**Atrial fibrillation**

1. For someone with atrial fibrillation, the first line treatment should be rate control unless they have a new onset of atrial fibrillation, or they have heart failure that is thought to have been caused by atrial fibrillation. The rate control treatment includes either a standard beta blocker or a rate limiting calcium channel blocker (diltiazem or verapamil) as initial rate control monotherapy. However, give digoxin as monotherapy if the person does no or very little physical exercise.

For choice of beta blocker according to nice:

* If the patient has AF without comorbidities atenolol 50mg once daily and titrate according to response.
* If the patient has AF and a previous myocardial infarction (without heart failure) then give them propranolol
* For people with AF and heart failure give them bisoprolol 1.25mg and titrate upwards according to response
* For people with AF and diabetes give them cardio selective beta blockers like atenolol

(avoid beta blockers in people who have frequent hypoglycaemia)

1. If the monotherapy does not control the person symptoms and you have increased the dose and optimised the first line treatment, and their ventricular rate is still not within the normal ventricular rate which is between 60-100 times per minute, then consider combination therapy with any 2 of the following, beta blocker, diltiazem and digoxin.

Rate limiting CCB (diltiazem and verapamil) is contraindicated in people with heart failure or history of heart failure, or severe bradycardia. Dihydropyridine CCBs (amlodipine or felodipine) is contraindicated in people with uncontrolled heart failure or severe hypotension.

Do not offer amiodarone for long-term rate control!!

In people with atrial fibrillation less than 48 hours since onset or if duration is unclear and the rhythm has not been restored within the 48 hour period or have risk factors like heart disease, prolonged atrial fibrillation (more than 12 months) or previous recurrence then they should be given oral anticoagulation for a min time of 3 weeks as there is an increased risk that blood clots might have formed in the heart particularly in the left atrium. These clots can dislodge during cardioversion leading to stroke. A chadvasc and orbit assessment should be done as well. Anticoagulation should only be stopped after chadvasc and orbit reassessment and discussion with the patient.

1. If rate control strategy does not work or symptoms continue, then consider pharmacological (drug therapy) and electrical rhythm control.

Class 1c antiarrhythmic drugs like flecainide or propafenone should not be offered to people with ischaemic or structural heart disease!!

1. If drug treatment for long term rhythm control is needed, then consider a standard beta blocker (other than sotalol) as first line treatment, unless contraindicated. If contraindicated, then assess suitability for alternative drugs.
2. If the rhythm control is not controlled then patient should undergo cardioversion ( a treatment that uses quick, low energy shocks to restore a regular heart rhythm). After a successful cardioversion, the patient should be on the second line treatment option which is dronedarone. Dronedarone should be given if the first line therapy has been optimised and alternative drugs have also been considered. The patient should also have at least 1 of the following cardiovascular risk factors, hypertension requiring drugs of at least 2 different classes, diabetes, previous transient ischaemic attack, stroke or systemic embolism, left atrial diameter of 50mm or greater, 70 years old+ and do not have left ventricular systolic dysfunction and do not have a history heart failure or have heart failure currently.

Give people anticoagulated drugs before cardioversion as there is a risk of stroke due to the fact that blood clots can form in the atria due to the irregular rhythm and these clots can potentially dislodge during cardioversion causing a stroke.

