

# Undergoing Arterial or Venous Thrombolysis

An information guide



# Undergoing Arterial/Venous Thrombolysis

## Introduction

This leaflet tells you about the procedure known as thrombolysis, it explains what is involved and what the possible risks are.

It is not meant as a substitute for the advice which the doctor may give you, but can act as a starting point for such a discussion. Prior to any procedure you should have a full explanation of the procedure and the risks and benefits before you sign the consent form.

## What is thrombolysis?

Thrombolysis means “breaking up blood clots”. Once a clot starts to form in a blood vessel it may narrow or block the vessel.

While an operation may be necessary to remove the clot, it is also possible to dissolve the clot by injecting a special “clot busting” drug into the artery, directly into the clot via a catheter in the leg or arm. This can improve the blood flow, and make an operation unnecessary.

## Why do I need thrombolysis?

Your doctors know that there is a problem with part of your circulation. You are likely to have had a special x-ray (CT scan or MRI scan) examination or ultrasound of the blood vessels which are blocked.

If nothing is done about the situation, then severe and permanent damage may result, and amputation may be necessary. While the blockage could need treatment with surgery, in your case thrombolysis has been offered as the best way of proceeding.

## **Who will be doing the thrombolysis?**

A specially trained doctor called an interventional radiologist will carry out the procedure.

Radiologists have special expertise in using x-ray equipment and also in interpreting the images produced. They need to look at these images while carrying out the procedure.

## **Where will the procedure take place?**

In a special room within the x-ray department, known as the interventional radiology unit.

## **How do I prepare for thrombolysis?**

You will probably be asked to starve for four hours beforehand, although you may be allowed to drink water. You may receive a sedative to relieve anxiety. You will be asked to put on a hospital gown.

If you have any allergies, you must let your doctor know. In particular if you have previously reacted to intravenous contrast medium, (the dye used for kidney x-rays and CT scanning).

A hospital bed with equipment to monitor your condition continuously is sometimes required. These beds are usually located in ICU, high dependency unit (HDU) and high care areas on wards.

You need to have a cannula (plastic tube) inserted into a vein in your arm, so that the radiologist can give you a sedative or painkillers. Once in place, this cannula will not cause any pain.

## What actually happens during thrombolysis?

This is a keyhole procedure which involves a small cut under local anaesthesia. The procedure starts off in exactly the same way as an angiogram, and if you have already had this performed, you will know what to expect.

You will lie on the x-ray table on your front if the keyhole cut is to be made behind the knee or your back if the keyhole cut is to be made in your arm or your groin.

You may also have a monitoring device attached to your chest and finger, and may be given oxygen.

The procedure is performed under sterile conditions with the operators wearing masks, gloves and aprons. Most of the rest of your body covered with a sterile sheet. Please do not touch the sheet and keep your hands underneath it or away from it.

The skin near the puncture site (cut) will be cleaned with antiseptic, and then the skin will be numbed with local anaesthetic, and then a catheter (thin plastic tube) will be inserted into the blood vessel.

Currently we use three ways of delivering the clot busting drug and treating your blood clot.

The options are as follows:

- **(1)** Catheter Directed Thrombolysis.
- **(2)** Pharmacomechanical Thrombolysis.
- **(3)** Pharmacomechanical Thrombolysis supplemented by continued Catheter Directed Thrombolysis.

The choice of treatment will depend on the position of your blood clot and the condition of your blood vessel. The decision will be made by the operator after he/she has discussed the options with you.

### **Option (1) - Catheter Directed Thrombolysis (CDT)**

The radiologist will use the x-ray equipment and small amounts of contrast medium (dye) to make sure that the catheter is moved into the optimal position, very close to the blockage in the vessel. Then the clot dissolving drug is injected down the catheter and into the blood clot.

The radiologist will check progress at daily intervals by injecting dye to show how much clot has dissolved.

The catheter has to be left in the vessel and attached to an infusion pump, so that the injection of the clot-dissolving drug can be continued for up to 72 hours.

### **Option (2) - Pharmacomechanical Thrombolysis**

The radiologist will use the x-ray equipment and small amounts of contrast medium (dye) to make sure that the pharmacomechanical catheter is moved into the optimal position, into blockage in the vessel.

Then the clot dissolving drug is injected down the catheter and into the blood clot. It is left to work for 20 minutes and then a through a physical process the clot is aspirated (sucked) out of the vessel.

Treatment may be completed at this stage. This will depend on the state of your blood vessel, the need for further treatment (e.g. stenting – insertion of metal spring, ballooning of the vessel) and if there is any significant residual blood clot.

