**Feedback to MCQs – Patient Content**

**1. Introduction to patient self-monitoring of oral anticoagulation**

a) Patient self-monitoring of oral anticoagulation can be described as the follows: (Please select the response that you think best answers this question)

i) It is when I visit the anticoagulant clinic and I suggest the dose of warfarin I think I should take

**ii) It is when I measure my INR from a small drop of blood at a location convenient to me, using a device called a coagulometer**

iii) It is when I check myself carefully for signs of bruising or bleeding from warfarin

b) If I am self-testing my oral anticoagulation I can alter the dose of warfarin myself?

True / **False**

**When you are self-testing your anticoagulation practitioner is responsible for advising you on the dose of warfarin to take.**

c) If I am self-managing my oral anticoagulation I can alter the dose of warfarin myself?

**True** / False

**If you are self-managing you are responsible to adjusting your dose of warfarin according to the INR that you measure. This is differs from self-testing where your anticoagulation practitioner is responsible for advising you on the dose of warfarin to take.**

d) Below is a list of possible benefits that might come from self-monitoring of oral anticoagulation. Please select ALL of those that are true.

**Less risk of having a blood clot**

**Less risk of having a minor bleed**

Less tiredness

**Provide reassurance that the INR is in therapeutic range**

**May be more convenient**

**Reduction in daily ‘hassles’**

**Greater confidence in tackling health-related problems**

**Published evidence suggests us that those who self-monitor their INR are less likely to have a blood clot, and also less likely to suffer from a minor bleed. Also, they are less likely to experience ‘daily hassles’ and have greater confidence in tackling healthcare-related problems.**

**People who are self-monitoring find it to be convenient and also feel reassured that their INR is in range.**

**2. Near-patient testing**

a) Near-patient testing (NPT) is different from the traditional INR test in the following ways:

1. NPT uses a fingerprick blood sample but the traditional INR test uses a sample of blood from the vein

**True** / False

1. NPT is quicker than a traditional INR test

**True** / False

1. NPT is more accurate than the traditional INR test

True **/ False**

**Near-patient testing (NPT) measures your INR using a small, portable meter. It is as accurate as, and quicker than, a traditional INR test.**

b) Which of the following factors may result in a false INR reading (please select all that apply)?

1. **If you are anaemic**
2. Hot weather
3. **Squeezing your finger to get a blood sample**
4. Cold weather
5. High blood pressure

**You should never squeeze your finger when trying to get a blood sample as this can result in a false INR reading. Medical conditions may interfere with the fingerprick INR test include cancer, iron deficiency anaemia and anti-phospholipid syndrome or antibodies.**

c) Which of the following might be able to help you if you had a technical problem with your coagulometer? (please tick all that may apply)

**i) Your anticoagulation healthcare professional**

**ii) The manufacturer of your coagulometer**

**iii) Your coagulometer user manual**

**If you have a technical problem with your coagulometer, the following sources of information are available:**

1. **The user manual you received with your machine. This may tell you the reason for the error message.**
2. **The helpline for the coagulometer manufacturer (contact details available from your product literature or from the manufacturer’s website above)**
3. **The healthcare professional who oversees your anticoagulation**

d) You can dispose of your blood lancets, test strips and cotton wool with your household waste?

True / **False**

**You should never dispose of blood lancets, strips and cotton wool in your household waste. Instead, you should put these used items in a sharps bin.**

**3. How oral anticoagulants (warfarin) affect blood clotting**

a) What are the main components of blood? : (Please tick the response that you think best answers this question)

i) Red cells, white cells, grey matter, plasma

**ii) Red cells, white cells, platelets, plasma**

iii) Red cells, white cells, platelets, histamine

**Blood is made up of plasma, in which three types of cells float - red cells, white cells and platelets.**

b) Platelets help my blood to clot

**True** / False

c) There now follows a set of statements about how blood clots. Please can you indicate if these statements are true or false

i) When blood clots it changed from a liquid to a solid state.

**True** / False

ii) When you bleed, platelets in blood become 'sticky' and clump together to ‘plug’ the site of the injury.