1. Consider amiodarone for people with left ventricular impairment or heart failure
2. People who are having cardioversion for atrial fibrillation have to have had atrial fibrillation that has persisted for longer than 48 hours, then offer electrical cardioversion. Provide them with amiodarone therapy starting 4 weeks before the cardioversion and continuing for up to 12 months after electrical cardioversion to maintain sinus rhythm and discuss the benefits and risk of amiodarone with the person.
3. For people with atrial fibrillation of more then 48 hours that are given elective cardioversion which means cardioversion that is not given as an emergency procedure then both TOE-guided cardioversion and conventional cardioversion should be considered equally effective. TOE-guided cardioversion should be considered if a minimal period of precardioversion anticoagulation is indicated due to the person choice or bleeding risks.
4. If drug treatment is unsuccessful in people with persistent atrial fibrillation, then they should be considered for radiofrequency point by point ablation, which is a medical procedure that uses radiofrequency energy to create small, controlled burns (lesions) in the heart tissue to disrupt the abnormal electrical pathways that cause the arrhythmia.
5. If radiofrequency point by point ablation is not suitable then consider cryoballoon ablation or laser balloon ablation. Important to discuss the risks and benefits to the patient for left atrial ablation and explain to the patient that the procedure is not always effective, and that the resolution of symptoms may not be long-lasting.
6. Consider antiarrhythmic drug treatment for 3 months after left atrial ablation to prevent recurrence of atrial fibrillation. Reassess the need for antiarrhythmic drug treatment at 3 months after left atrial ablation. Evidence shows that amiodarone is the only antiarrhythmic drug that can reduce the recurrence of atrial fibrillation after ablation. There is lack of evidence for the other antiarrhythmic drugs.

For people who are being considered for rhythm control strategy that includes cardioversion or have heart failure then a transthoracic echocardiography (TTE) should be performed. If TTE shows abnormal results then a transoesophageal echocardiography (TOE) should be performed. x

Aspirin should not be given for stroke prevention in people with atrial fibrillation.

People are 65 years or older or have diabetes, heart failure, coronary heart disease, transient ischaemic attack or systemic thromboembolism and are not taking anticoagulant should have a stroke review.

For people who are taking an anticoagulant, a review for the need and quality of the anticoagulation should be done at least annually if not more frequently.

For people who have recently incurred atrial fibrillation and it is causing them life threatening hemodynamic instability such as severe low blood pressure, chest pain or heart failure, then emergency electrical cardioversion should be performed immediately. In this situation, the urgency of stabilizing the patient condition takes precedence over the usual precaution of providing an anticoagulation (giving blood thinners) before performing the procedure.

If the person has recently incurred atrial fibrillation without life threatening haemodynamic instability, then they should be offered rate or rhythm control if the onset is less than 48 hours. Offer rate control is the onset is more than 48 hours or uncertain.

People who have atrial fibrillation for 48 hours or more and are considered for long term rhythm control, should have cardioversion delayed until they have maintained a therapeutic anticoagulation for a minimum of 3 weeks. During this period offer rate control.

Use appropriate antithrombotic treatment (anticoagulation) for the prophylaxis and management of postoperative atrial fibrillation. Also correct any potential causes such as electrolyte imbalance or hypoxia. Aspirin can sometimes be used for antithrombotic treatment for anticoagulants are preferred.

Do not offer digoxin or statins post operative.

Consider rhythm control or rate control for initial treatment of new onset atrial fibrillation that has incurred after cardiothoracic surgery.

**Also for long term management of AF**

People with AF should be offered a personalised package of care. The package covers stroke awareness and measures to prevent stroke, rate control, assessment of symptoms of rhythm control, who to contact for advice, psychological support, educational information like causes, effects and possible complications of AF, management of rate and rhythm control, anticoagulation, support networks such as cardiovascular charities.

If treatment fails to control symptoms of atrial fibrillation, then refer for specialist management should occur within 4 weeks.

**For stroke prevention in AF**

DOAC should be offered acutelty once a chad vasc and orbit assessment has been done and shows a score of 2 or above. If it is a man then a score of 1 or above should then have a doac administered. If DOAC is contraindicated or not tolerated, then a vitamin K antagonist should be given.