### **Option (3) - Pharmacomechanical Thrombolysis supplemented by continued Catheter Directed Thrombolysis**

Often pharmacomechanical thrombolysis (option 2) alone is not sufficient and continuing catheter directed thrombolysis (for few days) may be necessary.

Pharmacomechanical Thrombolysis (option 2) may initially be completed. If this treatment is not sufficient then catheter directed thrombolysis (option 1) may need to be continued.

The catheter is moved into the optimal position, very close to the blockage in the vessel. Then the clot dissolving drug is injected down the catheter and into the blood clot.

The radiologist will check progress at daily intervals by injecting dye to show how much clot has dissolved.

The catheter has to be left in the vessel and attached to an infusion pump, so that the injection of the clot-dissolving drug can be continued for up to 72 hours.

### **Will it hurt?**

Some discomfort may be felt in the skin and deeper tissues during injection of the local anaesthetic.

The radiologist and other staff looking after you can give you additional painkillers such as entonox (gas and air) if necessary. You will be awake during the procedure, and able to tell the radiologist if you feel any pain, or become uncomfortable in any other way.

As the dye (contrast medium) passes around your body, you may get a warm feeling which some people can find a little unpleasant. However, this soon passes and should not concern you.

## **How long will it take?**

Every patient's situation is different and it is not always easy to predict how complex or how straightforward the procedure will be.

As a guide, expect to be in the x-ray department for about an hour and a half while the procedure is undertaken.

## **What are the risks and complications?**

Thrombolysis is usually a safe procedure, designed to improve your circulation and prevent you having a much larger operation.

However there are some risks and possible complications that can arise. The risks associated with not treating your blocked artery are felt to be greater than the risks of bleeding elsewhere.

- Bruising often occurs in the groin area. This does not usually need treatment. There is approximately a 40% risk of patients developing a haematoma (bruise) around the site.
- A large haematoma can become infected requiring antibiotics, but this is rare.
- In approximately 2 to 4% of patients, some damage can be caused to the artery by the catheter and this may need to be treated by surgery or another radiological procedure.
- There is approximately a 4% risk of a clot breaking off (distal emboli) and causing ischaemic pain (pain resulting from the reduced blood flow caused by the obstruction). Small clots will be dissolved by the continuation of the thrombolysis. Sometimes the blood clot may be so extensive that it cannot be dissolved completely. In these cases, surgery may be required to relieve the blockage.
- Clot dissolving drugs are very powerful and there is a risk that bleeding will occur elsewhere.

- There is approximately a 9% risk of internal bleeding, if this should happen it may be necessary to give you a blood transfusion.
- There is approximately a 2% risk of gastrointestinal haemorrhage.
- There is approximately a 1 to 2% risk of patients having a stroke, however the risk depends on patient factors such as age and previous disease. Older patients have often had significant illness in the past and are at higher risk of disease.
- Allergic reaction to the contrast medium (the dye used in x-ray). In most cases this is minor, but in 1 in 3000 people the reaction may be more severe and require urgent treatment with medicines.
- In some patients the x-ray contrast medium can affect kidney function. If you are likely to be at risk of this then special precautions will be taken to reduce the chance of this problem occurring.
- Despite these risks, most patients do not suffer significant ill effects and most patients benefit.

### **What happens afterwards?**

You will be taken back to either the ICU, high dependency unit or a ward bed. There nurses will monitor your pulse and blood pressure to make sure that there are no untoward effects.

They will also examine the keyhole puncture site to make sure there is no bleeding from it. You need to stay in the unit for as long as the catheter stays in the vessel. The radiologist needs to check on progress and will arrange for you to come back to the x-ray department every 6 to 12 hours or so.

During this time painkillers can be given as required depending on the amount of pain you experience.

## **What happens next?**

This all depends on where the blockage was and how successful the thrombolysis has been. In some arterial cases, no further procedure is necessary. However, in some cases the underlying artery may be so narrowed that an operation is required to permanently improve the blood supply.

Diseased veins often require further treatment such as the insertion of the stent. In this case this is performed after thrombolysis is completed usually during the same admission.

Once the thrombolysis and treatment has been completed you will return to the ward.

