Cardioversion - Booking and Management

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1. Overview

Purpose

Ensure correct steps are being followed to maintain patient and staff safety when participating in a Cardioversion Procedure.

Scope

Anaesthetists
Medical Registrar/House Surgeons (credentialed for the procedure)
Nurses in the Surgical Unit (SU)
Anaesthetic Technicians

Associated documents

The table below identifies associated documents.

Type	Title/Description
WDHB Policy	Theatre Acute Cases – Booking of (NSH), A-Z Procedures Manual. October 2016 http://staffnet/QualityDocs/Quality%20Documentation/O1%20Clinical%20Practices/%5BP%5D%20Theatre%20-%20Acute%20Cases%20-%20Booking%20Nov16.pdf#search="theatre acute cases"
	Cardiac Emergency Response, A-Z Procedures Manual. November 2005
	Discharge Criteria – PACU, Location Manual, November 2017 http://staffnet/QualityDocs/Quality%20Documentation/S5%20Surgical%20and%20Ambulatory/Perioperative/%5BP%5D%20PACU%20-%20Discharge%20Criteria%20Sep17.pdf#search="PACU discharge criteria"
Text	Braunwald, E. & Goldman, L. (2003) *Primary Cardiology*, 2nd ed., Saunders
	Fuster, V. , Alexander, W. & O'Rourke, R.A. (2004) *Hurst's The Heart*, 11th ed., chpt 29 & 37, The McGraw-Hill Companies Inc.

2. Management of Cardioversion Procedure

2.1 Frequency

As required

2.2 Procedure

- A procedure used to convert an abnormal heart rhythm back to a normal sinus rhythm by delivering a synchronised external electrical shock via the chest wall.
- The current is delivered at a predetermined point in the cardiac cycle (the peak of the R wave) so as to avoid discharging during the relative refractory stage of the cycle (the end of the T wave), as this may result in ventricular fibrillation.
- The principle of electrical shock is that it briefly interrupts the electrical activity of the heart, which allows the normal heart rhythm to be restored.

2.3 Indications

Arrhythmias - Atrial Fibrillation, Atrial Flutter, Atrial Tachycardia, Supraventricular Tachycardia

3. Booking Process

Step	Action
3.1 **At NSH**	**Patient Preparation – Medical Responsibilities:** **Acute Cases** • The booking Medical Officer (MO) calls the theatre co-ordinator on mobile 43535 The MO calls the Anaesthetic Co-ordinator on mobile 43540 to discuss the case. • The booking MO sends the Acute Booking Form to the SU fax 42493, ensuring all significant medical co-morbidities, infection risk (e.g. Hep status, MRSA, etc.), severity of haemodynamic compromise and name of Anaesthetist contacted are detailed • Ensure that the patients' most recent blood tests and results are available: electrolytes (K+, Mg, Creatinine etc.), coagulation profile (INR, APTT) and full blood count. **INR should be > 2 for the previous 4 weeks if on warfarin.** • **If patients are on Novel Oral Anticoagulants (NOACs), patient's compliance with medication has to be established by the referring Cardiology clinician.** • Written consent is obtained. **Elective Cases** Elective cases are booked by the cardiology booking clerk on the scheduled theatre sessions and given a preoperative questionnaire to fill in
3.2 **At WKH**	• The booking Medical Officer (MO) pages the CCN on 93 1485 to book an acute case • The MO calls the *obstetric anaesthetists on mobile via operator and* gives all the relevant details. • The booking MO sends the Acute Booking Form to the SU fax *46518* ensuring all significant medical co-morbidities, infection risk (e.g. Hep status, MRSA, etc.), severity of haemodynamic compromise and name of Anaesthetist contacted, are detailed. • Ensure that the patients' most recent blood tests and results are available: electrolytes (K+, Mg, Creatinine etc.), coagulation profile (INR, APTT) and full blood count. **INR should be > 2 for the previous 4 weeks** • Written consent is obtained. **Elective Cases** • Elective cases are booked by the *WKH booking clerk* on the scheduled theatre sessions. Cardioversion Procedure is done at North Shore.