Don’t give anticoagulant if they are under 65 and have no risk factors a

**Avoid drugs like NSAIDS, antidepressants!!**

**Stroke**

1. For someone with stroke there must be a brain imaging done as an early assessment with a non-enhanced CT scan for people that apply to one of the following, indications for thrombolysis, on anticoagulant, stiff neck, fever. The scan must be performed within 24 hours. The CT scan is highly sensitive to the presence of blood and is essential for detecting haemorrhagic stroke. Ruling out haemorrhage early is important as it is critical in guiding management such as surgical intervention or avoiding anticoagulant as a result.
2. Thrombolysis with alteplase is given for people with stroke and should be started as soon as possible within 4.5 hours of the onset of the symptoms of stroke and once intracranial haemorrhage has been excluded.
3. Aspirin 300mg should be given within 24 hours, to everyone with stroke who has had an intracerebral haemorrhage excluded by brain imaging. If they do not have dysphagia, then give aspirin orally or if they do have dysphagia then give aspirin rectally or by enteral tube. The aspirin should be continued for 2 weeks after the onset of stroke symptoms and then afterwards definitive long term antithrombotic treatment should be administered.

Only offer PPI in addition with aspirin if the patient has had dyspepsia associated with aspirin.

Anticoagulation treatment routinely should not be used in the treatment of acute stroke

If someone is already on statins then they should continue the statin treatment

1. Supplemental oxygen should be given to people who have stroke and there oxygen saturation drops below 95%
2. A blood glucose concentration of between 4 and 11 mmol/litre should be maintained. If not, then provide optimal insulin therapy which includes intravenous insulin and glucose to people with type 1 diabetes and stroke.
3. Blood pressure target for people with stroke is lower than 140/90, for people over 80 the BP target is 150/90

People with stroke should have their swallowing screened by an appropriately trained healthcare professional before being given any oral food, fluid or medication.

If someone cannot swallow while having medication then they should have their oral medications reviewed to amend the formulation or the route of administration. If they haven’t had thrombolysis then they should receive tube feeding with nasogastric tube within 24 hours of admission.

All patients in hospital with stroke should be screened for malnutrition and the risk of malnutrition. This screening should be repeated weekly. They screening assesses BMI and percentage of unintentional weight loss. It is important to be aware that dysphagia will affect the nutrition in people with stroke. Anyone at risk of nutrition should have nutrition support and seek specialist dietary advice..

All patients on admission should have their hydration assessed regularly and managed so normal hydration is maintained.

The patients individual clinical needs and personal preferences should be assessed to determine their optimal head position. There should be an active management programme to help people with stroke to sit out of bed, stand or walk as soon as their clinical condition permits them.

Anyone with small deep haemorrhages, large haemorrhage and significant comorbidities before the stroke, posterior fossa haemorrhage very rarely require surgery and should start by receiving medical treatment initially.

Decompressive hemicraniectomy should be performed within 48 hours of symptom onset for people with stroke who has a decreased level of consciousness with a score of 1 or more on item 1a of the NIHSS, signs of CT an infarct of at least 50% of the middle cerebral artery territory with an infarct volume greater than 145cm3 or with or without additional infarction in the territory of the anterior or posterior cerebral artery on the same side.

**CKD**

Offer a renal ultrasound scan to all adults with CLD have a EGFR of below 30ml/min/1.73m2 or accelerated progression of CKD, or symptoms of urinary tract obstruction

If adults have an EGFR of between 30-44 then they should have a kidney function test between 1-2 times per year. If they have an EGFR of between 15-29 then should have a kidney function test between 2-3 times per year. If they have a EGFR of under 15 (kidney failure) then they should have a kidney function test of 4 or more per year.

Its important to works with the adults and optimise the risk factors of CKD progression which is hypertension, smoking, chronic use of NSAIDS, CVD, diabetes, African origin, previous episode of AKI. With people using NSAIDS over a pro longed period of time, it is important to monitor the effects on the EGFR.

Offer people with CKD and their family members, the education and information that is tailored to the severity and cause of the CKD, the associated complications and risk of progression. Ensure to take account the psychological aspect of dealing with CKD and offer adults with CKD the access to support, for example support groups, counselling, or a specialist nurse.