## **How can I continue to help myself?**

- Aiming to stop smoking is essential. If you continue to smoke further damage to the arteries can occur. Most people find it difficult to stop smoking, but there are many aids now available which can increase your chances of success. Please ask your doctor or nurse if you need any help.
- Most patients will be started on blood thinning drugs to improve blood flow in the vessels, and to reduce the chance of a clot returning. The drugs may be given in the form of injections.
- If you have high blood pressure, it is important to take your blood pressure lowering medication and have your blood pressure checked regularly about every 6 months.
- Patients with venous disease may be asked to wear stockings.

## Contact numbers

If you have any questions or queries you can contact your GP or the Vascular Team.

**Hospital switchboard** - Telephone: 0161 624 0420

**Vascular Consultant Secretaries** - Telephone:

0161 627 8698 / 0161 627 8981 / 0161 627 8826

**Vascular Nurses** - 0161 778 5090

**Ward T3** - Telephone: 0161 627 8850

## Smoking Cessation

Smoking cessation services are available locally for people who want to quit smoking or who have already decided to stop.

**Bury Lifestyle Service** contact the team on 0161 253 7554 or by email at: [LifestyleService@bury.gov.uk](mailto:LifestyleService@bury.gov.uk)

## Heywood, Middleton & Rochdale Stop Smoking Support Clinics

Living Well contact the team on 01706 751190

## Oldham

Positive steps contact the team on 0800 288 9008 Stop smoking advice and information is also available from the following:

- Your GP
- Your local pharmacy
- NHS Stop Smoking Helpline on: 0300 123 1044
- NHS Smokefree website: [www.nhs.uk/smokefree](http://www.nhs.uk/smokefree)

You may like to look at the following websites for further information. However, as we are not responsible for these websites we cannot endorse them.

**Vascular society:** [www.vascularsociety.org.uk](http://www.vascularsociety.org.uk)

**If English is not your first language and you need help, please contact the Interpretation and Translation Service**

Jeśli angielski nie jest twoim pierwszym językiem i potrzebujesz pomocy, skontaktuj się z działem tłumaczeń ustnych i pisemnych

اگر انگریزی آپ کی پہلی زبان نہیں ہے اور آپ کو مدد کی ضرورت ہے تو ، براہ کرم ترجمانی اور ترجمہ خدمت سے رابطہ کریں

Dacă engleza nu este prima ta limbă și ai nevoie de ajutor, te rugăm să contactezi Serviciul de interpretare și traducere

ইংরাজী যদি আপনার প্রথম ভাষা না হয় এবং আপনার সাহায্যের প্রয়োজন হয় তবে অনুগ্রহ করে দোভাষী এবং অনুবাদ পরিষেবাটিতে যোগাযোগ করুন

إذا لم تكن الإنجليزية هي لغتك الأولى وتحتاج إلى مساعدة ، فيرجى الاتصال بخدمة الترجمة الشفوية والتحريرية

☎ : 0161 627 8770

@ : interpretation@pat.nhs.uk

To improve our care environment for Patients, Visitors and Staff, **Northern Care Alliance NHS Group** is Smoke Free including buildings, grounds & car parks.

For advice on stopping smoking contact the Specialist Stop Smoking Service on 01706 517 522

**For general enquiries please contact the Patient Advice and Liaison Service (PALS) on 0161 604 5897**

**For enquiries regarding clinic appointments, clinical care and treatment please contact 0161 624 0420 and the Switchboard Operator will put you through to the correct department / service**

The Northern Care Alliance NHS Group (NCA) is one of the largest NHS organisations in the country, employing 17,000 staff and providing a range of hospital and community healthcare services to around 1 million people across Salford, Oldham, Bury, Rochdale and surrounding areas. Our Care Organisations are responsible for providing our services, delivering safe, high quality and reliable care to the local communities they serve.

The NCA brings together Salford Royal NHS Foundation Trust and the hospitals and community services of The Royal Oldham Hospital, Fairfield General Hospital in Bury, and Rochdale Infirmary (currently part of The Pennine Acute Hospitals NHS Trust).

 [www.facebook.com/NorthernCareAllianceNHSGroup](http://www.facebook.com/NorthernCareAllianceNHSGroup)

 [www.linkedin.com/company/northern-care-alliance-nhs-group](http://www.linkedin.com/company/northern-care-alliance-nhs-group)

 Northern Care Alliance NHS Group (NCA) @NCAlliance\_NHS

**Date of publication: January 2013**

**Date of review: January 2021**

**Date of next review: January 2023**

**Ref: PI(SU)792**

© The Northern Care Alliance NHS Group

[www.pat.nhs.uk](http://www.pat.nhs.uk)

[www.northerncaalliance.nhs.uk](http://www.northerncaalliance.nhs.uk)

