Renal angiogram and angioplasty/stent of the renal artery

Your consultant has asked for you to have a renal angiogram. This is a procedure, which will show up the arteries supplying your kidneys. This is done by passing a narrow tube through the artery in your groin. Once the tube is in place we can inject dye through it and by using x-rays to take pictures we can see if there is a narrowing or blockage of your kidney arteries. Using this information we can decide the best way to treat the kidney artery disease.

We may decide that it is necessary to treat a narrowing of your kidney artery immediately after performing the renal angiogram. This treatment will involve angioplasty of the kidney artery, which will involve passing a small balloon into the artery to widen the narrowed part. This is usually followed by placing a stent, (a short metal tube) into the kidney artery so that the part of the artery which has been widened by the balloon angioplasty is kept permanently open.

If you are taking Warfarin, Metformin (Glucophage) or Clopidogrel (Plavix) tablets, please telephone the Royal Derby Hospital on 01332 783215 for further advice.

What are the benefits of having a renal angiogram and angioplasty/stent?
We hope to improve the blood supply to your kidney and improve kidney function and blood pressure control. If we do not perform this procedure, the narrowed artery supplying your kidney may block completely in the future stopping blood getting to the kidney.

What are the risks, consequences and alternatives associated with having a renal angiogram?
Most procedures are straightforward, however as with any procedure there is a small chance of side-effects or complications and these include:

- **Severe allergy to the dye injected into the arteries** (this occurs in less than 1 in 1000 patients).

- **Bruising around the artery puncture site in the groin.** This is common.

- **Severe bleeding from the artery puncture site** can occur in 1% of patients and may require a surgical operation to treat it.

- **Poor kidney function.** The dye that is injected into the arteries can cause further damage to the kidneys. The risk of damage is higher in patients who already have poor kidney function. The kidney damage caused by the dye may be temporary but if bad enough may have to be treated by dialysis. However, measures are taken to reduce the risk of this occurring.
Alternatives
Your consultant has recommended this procedure as being the best option. However, the alternatives to this procedure include a CT or MRI scan, but you may have had this done already. If you would like more information about this, please speak to your consultant or one of the nurses caring for you.

There is also the option of not receiving any treatment at all. The consequences of not receiving any treatment are that your illness or renal function may worsen. If you would like more information please speak to your consultant or one of the nurses caring for you.

What are the risks, consequences and alternatives associated with having an angioplasty and/or stent of the kidney artery?
Complications may occur in about 10% of patients and surgery to treat complications may occur in about 3% of patients.

Common complications include:

- **Bleeding** (5 - 10% of patients). This usually occurs in the groin where the artery is punctured. However, it can also occur around the kidney if the kidney artery ruptures during the procedure or if the kidney itself is punctured. This may be treated by blood transfusion or emergency surgery and may result in the kidney being removed.

- **Blockage of the kidney artery** (2 - 3% of patients). Due to splitting of the artery or blood clot formation. This may lead to permanent dialysis. The risk of this occurring varies with each patient especially if they only have one working kidney.

- **Worsening of the kidney function** (5 - 10% of patients). This may be temporary or permanent and may be treated by dialysis. This may be caused by blockage of the main kidney artery or due to the effects of the dye as already explained. This can also be caused by blockage of smaller branches of the main renal artery due to small bits of blood clot or fat passing into these branches during the procedure.

- **Death** (about 2% of patients). This may result from a complication of the procedure eg. haemorrhage. The risk of this occurring will vary with each patient especially if they have other serious illnesses eg. heart disease.

If you require further details about these or other possible complications, please contact the radiologist (x-ray doctor) at the Royal Derby Hospital on 01332 783215 before your angioplasty/stent of the renal artery, or the ward doctor during your stay.

Alternatives
Your consultant has recommended this procedure as being the best option. There are no alternative procedures available. However, there is always the option of not receiving any treatment at all. The consequence of not receiving any treatment is that your renal function may worsen. If you would like more information please speak to your consultant or one of the nurses caring for you.
Radiation risks
All x-ray procedures involve some exposure to radiation and so pose a degree of risk. Everyone is exposed to natural background radiation from the environment throughout their lives. One in 3 people will develop cancer at some point in their lives due to many various causes including environmental radiation. Radiation from a medical procedure involving x-rays can add very slightly to this risk. The length and level of exposure to radiation from x-rays in medical procedures is very strictly controlled and is kept to the minimum amount possible.

The added risk of cancer due to this radiation is extremely small. Your doctor has determined that the risk to your health of not having this procedure is considerably greater than the risk from the radiation used.

What happens when I come into hospital?
You will be admitted to a bed at the Royal Derby Hospital the day before or on the morning of the renal angiogram.

A member of the consultant’s team will see you before the angiogram to explain the procedure to you including the possibility that we may proceed to balloon angioplasty and stenting of the kidney artery. The doctor will also explain the possible complications of this treatment (which are included in this information sheet).

Do not hesitate to ask the doctor or nursing staff any questions that you may have. If you are happy to continue with the renal angiogram, and angioplasty and stent if necessary, you will be asked to sign a consent form.

You will be able to eat a light breakfast/lunch before the angiogram.

If you are diabetic please continue with your normal routine and diet.

What happens during my angiogram?
You will be brought to the X-Ray Department from your ward in a wheelchair.

You will be brought into the x-ray room and will lie flat on the treatment table throughout the procedure. If you have breathing or back problems and are unable to lie flat, please discuss this with the nursing staff or doctor before signing the consent form.

A nurse, radiographer and x-ray doctor will be with you at all times in the x-ray room to give you any help you require.

You will be awake throughout the procedure. Your groin may be shaved and will be cleaned to make it sterile. The skin of your groin will be numbed with local anaesthetic. A fine tube will then be inserted into the artery in your groin. After this, dye is injected into the tube which shows up the arteries. We record this by taking x-rays. You may feel hot ‘flushes’ when the dye is injected, this is a normal reaction.

The renal angiogram will take about 30 - 40 minutes. If we decide to proceed to balloon angioplasty and stenting the kidney artery, this will take another 45 minutes. If we do not proceed to treatment of your kidney artery then the tube in your groin is removed. The x-ray doctor will press on your groin for 10 minutes to stop the bleeding.
What happens after the renal angiogram and angioplasty/stent?
You will be taken back to your ward on a trolley. A nurse will be with you at all times during your transfer.

You must lie flat for at least 3 hours after the procedure to stop re-bleeding from your groin where the artery was punctured.

If we proceed to angioplasty and stenting of your kidney artery, you must lie flat for 12 hours after the procedure.

If your groin is painful, please ask the nurse for painkillers.

DISCHARGE INFORMATION AND AT HOME ADVICE
The ward staff will inform you when you will be allowed home and when your next clinic appointment will be.

Whilst at home you may wash as normal, but avoid strenuous exercise and driving. You may return to normal activities after 48 hours.

You may need to take painkillers for a few days if your groin is painful.

I have read and understood the information provided.

Patient’s signature: _______________________

References
Standards for Iodinated Intravascular Contrast Agent Administration to Adult Patients. Royal College of Radiologists (2005)

If you have any queries, or require further information please contact the ward doctor during your stay or a radiologist at the Royal Derby Hospital on 01332 783215.

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