British Society of Interventional Radiology
The Royal College of Radiologists
63 Lincoln's Inn Fields
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Thrombolysis

This information sheet explains about the thrombolysis procedure. It describes what the procedure involves, the risks, and what to expect when you come to the Interventional Radiology department for treatment.

Please note that this leaflet is not meant to replace discussion between you and your doctor. You should raise any questions you may have with the doctor who has referred you for, or is performing, the procedure.

What is Thrombolysis?

Blood clots forming in veins or arteries can stop blood from flowing to where it needs to go. This can cause problems depending on where the blockages are, for example, blockage in your leg arteries can cause leg pain from reduced blood oxygen supply (known as 'ischaemia'). Blockages in leg veins can also cause pain/swelling (known as 'deep vein thrombosis' or 'DVT') which can break off and travel to your lungs causing breathing difficulties (known as pulmonary embolism or 'PE').

Thrombolysis is a treatment used to break down blood clots (sometimes referred to as 'clot-busting drugs'). This can be delivered systemically i.e. a drug given into a vein that passes around your body. In the past, systemic thrombolysis was one of the major treatments for heart attacks and is still used today for strokes. Thrombolysis should not be confused with thrombectomy which is a technique used to physically remove clot.

However, thrombolysis may have some unwanted side-effects such as bleeding at other places. To limit this, we can place small plastic tubes called catheters at the site of the clot to deliver drugs directly to break it down. It is important to note that not all clots are appropriate for thrombolysis; timing of clot occurrence and its location need to be considered before thrombolysis treatment.

Why do I need a Thrombolysis?

Your doctor feels that the cause of your symptoms is related to a blood clot that has formed recently. They have decided the best way to re-establish flow in the vessel and improve your symptoms is to break the clot down with drugs targeted at the site. Leaving the clot untreated would mean symptoms are unlikely to improve and may get worse.

How do I prepare for a Thrombolysis?

Thrombolysis (clot-busting drugs) is unsafe for some people. It is therefore very important that you let your doctor know if you have had any of the following:

- Recent surgery anywhere, especially to the head, chest or abdomen
- Recent haemorrhage (bleeding from anywhere)
- Recent significant trauma/injury
- Recent stroke or brain tumour
- Pregnancy
- Coagulopathy (increased tendency to bleed significantly)

You don't need to undertake any specific preparation apart from omitting certain tablets that you will be told about days before the procedure. You can eat and drink normally beforehand.

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Who performs the procedure and where?

A specialist X-Ray doctor called an Interventional Radiologist performs the procedure in a special operation room called an angiography suite. This is usually in the hospital radiology (X-ray) department. They will be assisted by a team of professionals including nurses and radiographers.

How is it performed?

The skin, usually in the groin but this will depend on the site of your clot, is cleaned with antiseptic and local anaesthetic is injected to freeze the area. A small needle is used to enter the blood vessel and then a guidewire and small plastic tube (catheter) are passed to the site of the clot under X-Ray guidance. X-Ray dye is injected to show the extent of the clot and then the thrombolysis (clot busting drugs) are injected. The catheter is secured in position and the drugs are continued, with a small injection pump, for 1-2 days afterwards (sometimes longer for clots in veins).

Progress is monitored with further X-Ray dye injections after around 24 hours and the dose of drugs may be adjusted. Once the clot has cleared there is often an underlying narrowing in the blood vessel which requires opening up with a balloon (angioplasty) and/or stent. Sometimes thrombolysis is combined with mechanical clot removal (thrombectomy) to speed up the process.

What are the potential risks or complications of Thrombolysis?

There are a few uncommon, but important, complications of the procedure to be aware of. This includes bruising/bleeding at the access site or internally, such as within the brain which can cause a stroke. Infection and allergic reaction to the X-ray dye are other known risks. Sometimes the treatment may be ineffective or the clot may recur if the underlying cause is not addressed. If you have any questions regarding risk, your doctor will discuss this in more detail.

What happens afterwards?

After your thrombolysis treatment, you will be taken back to the ward and have your vital signs checked regularly as well as the site of the thrombolysis tube monitored for bleeding. You will be in hospital for a few days to monitor your progress. You will be connected to an injection pump and have the tube in your blood vessel, usually at the groin, which will mean your mobility will be limited and you may have to rest in bed. Once the thrombolysis has finished and the plastic tubes have been removed, you would be discharged home with some tablets to reduce to risk of future clot formation.

Notes