Offer people with CKD lifestyle advice that includes exercise, healthy weight, stop smoking. Also, dietary advice about potassium, phosphate, calorie and salt intake. Provide education alongside the dietary intervention. Don’t offer low protein diets to adults with CKD.

Important to provide adults with CKD and their family info about their 5 year risk of needing renal replacement therapy

Refer adults with CKD to specialist assessment if they have a (ACR) albumin-creatinine ratio of 70 mg/mmol or more unless it is known to be due to diabetes and is being treated for appropriately, if they have a ACR of more than 30 mg/mmol together with haematuria (blood in urine), if they have sustained decrease in eGFR of 15ml/min/1.73m2 or more per year, hypertension that is poorly controlled with the use of at least 4 antihypertensive drugs. After shared care, there should be a routine follow up at the GP surgery.

Adults with CKD and a ACR under 70 mg/mmol should aim for a blood pressure target of below 140/90. Adults with CKD and a ACR of more than 70mg/mmol should aim for a blood pressure target of below 130/80. An ACEI or ARB should be given to all adults who have CKD and a ACR of over 30mg/mmol.

Adults with CKD and type 1 or 2 diabetes should be given an ACEI or ARB to be titrated to the highest if they have an ACR of 3mg/mmol or more. Offer SGLT2 inhibitor in addition to the ACEI or ARB if they have a ACR of over 30mg/mmol and consider initiation of SGLT2 inhibitor if ACR of between 3 and 30 mg/mmol. Do not give SGLT2I if EGFR of below 15. Provide an additional antidiabetic medication if EGFR between 15-45.

Adults with CKD and without diabetes should be referred for a nephrology assessment and offered an ARB or ACEI if ACR is 70 or more.

Don’t offer a combination of ACEI and ARBs in adults with CKD

Don’t offer ARBs if potassium levels is greater than 5

Offer antiplatelet medications (e.g., aspirin, clopidogrel) to adults with CKD for the secondary prevention of cardiovascular disease but be aware of the increased risk of bleeding.

Investigate and manage anaemia if haemoglobin (Hb) levels falls to 110g/litre. If they have anaemia and EGFR above 60 then investigate causes of anaemia as it is unlikely to be caused by CKD. If EGFR is between 30-60 then investigate other causes of anaemia.

Adults with anaemia should be given an erythropoietin stimulating agent (ESA) like Eprex 50units/kg 3 times a week (maintenance 75-300 units/kg weekly). but should not be given if they are iron deficient. Optimise the iron status before offering an ESA. If ACEI or ARB are used then an increase in ESA therapy should be given. If ferritin levels reduced, then this needs to be replaced first for the erythropoietin injection to be effective. Give IV iron therapy of ferinject which is given when ferritin levels below 200 mcg/L. Target level for ferritin is 200-500 mcg/L

Do not offer androgens.

Hb desired range is between 100-120. Hb should be monitored every 2-4 weeks in induction phase of ESA therapy and every 1-3 months in maintenance phase of ESA therapy and more frequently if ESA dose is adjusted.

Offer a high dose IV iron regimen to people with stage 5 CKD. In first month should be 600mg divided equally over 3 haemodialysis sessions. In the second month onwards if ferritin 700 mcg/litre or less then should be 200mg during each of the first 2 dialysis sessions. In the second month onwards if ferritin over 700 mcg or CRP over 50 then withhold the iron dose.

Don’t check iron levels earlier than 1 week after giving IV iron. Carry routine monitoring of iron at intervals 1 to 3 months.

In adults with CKD stage 4 or 5 and phosphate levels higher then 4.5 then offer phosphate binder like calcium acetate 1-2 tablets there times a day with meals to control serum phosphate levels. Titrate dose according to response. If they are still hyperphosphataemic after optimising the dose then consider combining calcium base phosphate binder with a non-calcium based phosphate binder. Always important to assess adherence, diet, vitamin d levels, serum parathyroid hormone levels. Also, the reduced calcium levels is due to low activated vitamin D levels so prescribed activated vitamin D like alfacalcidol 1mcg OD.

