

## Cardioversion

Cardioversion is the conversion of the heart rhythm from Atrial Fibrillation (or Atrial Flutter) to the normal rhythm, known as sinus rhythm. Electrical cardioversion is also known as Direct Current Cardioversion (DCCV).

### Electrical Cardioversion

This may sound terrifying, but it is very simple in principle and it is a highly effective treatment in carefully chosen patients. The idea is to use an electric shock to activate the whole heart at once. This prevents the perpetuation of Atrial Fibrillation. After the shock the normal heart beat (sinus rhythm) will be able to emerge.

The cardioversion itself involves linking the patient to an ECG monitor which is connected to the cardioverter/defibrillator. An injection of short acting anaesthetic or powerful sedation is given. The patient is then asleep and/or totally unconcerned about the procedure.

### Risks Involved:

- Slow heart rhythm (bradycardia) – usually very transient and at most needing treatment with an intravenous medicine (Atropine) or a short period of pacing (electrical stimulation of the heart to initiate heart beats) for a short time.
- Fast heart rhythm (such as ventricular tachycardia) which may need a follow-up shock before the patient regains consciousness.
- Stroke, which is very unusual if the patient has been fully anticoagulated before the procedure.
- Skin burns or irritation from the electrodes (patches) - this is unusual with modern patch electrodes but can happen more frequently with older metal paddle electrodes.

- Early reversion of the normal rhythm back to Atrial Fibrillation – this may require a further shock (when still under anaesthetic/sedation).
- General anaesthetic risks – rare in normal sized people with no other medical problems.

Electrode patches or plates are positioned on the back and front of the chest, or on the upper right and lower left of the chest. The cardioverter/defibrillator is charged and set to deliver a shock simultaneously with the next heart beat. Often the first shock is successful but sometimes several shocks at increasing energy levels or with different electrode patch positions is needed to convert the rhythm.

The normal rhythm is restored in about 90% of patients, but a small proportion immediately return to Atrial Fibrillation. Over the next few days, 10% - 20% lapse back into the arrhythmia but this can be reduced when necessary by asking the patient to take an anti-arrhythmic drug.

After the procedure the patient is awake within a minute or so and, although groggy for a while, quickly regains full control and will be ready to go home after a few hours. The ECG is monitored until the patient is fully recovered, a 12-lead ECG is recorded and the patient is then allowed to get up and move around. A friend or partner should come to hospital with the patient as they cannot drive for 24 hours after the procedure and should be accompanied home. Someone should also stay with them on the night after the procedure in case they have a late complication.

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