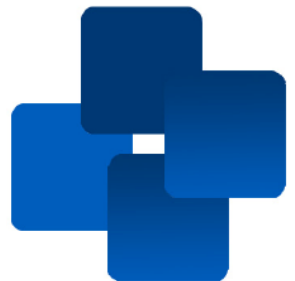


Patient Information

Urokinase Therapy to Unblock Haemodialysis Catheters

Renal Department

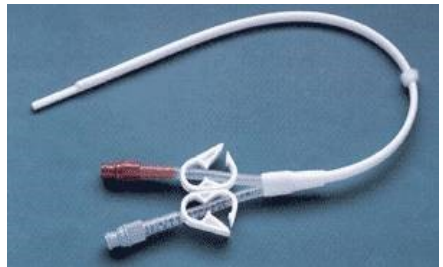


Introduction

The purpose of this booklet is to provide you with information should your renal dialysis catheter (RDC) flows become too poor, due to blood clots, for efficient dialysis to take place. If your dialysis continued at these flows you would become under dialysed and eventually become unwell. Information is given about a drug called **urokinase** that is used to unblock your catheter so that your normal dialysis can take place. Unfortunately this treatment is not always successful and if this is the case, your catheter will have to be changed for a new one.

Renal Dialysis Catheter (RDC)

A renal dialysis catheter is a plastic tube that has been tunnelled under your skin, usually in the chest region, and inserted into a major vein. This device enables blood to be taken from you at a certain flow rate (such as 250 millilitres per minute) and sent through the haemodialysis machine so that waste products can be removed.



To prevent the lines of the renal dialysis catheter becoming blocked with a blood clot between dialysis sessions, a substance known as a line lock is inserted into both lumens of the catheter at the end of your dialysis session. This is removed just before your next dialysis session.

Blocked Renal Dialysis Catheters

Unfortunately, despite using the line lock substance, the renal dialysis catheters can sometimes become blocked with a blood clot inside or on the tip of the catheter. Blood flows may become poor, less than 200 millilitres per minute, and below this blood flow rate dialysis will become less efficient.

To prevent the renal dialysis catheter having to be removed and a new one inserted, a drug can be used to try and dissolve the blood clot, this drug is called **urokinase** (Ure-oh-kye-nase).

What is urokinase?

Urokinase is a medicine which is used in the treatment of blood clots. Urokinase belongs to a class of medicines called thrombolytics. It is normally used to clear blood vessels in the body, which have been blocked by blood clots. However, urokinase has been shown to be effective in dissolving blood clots from renal dialysis catheters.

How is urokinase used to unblock RDCs?

Depending on how your RDC is not working, will depend on how urokinase is given.

1. Urokinase infusion during dialysis

If your blood flows are between **100-200mls per minute**, you will be given 200,000 units of urokinase over 3 hours during dialysis. This is via an infusion pump connected to the bubble trap of your machine. Usually the flow of your RDC will be improved to greater than **200mls per minute**. However, in circumstances where there is no improvement, a senior kidney doctor will decide if your RDC needs to be changed. Blood tests may be taken to decide how quickly this needs to be done.

2. Taurolidine-urokinase dwell

If the flows from your RDC are less than **100mls per minute**, urokinase mixed with substances called citrate and taurolidine (TauroLock™-U25,000) are put down each limb of your catheter. Citrate and taurolidine have anti-bacterial properties. This solution is left for 1-2 hours. This is called a dwell, and only a very small amount of this solution may enter your bloodstream.

After 1-2 hours the TauroLock™-U25,000 is removed, and if the flows have improved above **200mls per minute** you can start dialysis. However, if the flows have only improved to between **100-200mls per minute** you will require a urokinase infusion on dialysis (see “1. Urokinase infusion during dialysis” on the previous page).

If the flows remain less than **100mls per minute**, arrangements will be made for you to be admitted / attend Ward 6B or the RITA Unit for a urokinase infusion. The doctor may also order a chest X-ray to check that your RDC has not moved position or is kinked.

3. Urokinase infusion

If you had a taurolidine-urokinase dwell and it was unsuccessful you will have to be admitted to Ward 6B or the RITA Unit at the Lister Hospital (usually as a day case) for a urokinase infusion. Using two infusion pumps, each connected to the limbs of your RDC, 25,000 units of urokinase are infused down each limb of the RDC and into your blood stream. The time taken to do this safely is 6 hours, after which you should have dialysis. If the infusion does not work, a senior kidney doctor will decide if your RDC needs to be changed. Blood tests may be taken to decide how quickly this needs to be done.

