TheMKWay

NHS
Milton Keynes
University Hospital
NHS Foundation Trust

Patient Information

Cardioversion

This is a very important document. Please read and discuss this with relatives if necessary.

What is an Electrical Cardioversion?

Direct Current Cardioversion (DCCV) is a procedure for treating abnormal heart rhythms such as Atrial Fibrillation (AF) or Atrial Flutter (AFl). The aim is to restore the heart's normal regular rhythm by delivering a controlled electric shock to the heart. However this is **NOT** a permanent cure for arrhythmias and it may recur at some point following a DCCV.

The procedure only takes a few minutes and is carried out while you are asleep, under a deep sedation. A doctor or specially trained nurse will carry out the procedure in the presence of an anaesthetist.

What are the benefits of Cardioversion?

In AF/AFl the upper chambers of the heart quiver rather than pump and thus do not clear the blood out effectively. This can cause small blood clots to form inside the chambers, which increases the risk of having a stroke. AF/AFl gives rise to a sensation of heart racing (palpitation) and this can make you breathless and fatigued. A small proportion of persistent atrial arrhythmias are associated with an arrhythmia related impaired heart pump. Restoring normal sinus rhythm leads to recovery of heart function.

DCCV may restore normal heart rhythm. If it does, the symptoms may be relieved. If symptoms are relieved, the doctor may consider referring you for a procedure called catheter ablation for a more durable solution to arrhythmia recurrence. If symptoms are not relieved despite a normal heart rhythm, AF/AFl is not the cause of the symptoms and therefore, curing this arrhythmia will have no symptom benefit and management may aim at appropriate rate control.

The potential benefits of restoring normal heart rhythm include:

- Relief from the physical symptoms
- Improvement in exercise capacity
- Improvement in the hearts pumping efficiency

Restoring normal heart rhythm with DCCV will not achieve:

- A permanent cure for AF/AFl.
- Remove the need for blood thinners (anticoagulants).
- Remove the need for medications for heart rhythm control.

Once you and the doctor have decided that DCCV is needed, you will be given the following documents:

- This Patient Information Booklet for you to take home.
- Direct Oral Anti-coagulation (DOAC) **OR** Warfarin Monitoring Sheet for you to take home.

Preparation before the procedure is very important (please read in full)

Preparation for cardioversion includes taking anti-coagulation (blood thinning) medication such as Warfarin **OR** a 'DOAC' (Edoxaban, Apixaban, Rivaroxaban, Dabigatran).

It is important that anticoagulation is taken for at least 3 weeks prior to a DCCV including on the day of the procedure. After DCCV anticoagulation should not be interrupted for at least 2 months unless instructed by your doctor or specialist.

DOAC (no blood tests needed for monitoring its effect)

- You must take DOACs as prescribed without **ANY** missed doses for 4 consecutive weeks before and 6 weeks after DCCV.
- You will need to date and sign the Direct Oral Anti-Coagulation Monitoring Sheet provided every time you take the DOAC to confirm that every dose has been taken.
- **DCCV will have to be cancelled if you have missed any doses because of the increased risk of a stroke**
- You **MUST** bring the Direct Oral Anti-Coagulation Monitoring Sheet with you when you come for the DCCV. **DCCV will not be done without it**.

Warfarin

- It is essential that the blood clotting is at the right level for at least four weeks before and on the day of the procedure. This is to reduce the risk of blood clots dislodging and causing a stroke at the time of the cardioversion. Blood clotting is measured with a test called International Normalised Ratio (INR).

- You will need to have a weekly blood test to monitor your INR. Most patients taking Warfarin for AF/Afl will keep their INR between 2.0 – 3.0 but it is worth noting that for DCCV procedure we can safely accept results between 2.0 and 4.0. If you have mechanical prosthetic valve, maintaining your usual INR range would be adequate.

- DCCV will have to be cancelled if you have INR readings outside of the required range or if you don't have weekly INR readings because of the increased risk of a stroke.

Important Medications

- **Digoxin** If you are taking Digoxin tablets, please stop taking these **48 hours before the procedure**.

