilitating the accumulation of potassium in the patient's bloodstream.

2 Learning points going forward:

- ☒ Causes of hyperkalaemia
- ☒ Fluid and electrolytes
- ☒ Causes of electrolyte imbalances

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Medium

Learning Point from Q119

F Hyponatraemia


1 Common symptoms of hyponatraemia:


- Weakness
- fatigue or low energy
- Headache
- Nausea
- Vomiting
- Muscle cramps or spasms
- Confusion
- Irritability

Mr PA has developed symptoms that are characteristic of hyponatraemia and has recently been started on citalopram. SSRIs are known to increase the risk of hyponatraemia secondary to syndrome of inappropriate secretion of antidiuretic hormone (SIADH).

2 Learning points going forward:

- ☒ Causes of hyponatraemia
- ☒ Fluid and electrolytes
- ☒ Causes of electrolyte imbalances

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Medium

Learning Point from Q120

G Hyperuricaemia

1 Mr. GU medication list:


Medication	Dose	Additional notes
Atorvastatin 40mg	1 daily	Increased 2 years ago
Paracetamol 500mg	2 tabs up to four times a day	
Allopurinol 300mg	1 daily	
Ramipril 10mg	1 at night	
Amlodipine 10mg	1 daily	
Bendroflumethiazide 2.5mg	1 in the morning	Started a month ago following blood pressure review


PMH of Mr GU shows that he was previously diagnosed with gout prior to admission. Details of Presenting complaint allude to possible exacerbation of gout (pain and swelling in his big toe = inflammation of metatarsophalangeal joint).

Thiazide diuretics are known to causing hyperuricaemia and therefore possess the risk of precipitating an exacerbation of gout.

2 Learning points going forward:

- ☒ Causes of hyperuricaemia
- ☒ Fluid and electrolytes
- ☒ Causes of electrolyte imbalances

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