Cardiology Department

Coronary Sinus Reducer Implant

What is a Coronary Sinus Reducer?

The coronary sinus reducer is a stainless steel stent that is shaped like an hourglass and is designed to create a narrowing in the coronary sinus. This is the main vein that collects blood from the heart muscle. The Reducer works by creating a restriction in this vein, in turn, creating a backpressure which drives oxygen rich blood towards areas of the heart muscle (the myocardium) that may not be receiving enough. Therefore reducing angina symptoms; reducing admission to hospital and improving quality of life.

Why have I been chosen?

Your Cardiologist has identified you as having refractory angina. Refractory angina, unlike stable angina, does not respond to medication and is debilitating and patients often have reduced quality of life. This affects 5-10% of patients with coronary artery disease.

What are the treatment options for Refractory Angina?

Your arteries are not suitable for bypass surgery or routine coronary angioplasty and stents to open blockages within the coronary arteries. Until recently, treatment options have therefore been limited to lifestyle changes and making the best use of anti-angina medications.

Despite been on anti-angina medications, patients with refractory angina continue to develop symptoms which are debilitating and reduce quality of life.

What are the benefits of having a Coronary Sinus Reducer?

A Coronary Sinus Reducer for Treatment of Refractory Angina (COSIRA) trial was associated with significant improvement in symptoms and quality of life in patients with refractory angina who were not candidates for bypass surgery or coronary angioplasty.

What to expect?

You will be asked to attend a pre-assessment clinic prior to your procedure. At this appointment a nurse will carry out blood tests, blood pressure checks and get a medical history from you. This helps medical staff identify any potential problems in advance and take steps to sort them out beforehand. You will also be given more details about the procedure, including preparation and aftercare.

On the day of the procedure, you will be admitted to our day ward within the Cardiology Department, where the nurse caring for you will undertake some pre-procedure checks, including blood pressure, an *electrocardiogram* (ECG) to check your heart's rhythm, and they will insert a small tube (cannula) into the vein in your arm.

The procedure is carried out in a room called a *catheter lab, which* looks like an operating theatre, and usually takes about 30 minutes to one hour.

How is the procedure performed?

You will be taken into the catheter lab and asked to lie flat on a table. A member of the team will attach you to a heart monitor.

During the procedure, a small, flexible tube called a catheter is inserted into the jugular vein in the neck. It is done under a local anaesthetic, which will numb the skin where the tube is inserted. You will be awake during the test, although we can give you a sedative that will make you feel more relaxed.

The catheter is then guided through the blood vessel to your heart using an x-ray camera. Once the catheter has reached your heart, the tip of the catheter is positioned into the coronary sinus vein. We inject a special liquid dye (also called contrast), so that we can see the coronary sinus under the x-rays. This helps the doctor when positioning the device.

Firstly, the Doctor will use a fine wire which is placed into the coronary sinus. The Coronary Sinus Reducer is then passed over this wire and into position. The balloon inside this device is gently inflated so that it expands the hourglass-shaped stent.

A thin layer of cells within the vein will line the stent. This process takes approximately 6-12 weeks. Once the cells have lined the stent, the narrowing takes effect and the blood flow is then redistributed to the back towards the heart muscle. For this reason, it is normal not to feel any benefit for the first 8-12 weeks.

At the end of the procedure, the catheter and tube is removed and pressure is applied to stop the vein from bleeding. Once bleeding has stopped, a dressing will be placed over the skin. You may be asked to remain in bed for a short time following the procedure.

What are the risks of the procedure?

Implantation of the Coronary Sinus Reducer has not been associated with any significant risk; however the pre-assessment nurse will talk to you about the following minimal risks:

- Bleeding – from the vein used for access (neck). This will be monitored closely by the nursing staff and treated by applying pressure
- Reaction to the dye – this is rare and we use a minimal amount during this procedure

- Radiation exposure – The procedure is performed under x-ray guidance. You will be advised what to look out for if you have a high dose of radiation during your procedure, although this is not expected and is rare.

- Device dislodgement – In extremely rare cases the Reducer can dislodge from the coronary sinus vein and migrate to another part of the heart or even into the lung. The device may then be retrieved and this may extend your stay in hospital if it happens.

What happens after the procedure?

- You must have someone stay with you at home for the first 24 hours following the procedure if you are discharged the same day

- You must not drive for 24 hours following the procedure

- Your Cardiologist will advise you when it is safe to return to work

- You will be asked to take dual antiplatelet medication (Aspirin and Clopidogrel or Ticagrelor) for three months following the procedure. These are blood thinning medications required to keep the Reducer functioning well.

Further Information:

You will be able to ask questions during your pre-assessment appointment. However, if you have an urgent query, you may contact the Cardiology Department on 01305 255887.

If you use the internet and would like to see a short video about this procedure, please use this link: https://www.youtube.com/watch?v=LdK0CXdhgDo

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If you have feedback regarding the accuracy of the information contained in this leaflet, or if you would like a list of references used to develop this leaflet, please email pals@dchft.nhs.uk

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