A guide to Anticoagulation therapy for reducing the risk of blood clots

Heparin

Heparin is an anticoagulant that is given by injection. It is used to treat or to prevent blood clots. It can be given to patients when they are in a hospital or a primary care setting, you can also inject yourself at home with appropriate guidance given by a clinician.

Low molecular weight heparin (LMWH) can be given to pregnant women who may be assessed at a higher risk of developing blood clots. If you are on an anticoagulant and plan to become pregnant speak to your doctor in advance so you can discuss how you will manage your anticoagulant therapy during pregnancy. If you become pregnant whilst taking an anticoagulant other than heparin contact your doctor straight away.

LMWH can also provide protection against blood clots for people who may have to stop taking other anticoagulants when undergoing surgery. This is sometimes called bridging therapy.

LMWH is usually injected under the skin in the stomach. Do not inject into a muscle and do not rub the area once you have injected.

Make sure that you are told you how you can dispose of your medicines.

For more details on blood clots, conditions and anticoagulation therapy:
www.anticoagulationuk.org

For information on the National Institute for Health and Care Excellence (NICE):
www.nice.co.uk

For information on the Scottish Medical Consortium (SMC):
www.scottishmedicines.org.uk

The NHS Choices website for the public:
www.nhs.uk

The information provided in this leaflet is for guidance only. If you require advice in relation to a specific health condition, treatment or drug therapy relating to the conditions referred to in this leaflet, please talk to your doctor or pharmacist.

Anticoagulation UK is an independent charity whose aims include the prevention of thrombosis, and the provision of information, education and support to people on anticoagulation therapy. We work with medical professionals, government and industry and collaborate with other charities and organisations to campaign and raise awareness and patient access to all suitable anticoagulation therapies and for those taking warfarin, access to INR self-monitoring if they wish to do so.

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What are anticoagulants?

Anticoagulants are a type of medicine that help prevent blood clots, and also to stop existing clots from becoming larger. 
Anticoagulants are commonly known as ‘blood thinners’ yet they do not actually thin the blood. They work by interfering with the process of how clots are formed so that the blood takes longer to clot.

Anticoagulants are used to treat and prevent blood clots that may occur in the blood vessels of the body. They are given to people who are considered to be at a higher than normal risk of getting blood clots and those who have already had a previous clot.

Blood clots

Not all blood clots are bad. If you cut yourself your body will form a blood clot at the site of the wound to stop you bleeding. Sometimes a blood clot forms within the blood vessels and prevents the blood flowing to the lungs, brain or heart and this can cause serious conditions such as a pulmonary embolism (PE), stroke or heart attack.

A blood clot in a large vein such as in the leg vein is known as deep vein thrombosis (DVT) and this can lead to complications if a piece of the clot breaks off and travels to the lung causing a pulmonary embolism (PE).

Risk factors

Some people will be at higher risk of a venous thromboembolic event (VTE) and factors include:

- A previous DVT or PE
- Family history of DVT and PE sometimes caused by an inherited condition
- People with Atrial Fibrillation - a heart condition that causes an irregular and often abnormally fast heart rate
- Mechanical heart valve replacement
- Thrombophilia, types of clotting conditions: e.g. Antithrombin Deficiency, Antiphospholipid Syndrome
- Major surgery such as orthopaedic surgery for joint replacements is a high risk and patients may be offered a type of anticoagulant treatment (prophylaxis) to reduce their risk of a blood clot.

Anticoagulant treatment

There are now several anticoagulants which are available to treat and prevent blood clots.

Warfarin

Warfarin is an oral anticoagulant and has been used to treat and prevent recurrence of blood clots for over 60 years. Warfarin is a vitamin K antagonist (VKA) and works by reducing the production of vitamin K in your liver which helps your blood to clot. It comes in 0.5mg, 1mg, 3mg and 5mg tablets.

Warfarin has to be monitored regularly and this is done by blood tests that check how long the blood is taking to clot called the international normalised ratio (INR). The INR can be affected by diet and other medications and if the levels fall outside the recommended range for the patient’s treatment, dose adjustments will be made by your health care professional.

When being prescribed warfarin, you should be advised how to take your medication and how their INR will be monitored on a regular basis. INR monitoring is done in anticoagulation clinics which may be based in a hospital, GP surgery, pharmacy or community setting.

Some people who are prescribed warfarin long term choose to monitor their own INR levels at home, or with the help of a carer using a small handheld device known as a coagulometer. These monitors measure and record the results within minutes by taking a pinprick of blood from the finger. You can then notify the anticoagulation nurse or their specialist of the result and then be advised of any dosing adjustments required. Self-monitoring provides convenience and reassurance to people and can avoid the need to attend a clinic for blood tests. If you want to self-monitor you should discuss this with your current provider of your anticoagulation services.

Direct Oral Anticoagulants (DOACS or NOACS)

DOACs work differently from warfarin. They do not need to be monitored by INR blood tests. Before starting a DOAC you will need a blood test to check your kidney function, this blood test needs to be repeated at least once a year; but may be needed more often.

Please make sure that you ask whoever is prescribing your anticoagulant when you will need a blood test and write the date in your diary so that you can follow up the appointment if it does not come through.

There are four DOACs - Apixaban, Dabigatran, Edoxaban and Rivaroxaban.

The National Institute for Health and Clinical Excellence (NICE) and Scottish Medical Consortium (SMC) have issued guidelines for the use of these medicines in the following indications:

- prevention of blood clots when undergoing total hip and knee replacement surgery (Apixaban, Dabigatran and Rivaroxaban)
- for the prevention of stroke for people with non-valvular Atrial Fibrillation
- (for the treatment and prevention of recurrence of blood clots for people with deep vein thrombosis (DVT) and the prevention and recurrence of pulmonary embolism (PE))
- (for prevention of adverse outcomes after management of Acute Coronary Syndrome (Rivaroxaban))

These drugs are usually prescribed as fixed doses either as a once a day or twice a day treatment. When making a decision around anticoagulation therapy, your health care professional should discuss all the options available explaining the benefits and risk attached to any treatment. DOACS have less interactions with other drugs and foods than warfarin.