



## Operation Information

### Transcatheter Renal Denervation

#### Introduction

Resistant hypertension refers to the condition where the systolic blood pressure of a patient is constantly above 160 mmHg even while taking three or more different classes of antihypertensive medication. The persistence of uncontrolled hypertension will cause various complications.

In addition to medical therapy, a radiofrequency ablation therapy known as Transcatheter Renal Denervation has been developed in recent years and it may improve the control of resistant hypertension.

#### **What is a Renal Denervation procedure?**

The system used in this procedure consists of two components – a radiofrequency ablation catheter and a power console ablation. This procedure is similar to a standard renal stenting procedure. The ablation catheter enters the renal arteries through a guiding catheter. The ablation catheter then delivers low-level RF energy (ablations) to both renal arteries to denervate the kidneys.

#### Outcomes

This operation is a minimally invasive surgery. It aims to block the sympathetic nerves over the renal arteries. The ultimate effect may vary according to individual patients.

#### Procedures

The doctor will first perform an aortogram or renal artery angiogram to determine the renal anatomy. This is performed through inserting an angiographic catheter, which has a small tube with a special tip that delivers contrast medium to the aorta or renal arteries. The contrast medium then fills the arteries, allowing the doctor to see the anatomy under x-ray.

Once the doctor has confirmed the patient's eligibility for the procedure, the doctor will begin the procedure by first engaging a guiding catheter to one of the renal arteries. A guiding catheter is a percutaneous apparatus used to gain access to the arteries. The doctor will then deliver the ablation catheter through the guiding catheter to the renal artery.

Once the ablation catheter reaches an optimal site, the doctor will begin the ablation. You may experience pain during the ablations, and the doctor will administer medication for pain control. Pain typically occurs only during the each ablation, which may last for a few minutes. Each round of ablation maybe repeated one to two times in each renal artery.

#### Possible Risks and Complications

- Mild**
  - Allergy to contrast (dye) or medication (e.g. nausea, rash and itchiness etc.)
  - Wound complications (e.g. bleeding and haematoma etc.)
- Severe**
  - Arrhythmias
  - Vascular damage

- Arterial dissection or perforation
- Renal failure
- Anaphylactic reaction to contrast
- Death

\*\* The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all operations are carried out with utmost professionalism and care, this does not rule out the possibility of complications arising. In the event of complications such as post-operative haemorrhage, perforation or vessel, further operations may be required.

## **Alternative Treatment**

Continue the patient's current prescribed medical therapy

## **Pre-operative Preparations**

### Two weeks prior to the procedure

1. You are advised to stay compliant to the prescribed antihypertensive medication.
2. Home-based blood pressure measurements are advised and recorded.
3. Preliminary tests such as blood tests may be required.
4. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia. Steroid will be given prior to the operation if there is history of allergy.
5. Blood thinning drugs (aspirin, warfarin, xarelto and pradaxa) or metformin (for diabetes) may have to be stopped several days before the procedure according to doctors' instruction.
6. As the procedure involves exposure to radiation, female patients should provide their last menstrual period (LMP) and pregnancy should be excluded prior to the procedure.

\* The doctor will determine your eligibility for this procedure based on the above information.

### On the day of the procedure

1. Good hygiene can prevent surgical wound infection. Therefore, we advise you to clean up yourself properly on the day of operation.
2. The procedures and possible complications will be explained by the doctor and a consent form must be signed prior to the procedure.
3. No food or drink four to six hours before operation.
4. Pre-medication or intravenous infusion may be prescribed.
5. Shaving may be required over the puncture site.
6. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewelry and contact lenses.
7. Please empty your bladder before the operation.

## **Post-operative Instructions**

### General

1. After the procedure, catheters will be removed. The wound site will be compressed to stop bleeding.
2. Nursing staff will check your blood pressure, pulse and wound regularly.
3. Bed rest may be necessary for 4 hours. In particular, please do not move or bend the affected limb. Whenever cough or sneeze, please apply pressure on the wound with the hand. Inform nursing staff if blood oozing from the wound site is noted.
4. Some patients might experience delayed hypersensitivity reactions. Inform nursing staff for any discomforts.
5. Usually you can be discharged next day after the procedure; nursing staff will inspect and cover the wound with light dressing before discharge.
6. The doctor will explain to you the results of the procedure before discharge. Should you have further questions, contact the attending doctor.

**Wound Care**

1. The dressing should be kept intact. In general, showers are allowed after 2 days. The dressing can usually be removed 2 days later if there is no sign of wound infection.
2. Vigorous activities (household or exercise) should be avoided in the first 3 weeks after the procedure. Bruising around the wound site is common and usually will gradually subside.

**Advice on Discharge**

1. Immediately consult your doctor or return to hospital for professional attention in the event of severe wound pain and redness, tenderness, pus or blood oozing, shivering, high fever over 38°C or 100.4°F, or any other unusual symptoms etc.
2. Any follow-up consultations should be attended as scheduled.

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

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Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details  
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