4. Patient Preparation – Ward and Pre-Operative Admissions

4.1	**Patient Preparation – Ward and Pre-Operative Admissions Nursing responsibilities:** • Complete Pre-procedure checklist on the Peri-operative Form • Fasting status – as directed by the anaesthetic co-ordinator. Ensure that there are at least 10 patient identification labels in the notes. • Ensure ECG is taken on day of procedure • Await call from SU before transferring patient down to SU. Pre-Operative admissions staff hand patient over to Pre Op Care Nurse
	Pre Procedure: **Equipment Required:** • Defibrillator with a synchronisation option • Anaesthetic equipment and drugs as per ANZCA standards
	Special Considerations before the procedure: • All elective and acute cardioversions should be performed in the SU • An Anaesthetist, Medical Officer, Anaesthetic Technician or trained Anaesthetic Assistant and a Registered Nurse must be present. Medical Registrar performing the cardioversion must be credentialed for the procedure
	Pre Procedure - Anaesthetist: The patient is seen, assessed and written consent is obtained. **Pre Procedure – Medical Registrar**: • Patient is assessed including history, anticoagulation, investigations (i.e. TTE) and indication for cardioversion is confirmed. • Written consent is obtained • The Medical Registrar who consents the patient must be familiar with the cardioversion procedure. • They must explain why the procedure has been recommended, risks and benefits of the procedure, what other treatment options there are (if any exist), likely consequences if the patient decides not to undergo the procedure. • The details of the consent discussion should be recorded in the body of the patient notes by the Medical Registrar who is getting the consent.
	Pre Procedure - General: • Recording of baseline observations – BP, Pulse, RR, O2 saturation and heart rhythm. • A short acting general anaesthetic will be chosen by the Anaesthetist. • The defibrillation pads may be placed on patient before being anaesthetised • Pads should be placed at least 2cm away from ECG electrodes and 10cm away from a pacemaker generator. ***(Always follow manufacturer's recommendations and diagrams for pad placement.)*** • "Synchronise" button on defibrillator is on. • Any patches that are suspected to have metal backing should be removed from the patient prior to applying defibrillation pads • Print a small rhythm strip on the defibrillator before cardioversion is attempted. Attach patient label or enter patient details via the defibrillator machine. Cardiology registrar to confirm that patient remains in an arrhythmia **The Medical registrar will:** • Firmly ask all staff to stand clear

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	• Charge machine to the appropriate joule level. Ensure machine is on Synchronised • Ensure no one is in contact with any part of the bed or patient – Call **“Stand Clear”** Press the “**Shock”** button and hold the shock button until discharged
4.2	**Post Procedure:** • The procedure will be terminated either by a successful reversion to sinus rhythm or when the medical officer determines that cardioversion will not revert the rhythm. • Print rhythm strip at the time of cardioversion • The patient will be transferred to appropriate recovery area once the Anaesthetist decides it is safe to do so. • Continue to administer oxygen as per anaesthetist orders • Record vital signs and attach patient to ECG monitoring immediately post procedure and record at maximum of 10 minute intervals until stable. • Patient may experience mild skin burns – apply cold flannels to affected area to soothe skin and consult medical team. • The patient will remain in PACU 1 until fully conscious and meets PACU 1 discharge criteria. Patient will then be transferred to designated ward with discharge plans completed by the attending medical doctor. A post-cardioversion 12 lead ECG will be done by nursing staff and must be reviewed by a medical/cardiology registrar prior to discharge
4.3	**Documentation:** • Pre and post procedure ECG completed • Pre and post procedure rhythm strip – taken at time of cardioversion. • Pre and post procedure observations as above • Medical Officer will document in the clinical notes details of the cardioversion i.e. the number of shocks and joules used. The MO will also sight the post procedure 12 lead ECG and complete discharge papers. • Anaesthetist will document the Anaesthesia used, on the Anaesthetic Record, during the procedure. Nursing staff will document on the Anaesthesia Record all recovery details including the condition of the patient’s skin following the cardioversion.