**True** / False

iii) The release of proteins called clotting factors result in the formation of fibrin, which strengthens the blood clot

**True** / False

d) Warfarin prevents my blood from clotting by doing the following : (Please tick the response that you think best answers this question)

i) It prevents platelets from sticking together

**ii) It prevents clotting factors from forming**

iii) It repairs the damaged blood vessel

**Vitamin K plays an essential role in making the clotting factors described above. Warfarin blocks vitamin K, preventing these clotting factors from forming. This then decreases your body’s ability to form blood clots, stopping harmful clots from forming and preventing clots from getting bigger.**

**4. How other medicines, food and alcohol can affect the INR**

a) Which of the factors listed below are likely to alter the effect of warfarin? (please select any that apply)

1. **Aspirin**
2. **Alcohol**
3. Paracetamol
4. **Changes in diet**
5. **Getting a dose of ‘flu**

**Pain-killing doses (300 – 600mg) of aspirin increase the risk of bleeding and can damage the stomach. If a pain-killer is needed, paracetamol is a safer option. Alcohol can greatly enhance the effect of warfarin, increasing your INR, and it can put you at risk of bleeding. Increasing the amount of vitamin K rich foods in your diet may significantly reduce the effect of warfarin (lowering the INR). If you are running a temperature and have an infection - for example, when you have ‘flu - the effect of warfarin may be enhanced.**

b) Please indicate which of the following medicines is likely to interact with warfarin. (you may select more than one option)

1. **Ibuprofen**
2. **Antibiotics**
3. Cough medicine
4. Vitamin C tablets

**Ibuprofen increases the risk of bleeding and can damage the stomach. Therefore, it should be avoided if you take warfarin. Any antibiotic has the potential to interact with warfarin. Although the effect of antibiotics is difficult to predict, they usually enhance the effect of warfarin.**

c) Which of the following products that you might buy at the chemist or supermarket is most likely to interact with warfarin?

1. Nicotine replacement therapies
2. **Herbal or dietary supplements**
3. Allergy medicines
4. Calcium supplements

**Some dietary and herbal supplements contain vitamin K which is Vitamin K is the natural antidote for warfarin. Therefore, you should avoid any natural remedies that contain vitamin K. If you cannot decide if a remedy contains vitamin K, please check with your pharmacist or with the anticoagulant clinic.**

d) Eating large amounts of food that containing vitamin K whilst taking warfarin can –

1. increase your risk of bleeding from warfarin
2. **reduce the effectiveness of warfarin**
3. cause stomach upset & vomiting
4. reduce your risk of having a blood clot

**Warfarin acts by preventing vitamin K from forming the clotting factors that are essential for coagulation. Vitamin K is not stored in the body but is supplied from your food. Therefore, if you increase the amount of vitamin K rich foods in your diet, you may significantly reduce the effect of warfarin (lowering the INR).**

e) Whilst on warfarin you –

1. should not eat spinach
2. can eat spinach one time a month
3. can eat as much spinach as you like whenever you would like
4. **can eat spinach but should eat the same amount regularly each month**

**A common misconception is that if you are on warfarin you should avoid all food that contains vitamin K. This is not the case! However, you should keep the amount of vitamin K-containing foods in your diet consistent.**

f) While out to dinner with friends you have just finished your third large glass of wine. This amount of alcohol consumed in a single evening will –

1. cause a decrease in your INR
2. **cause an increase in your INR**
3. will not affect your INR
4. will give you side effects from your warfarin

**In excess, alcohol can greatly enhance the effect of warfarin, increasing your INR, and it can put you at risk of bleeding. It is recommended that you do not drink more than three units of alcohol a day if you are a man, or two units a day if you are a woman. You should drink the same amount of alcohol each day, thus avoiding big variations in the amount you drink from day to day. It is not safe to save up units to have on one day (binge drinking).**

**5. How warfarin is monitored and managed**

a) What does your INR measure?

1. The thinness of my blood
2. **How long it takes my blood to clot**
3. How much iron is in my blood
4. The level of warfarin in my blood

**Warfarin is often called a ‘blood thinner’, which is not strictly correct. It does not thin the blood, but lengthens the time it takes for blood to clot. The INR test measures how long the blood takes to clot**

b) If your target INR is 2.5 and your INR result is 1.2 you would expect

1. **Your dose of warfarin to be increased**
2. Your dose of warfarin to remain the same
3. Your dose of warfarin to be decreased

**Your dose of warfarin is adjusted to keep your INR in your target range. If your INR is too low, this means that your blood is taking too short a time to clot, and your warfarin dose may be increased.**

c) If your target INR is 3.5 and your INR result is 5.0 you would expect

1. Your dose of warfarin to be increased
2. Your dose of warfarin to remain the same
3. **Your dose of warfarin to be decreased**

**Your dose of warfarin is adjusted to keep your INR in your target range. If your INR is too high, this means that your blood is taking too long to clot, and your warfarin dose may be decreased.**

d) If your target INR is 2.5 and your INR result is 2.0 you would expect

1. Your dose of warfarin to be increased
2. **Your dose of warfarin to remain the same**
3. Your dose of warfarin to be decreased

**Your dose of warfarin is adjusted to keep your INR in your target range. If your INR is within the correct range, your warfarin dose will not need to changed.**

e) You must always take warfarin at 6pm each day

True / **False**

**Although many people take it at 6pm, it does not matter at which time of day you take warfarin. However, it works best if you take it at the same time each day. You should select a time that is easy for you to remember and stick to that.**

f) If you forget to take a dose of warfarin on one day, you should take a double dose on the following day to make up for it.

