

Practical Procedures: Emergency DC Cardioversion

Indications for DC cardioversion:

- Treatment of a tachyarrhythmia that has been present for less than 24 hours with an aim to revert to sinus rhythm.
- Treatment of a tachyarrhythmia that has been present for less than 24 hours when pharmacological measures have failed.
- Treatment of a tachyarrhythmia when the patient shows signs of decompensation:
 - Chest pain, confusion, hypotension or signs of heart failure

Equipment and staff required for DC cardioversion:

- An anaesthetist for safe sedation
- Defibrillator
- Cardiac monitor
- Defibrillator pads

N.B. In some hospital trusts cardioversion may be done under trans-oesophageal echo (TOE) guidance to ensure there is no right atrial thrombus. Liaise with the cardiology team if you think this is necessary.

Contraindications to DC cardioversion:

- No clear onset of the history of palpitations
- Previous paroxysms of tachyarrhythmia and not on anticoagulation
- Known atrial thrombus

Pre-procedure:

- Gain written consent from the patient
 - Risks of sedation; pain (musculoskeletal or minor skin injury); failure (approx. 20%); stroke (<1%); bradycardia
- Ensure the area where de-fibrillator pads are to be placed is shaved and dry and that jewellery is removed
- Ensure cardiac monitoring is in place
- Ensure anaesthetist is happy for you to proceed

Procedure for DC cardioversion:

- Place the defibrillator pads to ensure the current will pass across the heart.
 - This can be in the conventional position, antero-posterior, postero-lateral or bi axillary
- Sedation as necessary
- Turn on the defibrillator and press 'Sync'
- Check your trusts' policy on level of energy but a rough guide is 100J, 150J, 200J
- Charge the defibrillator ensuring everyone is clear including the oxygen
- Deliver a safe shock as per ALS guidelines
- Confirm presence of a pulse
- Check the monitor for sinus rhythm
 - Two further shocks (escalating energy) can be given if necessary.

Post-procedure:

- Continue cardiac monitoring
- Post-procedure observations
- Request cardiology review for further investigation, medication and follow up

In event of failure:

- Continue cardiac monitoring
- Contact the cardiology team for assistance
- Consider use of further anti-arrhythmic medication if appropriate

Top Tips for DC cardioversion:

- ALWAYS REMEMBER TO CHECK THAT SYNC IS ON PRIOR TO DELIVERING THE CARDIOVERSION SHOCK
 - After one shock some defibrillators will turn off the sync automatically.
- ALWAYS ENSURE THAT YOU ARE GOING TO DELIVER A SAFE SHOCK.
- Follow the consent procedure carefully. Many hospitals will have specific consent forms for DC cardioversion.
 - It is worth telling the patient the area where the pads are placed may have some burning or pain after the procedure