If phosphate still remains high after treatment, then check adherence as it is known for low adherence due to tablet burden and GI side effects. If they can’t tolerate and have good adherence, then give alternative like sevelamer 800mg 3-6 tablets TDS. Important to mention diet for managing phosphate levels and should refer to renal dieticians for dietary advice and lowering the intake of high phosphate.

Thiazide diuretic like Bendroflumethiazide should be used with caution in renal impairment according to SPC.

According to the SPC, aspirin is contraindicated in severe renal impairment.

Beta blockers like bisoprolol, with a creatine clearance in less than 20ml/minute (severe renal impairment) then the dose should not exceed 10mg once daily.

**AKI**

Consider AKI in people with increase serum creatinine levels and people that are in CKD stage 3,4 or 5.

Make sure there are systems in place to recognise and respond to oliguria (urine output less than 0.5ml/kg/hour)

Do not offer loop diuretics to treat AKI

Offer loop diuretics for treating fluid overload (oedema) while someone is awaiting renal replacement therapy or someone renal function is recovering.

Refer someone to renal replacement therapy if they are not responding to the medical management for hyperkalaemia, fluid overload, pulmonary oedema, uraemia (raised urea levels). Base the decision to start someone on renal replacement therapy on their whole condition not just on urea, creatinine or potassium levels.

Monitor serum creatinine levels in AKI.

Refer to nephrologist in people with EGFR less than 30 and have recovered from AKI

Acei should be held in AKI and in hypotensive states and the renal function and blood pressure should be monitored and then restarted once AKI and BP is resolved as it does provide long term reno protective benefits for type 2 diabetes.

Metformin is contraindicated in a creatinine clearance less than 30ml/min but should be restarted once creatinine clearance is more than 30ml/min. Once they recover then SGLT2I is good to give as well.

Gliclazide does not need to be held in AKI as it is mostly cleared by the liver.

Ibuprofen OTC should be avoided in AKI as can cause AKI by pre-renal route (reduced perfusion) or intrinsic AKI if severe acute reduced perfusion (acute interstitial nephrititis) as it should be avoided in renal impairment. In pain management, paracetamol PRN should be given as a replacement pain management instead.

Chronic alcohol related liver disease and liver cirrhosis:

For signs and description for chronic alcohol related liver disease then go to the document called chronic alcohol related liver disease on funky science.

To treat the psychomotor symptoms from alcohol, they should be given benzodiazepine to aid this. It will control psychomotor agitation and prevent progression to more severe adverse effects. Chlordiazepoxide is the best benzodiazepine for this not diazepam as diazepam is long acting with a half life of between 20-100hr and it has an increase risk of masking encephalopathy. It is also prone to abuse. However, chlordiazepoxide (20mg QDS starting dose and then decreased over 9-10 days) is recommended on a reducing regmine as it is also long acting and is more effective than short acting agents as preventing seizures and delirium. It has a more gradual onset of psychotropic effects, less potential for misuse and less toxic in overdose. In elderly and those with liver failure, there is an accumulation risk so short acting agents like oxazepam (half life 3-21hours) should be used. There needs to be close monitoring to avoid withdrawal symptoms. You want to use the lowest possible dose without causing sedation as this increases likelihood of encephalopathy.

Do not send them home with supply as there is an issue of dependence and risk of respiratory depression especially when used with alcohol.

Pabrinex IV High Potency (vitamin B and C given over 30 mins) is appropriate for use in alcoholic liver disease as alcoholism is associated with vitamin B1 deficiency and can lead to Wernicke’s encephalopathy and korsakoff’s psychosis (Wernicke-korsakoff syndrome). The dose should be 2 pairs TDS for 3-5 days , alongside oral thiamine 100mg TDS continued for 3-6 days after abstinence is achieved or long term if drinking continues.