- **Beta-blockers** (e.g Bisoprolol, Atenolol, Carvedilol, Nebivolol, Metoprolol, Propranolol etc.) If you are taking Beta-blocker tablets, please continue them on the morning of the procedure. The dose and timing may be adjusted prior or post DCCV.

- **Anti-diabetic medications -** If you are on insulin take half of the morning dose on the day of the procedure. Do not take any **anti-diabetes tablets** on the morning of the procedure.

Take all other medicines as prescribed.

Pre-Cardioversion

A member of the Cardiology Team will be in touch to plan a pre-operative assessment. Your assessment may be in person or over the phone. A blood test may be required prior to DCCV. A pulse check and/or ECG may also be performed to confirm a DCCV is still required. (Occasionally adjustments in medications can restore normal sinus rhythm).

On the day of the Cardioversion

You must not eat or drink anything after midnight on the day of the DCCV. You may have a small amount of water with your morning usual medication. Please bring your regular medications with you.

Feel free to bring comfortable clothes such as dressing gown and slippers. You may want to bring a pair of shorts or comfortable trousers/skirt to wear. You will be asked to wear a hospital gown for the procedure.

A doctor or nurse specialist will see you to make sure you understand the procedure before asking you to sign a consent form. If you have any questions, this is the time to ask. The anaesthetist will see you and discuss the sedation.

During the Procedure

We will connect you to a cardiac monitor and position two sticky pads (defibrillator pads), one on the front of your chest and one on your back or left side. These are connected to a defibrillator machine.

A cannula (fine tube) will be inserted in a vein. This is used to deliver the sedation. You will then be asleep for 5-10 minutes.

While you are asleep a controlled shock will be delivered to your heart in an attempt to restore normal sinus rhythm.

Risks and Complications

Complications from cardioversion are rare. A common complication is transient skin redness at the site of the shock. In most cases this can be relieved with after-sun or aloe vera cream. You will be given advice if this is necessary.

Serious complications are very rare. Provided anti-coagulation (blood-thinning) medications have been taken appropriately in the period leading up to the procedure, the risk of stroke occurring at the time of the procedure is less than 0.5% (1 in 200).

Immediate success (the return of normal, regular rhythm) is achieved in more than 90% of patients, however the irregular heart rhythm may return. In a few people this happens within hours or days of the cardioversion, in others it may be weeks or months. After 12 months around 50-60% of people will remain in a normal heart rhythm.

Post-Cardioversion

Once fully awake you can eat or drink. We will provide light refreshment.

We will monitor your heart rate and blood pressure until we are satisfied that you are fit for discharge. You should be discharged within 3 hours after the procedure.

We will discuss the results of the procedure with you and advise if any of your medicines need to change.

We will write to you GP informing him/her about the results of the procedure and any changes to medications that you may need. **You will need to continue DOAC or Warfarin**.

For your own safety you **must** have a relative or friend to collect you and stay with you overnight. Due to the sedation, you will not be able to drive, operate machinery or sign legal documents a full 24 hrs.

A follow up appointment will be made for you with the doctor who referred you for the procedure. During that appointment, an ECG will be performed to assess whether you have reverted back to AF/Afl and whether your symptoms had improved when you were in normal regular rhythm. The Doctor will review your medications including the need for continued DOAC or Warfarin**.**

What to do if you feel unwell

If you have any chest pain, difficulty breathing or difficulty speaking or moving your face, arms or legs when you go home, please call an ambulance immediately and remember to inform them of your recent procedure.

Visit www.mkuh.nhs.uk for accessibility and translation services.

We encourage patients to be involved in their care by:

1. Being part of the conversation and shared decision making
2. Asking questions if something is not clear
3. Speaking up if you have concerns

Checks are there to protect you and you can be part of them. Behave with respect and kindness towards healthcare professionals.

We ask for information about you so that you can receive proper care and treatment. This information remains confidential and is stored securely by the Trust in accordance with the provisions of the Data Protection Act 2018/GDPR. Further guidance can be found within our privacy notice found on our Trust website: www.mkuh.nhs.uk

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