

Chapter 2

CARDIOVERSION AND DEFIBRILLATION

Defibrillation versus cardioversion

- Defibrillation
 - electricity delivered as soon as shock button is pushed
- Cardioversion
 - shock delivered during QRS complex
 - turn on sync mode

Indications

- Defibrillation
 - non-perfusing ventricular tachycardia and ventricular fibrillation
- Cardioversion (sync mode)
 - non-sinus tachydysrhythmias (e.g., atrial fibrillation / flutter, re-entrant supraventricular tachycardia, ventricular tachycardia with pulse)

Contraindications

- No absolute contraindications
- Patients with coronary artery disease may develop a post-shock bradycardia that may require transient pacing.

Obtaining consent

- No time to consent for defibrillation
- Inform patient of risks, benefits and alternatives
- Cardioversion is painful and requires procedural sedation
- Risk of stroke very low (< 0.1%) if patient is in atrial fibrillation < 48 hrs

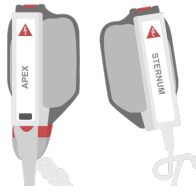
Complications

- Pain / burn at site of paddles / pads
- Muscle soreness in the chest

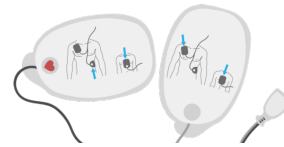
Tools



The device



Paddles



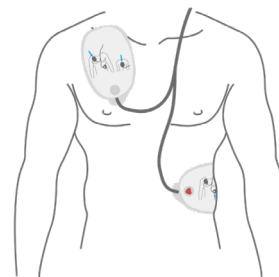
Pads

Sedative

- Etomidate 0.1 mg / kg

Procedure (atrial fibrillation)

1. Place IV
2. Attach pads
3. Turn on SYNC mode to switch to cardioversion
4. Select energy level (100-200 joules biphasic)
5. Administer sedative
6. Charge
7. Shock



Pad placement



Pearls

- Prolonged atrial fibrillation may be refractory to cardioversion
- Obese patients usually require higher energy
- With defibrillation—no time for sedation
- Don't be fooled by a wide complex hyperkalemia rhythm—do not shock!