Refer to DAL team to help with dependence on alcohol

To reduce the risk of bleeding from the collateral circulation we should aim to reduce the portal blood pressure using low dose propranolol 40mg BD to be adjusted according to heart rate but important to monitor effect in a liver patient.

Drugs to be cautious about- NSAIDS, warfarin, DOACS, clopidogrel, heparin, corticosteroids SSRI’s,

NSAIDS are particularly problematic as they cause GI irritation and bleeding, sodium and water retention

opioids, tricyclic antidepressants, sedating antihistamines, benzodiazepines and other hypnotics(sleeping pills) , antipsychotics to all be used with caution.

Modified release opioid analgesic not good as due to it taking a long time to wear off it can mark the adverse effects for longer

**Pain**

If patient has CKD3 and has a EGFR that is below 60 then the patient should on fentanyl per the NNUH guidance where it is 20mcg/ml concentration which is equal to 20mcg (1ml) dosing with 5 minute lockout. If it shows that the patient has neuropathic pain, then ketamine can also be used in the PCA alongside the opioid.

If you see morphine given by 2 different routes such as PCA which is when the patient self-administers the medication through a device or oral then you have to suggest that one of the routes should be stopped so duplication is avoided. If PCA route is chose then fentanyl should be used as it is less renally excreted compared to the other opioids. If oral is chosen then oxycodone liquid form is the best.

There should be other drugs prescribed alongside the opioids for its antiemetic side effects such as cyclizine 50mg TDS PRN for the nausea and vomiting side effect.

If there is signs or symptoms of itching, then prescribe chlorphenamine 4mg QDS PRN

Naloxone 400cg IV bolus. If not response after 1 minute, then 800mcg as IV bolus. If a response is seen then repeat last IV bolus every 1-2 minutes until good response is seen. Naloxone used to reverse an opioid overdose

Laxatives should be used if opioids are being used regularly. It can be either stimulant and osmotic e.g. laxido and senna but not the bulk forming.

There should also be a non-opioid analgesia being prescribed such as paracetamol 1g QDS PRN

Once the PCA is removed then the patient has to undergo step down analgesia. The treatment for step down analgesia includes Paracetamol PO 1g QDS. Depending on the PCA usage prescribe a strong opioid like oxycodone liquid 1.25-2.5mg 2 hourly PRN or a weak opioid like codeine PO 15-30mg QDS.

Ibuprofen should not be used when someone has CKD.

When the patient is being discharged, it is important to aim for them to step down to a weak opioid with paracetamol dependent on the pain level. It is possible to be discharged with both and then can step down to codeine once able. Follow ups are essential

Oramorph is used for breakthrough pain and the dose should be 10mg 2-4 hourly PRN

Using 2 regular opioids is not rational.

If they are using the strong opioid more regularly then it shows that it is not controlling their paid well enough and if you see a weaker opioid also being prescribed then stop the weak opioid.

To answer dosage morphine calculation: First calculate total amount of morphine they calculate in a day using the drugs on the drug history in the case study. Then go on the newly prescribed and check all the opioids convert them to morphine using the bnf table.

When calculating the breakthrough dose for opioid like diamorphine, it is 1/10-1/6 of the total daily dose of morphine that is calculated using the morphine drugs in the drug history. You divide the total daily dose by 10 first and get the first value then you divide it by 6 and get the next value so you have the range of what the breakthrough dose should be. 10mg morphine is equal to 3.3mg diamorphine. Use this to convert the Morphine breakthrough dose into diamorphine to see if the diamorphine prescribed is within range. If not, then reduce both of them respectably. To do this you times 3.3 by the first morphine value in the breakthrough dose and then divide it by 10. Then you do the same for the second value so times 3.3 by the second morphine value and divide by 10. Once you get this then you reduce it to a respectable level.

**Depression**

* Signs of depression:

emotional ones include (sadness, anxiety, irritability, lack of enjoyment, suicidal ideation, hopelessness, inappropriate guilt.

