Case Based Scenario - Fall

This case was discussed at the FP Pharmaceutical Care Plans workshop on 2nd December 2015.

Mrs MT is an 81 year old woman who has been admitted to hospital following a fall. She says that she felt dizzy all of a sudden and just fell over. She has broken her left wrist and has extensive bruising to her face and left arm. Mrs MT was diagnosed with atrial fibrillation 6 months ago. She weighs 58kg and is 1.6m tall. Her husband died 6 weeks ago.

PMHx
Atrial fibrillation (since 2015)

SHx/ FMHx
Retired and lives alone
Smoke 5 cigarettes a day
Occasional alcohol

MHx
NKDA
Bisoprolol 2.5mg once a day
Apixaban 5mg twice a day
Temazepam 10mg at night

Admission blood results and observations

Na 141mmol/l	(135-145mmol/l)
K 4.2mmol/l	(3.5-5.5mmol/l)
eGFR 58ml/min	(>60ml/min/1.73m^2)
BP 145/62mm Hg	
HR 60 beats/ minute	

She is prescribed co-codamol 30/500mg two capsules every four to six hours when required for pain relief.

Task

- **Identify THREE main interventions you would make to optimise the patient's medicines.**
- **Prioritise the listed interventions i.e. annotate them, 1 (most important) to 3 (least important)**
- **During the interview you will discuss your interventions and the rationale for your choice.**

The purpose of the case-based scenario is to enable Foundation pharmacists to demonstrate that they can make evidence-based recommendations to optimise a patient's medicines, and defend the decisions they have made. It is acknowledged that pharmacists may choose different interventions, or a different order of priority. The interview provides a flexible assessment method where pharmacists can discuss the rationale for the choices they have made.

Answer

Workshop participants identified the 6 main interventions below. These were discussed and consensus was reached about the order of priority.

1. **Bisoprolol –** Mrs MT has atrial fibrillation and is being treated with bisoprolol for rate control. The bisoprolol may have caused a postural drop in her blood pressure which could have caused her fall. Her lying, sitting and standing BP needs to be checked to determine if this is the case. If appropriate the dose of bisoprolol should be reduced to 1.25mg. Her heart rate should be monitored to measure if the rate is controlled or not.
   Atrial fibrillation is an arrhythmia; if it is not controlled it can cause a temporary loss of cardiac output resulting in a drop of blood pressure. Mrs MT's description of a suddenly going dizzy suggests that her fall may have been caused by this. Her sudden dizziness is consistent with an arrhythmia. A 24 hour tape should be done to determine if this is the case. If her atrial fibrillation is not controlled a rate limiting calcium antagonist could be used. If rate control is not achieved despite adequate monotherapy then consider combining digoxin with a beta blocker.

2. **Temazepam –** sedatives can contribute to a fall. Find out how long Mrs MT has been taking temazepam. Check that she is not taking more than her prescribed dose. Her husband has recently died and it may have been prescribed following this. Benzodiazepines should only be prescribed short term. If it was prescribed following her husband's death advise Mrs MT to stop it. If she has been on it long term it should be gradually withdrawn and alternative non pharmacological measures used to aid sleep.

3. **Apixaban** - the dose of apixaban for the prophylaxis of stroke and systemic embolism in non-valvular atrial fibrillation is 5mg BD. In the elderly (over 80 years) with bodyweight $\leq$ 60kg the dose is 2.5mg BD. Mrs MT's dose should be reduced to 2.5mg BD. If Mrs MT had suffered a head injury and a CT brain scan is required the apixaban should be held until the result of the brain scan is known. Enoxaparin should not be prescribed.

4. **Osteoporosis** - the National Osteoporosis Guideline group recommends that postmenopausal women who have had a previous fragility fracture (defined as a fracture caused by a fall from standing height or less) should start treatment without risk assessment. Mrs MT is over 75 and has suffered a low impact fracture; DEXA scanning is unnecessary and treatment for osteoporosis should be initiated.
   NICE recommends offering a bisphosphonate (alendronate or risedronate) to postmenopausal women who have had a previous fragility fracture.
   NICE recommends alendronate as the first-line agent for secondary prevention of osteoporotic fragility fractures in postmenopausal women. Alendronate is usually taken as a once weekly dose of 70mg. Risedronate is recommended as an alternative in women in whom alendronate is contra-indicated. Risedronate is usually taken as a once weekly dose of 35mg.
   Bisphosphonates should be swallowed whole with plenty of water while sitting or standing, to be taken on an empty stomach at least 30 minutes before breakfast (or another oral medicine). The patient should stand or sit upright for at least 30 minutes after taking the tablet. All patients should have a dental check-up (and any necessary remedial work should be performed) before

bisphosphonate treatment or as soon as possible after starting treatment due to the risk of osteonecrosis of the jaw.
Strontium is an alternative for postmenopausal women unable to take bisphosphonates. It can cause severe allergic reactions and increases the risk of venous thromboembolism.
Teriparatide is a recombinant human parathyroid hormone that stimulates bone formation. It should only be initiated on the advice of a specialist. NICE recommends that it should be considered for the secondary prevention of osteoporotic fragility fractures in woman over 65 who are intolerant of bisphosphonates or who have had an unsatisfactory response to bisphosphonates and who have severe osteoporosis. It is only licensed for up to 18 months treatment.
Calcium supplements – used alone calcium supplements may reduce the rate of bone loss in postmenopausal women with osteoporosis and reduce the risk of vertebral fracture. Calcium supplements should usually be used in combination with other bone-protective agents. Calcium and vitamin D should be used as an adjunct to treatment for those with established osteoporosis, unless the clinician is confident that the patient has an adequate dietary calcium intake and is vitamin D replete or is already taking a vitamin D analogue.

Assess for vitamin D deficiency and inadequate calcium intake.

a. People are at risk of vitamin D deficiency if they are aged over 65 years or are not exposed to much sunlight (because they are confined indoors for long periods or because they wear clothes that cover the whole body).
b. A calcium intake of at least 1000 mg/day is recommended for people at increased risk of a fragility fracture.

5. **Pain relief** – MT is prescribed co-codamol 30/500mg capsules. Compound analgesic preparations are not generally recommended as there is reduced scope for titrating the individual components to manage pain of varying intensity effectively.
Co-codamol 30/500 is preferable to co-codamol 8/500 because the higher codeine preparation does at least provide a therapeutic dose of the opioid, however, older people are more susceptible to opioid side effects which could contribute to a fall. Paracetamol 1g QID would be a better option. Using co-codamol 30/500 may result in the patient receiving either too high a dose of codeine, leading to opioid side effects e.g. constipation, dizziness or too low a dose of paracetamol to provide effective analgesia.
NSAIDs would not be recommended . Mrs MT is elderly and is prescribed apixaban - there is a risk of increased bleeding if an NSAID is co-prescribed. There have been numerous studies that suggest that NSAIDS interfere with bone healing. There have also been numerous studies contradicting this. NSAIDS should be considered as a risk factor for bone healing impairment.

6. **Smoking cessation** - smoking is a risk factor for a stroke. It is also associated with low bone mass and evidence suggests that patients who smoke have at least double the risk of hip fracture particularly in postmenopausal women. Smoking may increase the risk for hip fracture through reduced weight, impaired health status and reduced neuromuscular function. It may take 10 years after smoking cessation before the excess risks disappear. Mrs MT should be advised to stop smoking. She should be referred for smoking cessation. A medium strength patch should be used for 6-8 weeks and then a low strength patch for 2-4 weeks.