Taking other medicines and having urokinase

The following medications may increase the risk of side effects with urokinase:

- Antiplatelets including aspirin, clopidogrel, dipyridamole
- Dextrans
- Non-steroidal anti-inflammatories, e.g. ibuprofen, naproxen, diclofenac
- Anticoagulants including heparin, dalteparin (though you may be given this on dialysis safely)
- Other thrombolytics, e.g. streptokinase

What do my kidney doctor or dialysis nurse need to know before I can have intravenous urokinase?

They need to know if you are taking or have recently taken any of these medications:

- Antiplatelet drugs
- Non-steroidal anti-inflammatory drugs
- Anticoagulants
- Thrombolytics
- Any complementary preparations and vitamins you are taking

You should also advise your kidney doctor or dialysis nurse if you:

- have had an operation within the last 14 days (including having a tooth extraction)
- have had a stroke within the last 3 months
- are allergic or sensitive to, or have had a reaction to urokinase
- have bleeding problems
- have recently given birth to a baby
- you have diabetes and have had problems with bleeding of the retina in the eye
- you have had any recent falls
- have cancer of the brain
- have an infection of the pancreas or heart
- have severe high blood pressure

What will the kidney doctor check before prescribing me urokinase?

- Your medical history to make sure you can receive urokinase
- Your recent blood clotting results
- Any medications you are taking that may mean you cannot have urokinase

Are there any side effects from having intravenous urokinase?

Everyone's reaction to a medicine is different. It is difficult to predict which side effects you could have from taking a particular medicine, or whether you will have any side effects at all.

Common side effects:

- Minor bleeding problems (bleeding wounds/gums/nose)
- Blood clots - small fragments of a blood clot may be released and pass along the blood vessel and cause blockage elsewhere, such as in the lungs, heart or limbs
- Blood detected in the urine after a urine test
- Fever, chills and/or shivering
- Abnormal blood tests

Rare side effects:

- Major bleeding
- Anaphylactic reactions
- Pseudoaneurysm (tearing of an artery wall)
- Stroke
- Visible blood in the urine

If you feel unwell or have signs of an allergic reaction, such as difficulty with breathing, swelling face, lips or throat and/or a skin rash, tell the person looking after you immediately.

If you have any other concerns about side effects, speak to the doctor or senior nurse looking after you.

Possible side effects to look out for when you get home:

- Any bleeding, including any signs of blood in your urine and faeces (stools)
- Bleeding from the exit site of your RDC

Phone your dialysis unit or Ward 6B for advice if your RDC exit site starts bleeding when you get home (contact details on back cover).

- Signs of a stroke which can be remembered with the word **F.A.S.T.**
 - ⇒ **Face** – the face may have dropped on one side, the person may not be able to smile or their mouth or eye may have drooped
 - ⇒ **Arms** – the person with suspected stroke may not be able to lift one or both arms, and keep them there, because of arm weakness or numbness
 - ⇒ **Speech** – their speech may be slurred or garbled, or the person may not be able to talk at all despite appearing to be awake
 - ⇒ **Time** – it is time to **dial 999 immediately** if you see any of these signs or symptoms of a stroke

Can I drink alcohol after having urokinase?

Alcohol can interact with certain medicines. In the case of urokinase, there are no known interactions between alcohol and urokinase.

The NHS recommendation is:

- Men and women are advised not to drink more than 14 units of alcohol a week on a regular basis.
- Spread your drinking over three or more days if you regularly drink as much as 14 units a week

Are there any foods I cannot have after having urokinase?

In the case of urokinase there are no specific foods that you must exclude from your diet when having urokinase.

Can I drive and operate machinery?

Yes, urokinase does not effect these tasks.

Useful contact details

Ward 6B, Nephrology (Renal) Ward, Lister Hospital	01438 285063
Lister Haemodialysis Unit	01438 284152
St Albans Haemodialysis Unit	01727 897588
Chiltern Kidney Centre	01438 288850
Bedford Renal Unit	01438 286750
Harlow Renal Unit	01279 278205
Renal Pharmacy Team, Lister Hospital	01438 284677

Further information

If you have any questions or concerns about the use of urokinase to unblock your catheter, please discuss this with the kidney doctor or senior sister at your renal unit. Alternatively, you can contact the Renal Pharmacy Team.

Additional information

- Manufacturer's patient information leaflet - www.medicines.org.uk
- NHS website - www.nhs.uk/conditions/stroke

www.enherts-tr.nhs.uk

You can request this information in a different format or another language.