* Cognitive ones include (difficulties with- attention and concentration, short- and long-term memory, direction making, planning and organisation, mental sharpness, word finding, thinking speed and judgement)
* Physical ones include (fatigue, eating/weight changes, joint, abnormal and other pains, insomnia, hypersomnia, sexual dysfunction, headaches, psychomotor agitation.

Assessment tools for Depression:

* Patient Health Questionnaire-9 (PHQ-9)- It assesses low mood, loss of interest in activities also known as anhedonia, changes in sleep and difficulties with concentration. It also includes questions on thoughts of self-harm which is important to monitor.
* Beck Depression Inventory-II (BDI-II)- It is a popular tool that is used to assess the severity of the depressive symptoms and tracks the changes over time. It covers the emotional, cognitive, and physical symptoms such as decreases libido, low energy and social withdrawal.
* Generalized Anxiety Disorder-7 (GAD-7) is a primary tool to assess anxiety that includes features such as increased arguments and difficulty discussion mood. There might be underlying anxiety that should be evaluated and monitored.
* Hospital Anxiety and Depression Scale (HADS)- The questionnaire is used during a consultation where the repsonses provide an indication of the severity of the anxiety and depression symptoms. It is particularly relevant to symptoms such as low mood, withdrawal activities and reduced libido (sexual desire).

**Schizophrenia**

Signs and symptoms-

Relapse and recurrence of psychosis, positive symptoms of schizophrenia includes delusions, thought insertion (when someone puts thoughts in their head and they become suspicious), disorganised behaviour(erratic), hallucinations, negative symptoms includes unkept, social isolation (living alone), depressive symptoms (low mood and poor sleep), speaking less, unable to express or feel pleasure (anhedonia).

It is important to do a urine drug screen to determine whether a person symptoms or medical condition is caused by drugs so if it is drug induced. Also, important to do a different types of assessments like physical health assessment, FBC, ECG, LFTs, TFTs, weight, blood glucose etc. to rule out organic causes like infection and also to rule out electrolyte disturbances such as hyponatremia, hypokalaemia, hypercalcemia, or hypomagnesemia.

Common to experience extrapyramidal side effects known as dystonia. This is when you have involuntary muscle movements, and it is known as muscle spasm of the head and neck. When the head is forced sideways it is known as torticollis.

Acute dystonic reaction must be treated immediately so consider prescribing procylidine (anticholinergic) either orally or IM (2.5mg TDS PRN). If swallowing difficulties, then prescribe IM. There is a concern for using these long term. Only use this for short term and it should be stopped when the symptoms improve and/or if antipsychotic treatment is changed. Risperidone can be considered as an alternative as it has less anticholinergic side effects and it is also available in a depot formulation.

Review the prescription for first second antipsychotics like flupentixol if the patient is still suffering from psychotic symptoms.

Extra pyramidal side effects come from the depot injection and haloperidol. Discontinuing haloperidol can resolve it so important to stop haloperidol. If an antipsychotic PRN is needed then consider low dose quetiapine (25mg) as short term as it lowers risk of the extra pyramidal side effects. Switching to a second generation antipsychotic depot injection like risperidone (fortnightly). If switching to a second generation antipsychotic, then monitor response to treatment, monitor extra pyramidal side effects during switching as first generation antipsychotic remain in system for longer when a new antipsychotic is introduced. Before switching it is important to check ECG, FBC, prolactin and LFTs as baseline. Then repeat at 3 months if nothing alarming shows.

If the person is also on antidepressants like venlafaxine, sertraline etc, then check their ECG results if it is stabilsied then probably no need to switch antidepressants as might destabilse their depression state. Instead probably best to minimise their antipsychotics such as haloperidol.

Check the last page of the workshop for schizophrenia to find the non-pharmacological treatments.

Alcohol and drug misuse:

Audit C should be talked with the patient and what it means should be explained.

