



Treatment Procedure Information

Direct Current Cardioversion

Introduction

Heart rhythm is mainly controlled by the conduction system of the heart. Any abnormality in the conduction system may result in abnormal heart rhythm (arrhythmia). Arrhythmias with a fast heart rate can cause syncope, heart failure or even sudden cardiac death. It may be necessary to stop arrhythmias as soon as possible. Direct current cardioversion (DCC) converts arrhythmias with a fast heart rate to a normal rhythm by using an energy shock to stop all abnormal electrical activities. Depending on the situation, it may be performed as an elective or emergency procedure.



Source:
<https://cdn.storymd.com/optimized/RoelYQTaov/original.png>

DCC can quickly abolish arrhythmias and convert back to normal rhythm. Common indications are atrial fibrillation (AF), atrial flutter (AFL), supraventricular tachycardia (SVT) and ventricular tachycardia (VT). Depending on the type and duration of arrhythmia, the amount of energy used and successful rate may be different. If patient refuses this procedure, the outcome of arrhythmia may be detrimental or even fatal, especially in an emergency situation. Alternative treatments include anti-arrhythmic drugs and radio frequency ablation.

Outcomes

DCC is a method to restore an abnormal heart rhythm back to normal. It reduces the risk caused by abnormal heart rhythm.

Procedures

1. The invasive procedure will be performed at the bedside of a hospital ward or in the Heart Centre.
2. Electrodes will be adhered to the chest to monitor the heart rate and rhythm. Blood oxygen monitor through your finger will be set up.
3. Two electrode pads will be placed on your chest wall.
4. Mild sedatives and oxygen will be given.
5. An elective shock will be delivered through the pads. The energy level used depends on the situation. You may experience pain during the elective shock.
6. If the initial shock fails to abort the tachyarrhythmias, more shocks or escalation of energy level may be required.

Possible Risks & Complications

1. Transient arrhythmias
2. Transient low blood pressure
3. Painful skin burns
4. Stroke[#]

[#] DCC of atrial fibrillation and atrial flutter can trigger dislodgement of existing blood clots inside the heart, the stroke risk is high (5.3%). Use of a blood-thinning drug before and after DCC reduces the

risk to 0.8%. Trans-esophageal echocardiogram is recommended before the procedure to detect any existing blood clots in the heart.

** The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all procedures are carried out with utmost professionalism and care, complications can still occur. In the event of peripheral organ damage or post-operative haemorrhage or leakage, further operations may be required.

Pre-procedure Preparations

1. In an elective case, you may be admitted to the hospital for preliminary tests including electrocardiogram, chest X-ray and blood tests. You may undergo a trans-esophageal echocardiogram before DCC. DCC may also be performed during emergent situation.
2. The procedure 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 the procedure. (For elective case)
4. Medication for sedation / intravenous infusion may be prescribed.

Post-procedure Instructions

1. After the procedure, you will be under close monitoring in the ward for at least 4 hours.
2. Oral diet may be resumed when fully conscious.
3. Doctor will explain the result of DCC to you.
4. You may feel mild pain or discomfort in the chest for a few days after the procedure.
5. You may need to take blood thinner medication for 4 weeks.

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.

Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details
Our Hospital reserves the RIGHT to amend any information in this leaflet without prior notification