True / **False**

**You should never double up on your dose to make up for the missed dose! If you realise that you have forgotten to take your dose of warfarin more than four hours after it was due, you should skip the dose for that day and just carry on with the prescribed dose the following day at your normal time. Please do let your anticoagulation practitioner know at your next INR test.**

**6. The adverse effects of warfarin**

a) Which of the following are adverse affects associated with warfarin? (Select all that apply)

1. **Nose bleed**
2. **Skin rash**
3. Dry eye
4. **Blood in your urine**
5. **Hair thinning**

b) Which of the following can be evidence of bleeding? (Select all that apply)

1. **Black, tarry stools**
2. **Severe headache**
3. **Pink or brown urine**
4. **Severe bruising**

**All of these could be evidence of severe bleeding. Black, tarry stools can be a sign of passing blood in your stools (faeces). A severe headache may be a sign of a bleed in your brain. Pink or brown urine may indicate that there is blood in your urine. Severe bruising, especially that which appears without an apparent reason, may also indicate a severe bleed.**

c) If you notice a little bit of blood whilst brushing your teeth you should go straight to your nearest Emergency Department

True / **False**

**Bleeding gums can occur whilst taking warfarin. Unless this bleeding is severe, there is no need to go the Emergency Department. Instead, tell your anticoagulant practitioner when you next speak to them.**

d) You have had a severe headache over the last few days. What should you do? (Please select the response that best answers this question)

1. You do not need to do anything
2. Take a pain killing medicine (e.g. paracetamol tablets)
3. Discuss it with your anticoagulant practitioner when you are next due an INR test
4. **Go straight to your nearest Emergency Department**

**A severe headache may be a sign of a bleed in your brain and needs to be urgently investigated.**

e) You notice that you have black, tarry stools. What should you do? (Please select the response that best answers this question)

1. You do not need to do anything
2. Take a laxative (e.g. senna tablets)
3. Discuss this with your anticoagulant practitioner when you are next due an INR test
4. **Go straight to your nearest Emergency Department**

**Black, tarry stools can be a sign of passing blood in your stools (faeces) and needs to be urgently investigated.**

f) If a woman takes warfarin in early pregnancy, it can damage the unborn child

**True** / False

**Warfarin can affect the development of a baby in early pregnancy, causing birth defects.**

g) A woman who takes warfarin should not breast-feed her infant

True / **False**

**As warfarin does not pass into breast milk, it is safe to breast feed while taking warfarin.**

h) You should stop your warfarin 48hours before a dental extraction

True / **False**

**If your INR is less than 4.0, you should not have to stop or reduce you dose of warfarin before a dental extraction. You should check your INR checked no more than 72hours before your planned dental procedure (ideally 24hours before).**

7**. How patient self-testing of oral anticoagulation works in practice**

a) You should discuss the idea of self-testing with your anticoagulant clinic before buying a coagulometer

**True** / False

**It is important that you discuss self-testing with your anticoagulant clinic before buying a coagulometer. Self-testing is not suitable for everyone and your anticoagulation practitioner will be able to give you guidance on whether it is likely to be good for you. You will also need to check that your anticoagulant clinic is happy to supervise your self-testing.**

b) There is no need to have any education and training before self-testing

True / **False**

**It is very important to have education and training before self-testing as this will give you the essential understanding of the important aspects of warfarin and monitoring.**

c) Once you start self-testing there is no need to return to the clinic for another appointment

True / **False**

**One of the benefits of self-testing is that for much of the time it can be done away from the anticoagulant clinic. However, you should come for a clinic review every six months. This will give you the opportunity to discuss any issues with your anticoagulation practitioner, and to check that your coagulometer is working correctly.**

d) Listed below are some of your responsibilities as someone who is self-testing their INR. Please select those that apply (there may be more than one choice).

1. **Perform INR tests at the time agreed with your anticoagulation practitioner**
2. Decide on the dose of warfarin to take
3. **Let the clinic know if you have had any changes to your medication**
4. **Attend the clinic for a six-monthly review**

e) Listed below are some of the responsibilities of the anticoagulant clinic in supporting you self-testing. Please select those that apply (there may be more than one choice).

1. **Advising you on the dose of warfarin to take**
2. Performing maintenance on your coagulometer
3. **Performing quality assurance on your coagulometer**
4. Supplying your INR test strips

f) You do not need to let the anticoagulant clinic know of your INR is within the correct range

True / **False**

**It is essential that you let your anticoagulation practitioner know the results of your INR test, even if your INR test is within the correct range.**