The **AUDIT-C** (Alcohol Use Disorders Identification Test-Consumption) is a shortened version of the AUDIT questionnaire, which was originally developed by the World Health Organization (WHO) as a screening tool for detecting harmful drinking patterns and alcohol use disorders. The AUDIT-C is a three-question alcohol screen that helps identify individuals who are hazardous drinkers or have active alcohol use disorders (including alcohol abuse or dependence).

**Purpose of AUDIT-C:**

The primary purpose of the AUDIT-C is to:

* **Screen** for risky or hazardous drinking patterns.
* **Identify** patients who might be at risk of developing alcohol-related problems.
* **Support** early intervention and guidance to reduce alcohol consumption if necessary.

**Components of the AUDIT-C:**

The AUDIT-C consists of three questions, each scored on a scale of 0 to 4, leading to a total score ranging from 0 to 12. The questions focus on alcohol consumption patterns:

1. **Frequency of alcohol consumption**: "How often do you have a drink containing alcohol?"
	* Scoring: 0 (Never) to 4 (4 or more times a week)
2. **Quantity of alcohol consumption**: "How many drinks containing alcohol do you have on a typical day when you are drinking?"
	* Scoring: 0 (1 or 2 drinks) to 4 (10 or more drinks)
3. **Frequency of heavy drinking**: "How often do you have six or more drinks on one occasion?"
	* Scoring: 0 (Never) to 4 (Daily or almost daily)

**Interpreting AUDIT-C Scores:**

The scores of the AUDIT-C can be interpreted as follows:

* **Total Score**: The overall score is the sum of the three individual scores, ranging from 0 to 12. Higher scores indicate a higher likelihood of hazardous drinking or alcohol use disorder.
* **Gender-Specific Thresholds**:
	+ **Men**:
		- A score of **4 or more** is considered positive, which suggests a need for further evaluation and possible intervention.
		- Scores of **8 or more** are strongly associated with alcohol dependence.
	+ **Women**:
		- A score of **3 or more** is considered positive for hazardous drinking.
		- Scores of **8 or more** similarly suggest a strong possibility of alcohol dependence.
* **Score Breakdown**:
	+ **0-3 (Men)** or **0-2 (Women)**:
		- Low risk of alcohol-related problems. However, a score of 0 might indicate total abstinence, and some clinicians might want to explore reasons for non-drinking if relevant (e.g., previous alcohol problems, health issues).
	+ **4-7 (Men)** or **3-7 (Women)**:
		- Increased risk of alcohol-related harm. Patients in this range might benefit from brief counseling or further assessment.
		- The clinician should discuss drinking patterns and offer advice on reducing alcohol intake if necessary.
	+ **8-12** (Both Men and Women):
		- High risk of alcohol dependence and significant alcohol-related problems. This score warrants further assessment, possibly including the full AUDIT, and consideration of referral to specialized treatment services.

**Clinical Action Based on AUDIT-C Scores:**

* **Low Scores (0-3 for men, 0-2 for women)**:
	+ No immediate action may be required, but the patient should be reassessed periodically, especially if their circumstances change.
* **Moderate Scores (4-7 for men, 3-7 for women)**:
	+ Engage the patient in a conversation about their drinking habits.
	+ Provide advice on the health risks associated with alcohol consumption.
	+ Consider brief interventions, motivational interviewing, or offering self-help materials to reduce drinking.
* **High Scores (8-12 for both genders)**:
	+ A comprehensive assessment for alcohol use disorders should be undertaken.
	+ Discuss the possibility of alcohol dependence and the need for specialized treatment.
	+ Referral to addiction services or a specialist may be appropriate, depending on the severity of the findings.

Bottom of Form

Format to copy and paste:

Write a very very scientifically detailed first class pharmacy answer to this question using the case study below?

Patient:

DOB:

Sex:

Allergies:

Weight:

Alcohol:

Smoking status:

SH:

MHx:

DHx:

PC:

HPC:

OE:

BP:

Temperature: