Department of Anaesthesia and Acute Pain Medicine
St Vincent's Hospital Melbourne
CLINICAL RESOURCE FOR RESIDENTS IN PAC

Cardiothoracic Surgery Unit - Guideline for pre-anaesthetic work-up by surgical residents and interns for patients having thoracic surgery

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Introduction:

The Department of Anaesthesia and Acute Pain Medicine can provide important guidance on the perioperative care of your patients. In addition to providing anaesthesia, we have specific expertise in:

- assessing perioperative risk
- optimisation of medical conditions prior to surgery
- planning post-operative care including pain management

The Department of Anaesthesia and Acute Pain Medicine is able to offer the following services in order to help with appropriate pre-anaesthetic work-up and optimisation of your surgical patients:

- Review in PAC-Anaesthesia for elective surgical patients (often possible at short notice)
- Review on the ward for in-patients or urgent cases
- Contribution to and presentation at case-conferences or MDM's
- Phone advice where appropriate
- Review of notes and telehealth consult with patient (especially for country patients) to help work out the best course of action

Below is a guide for pre-anaesthetic work-up for patients having elective surgery. It should be used to help guide the following situations:

- When to refer to PAC-Anaesthesia
- When to notify the Thoracic Surgery Clinical Lead Anaesthetist (Dr Brian Cowie, Dr Des McGlade) or the Anaesthetist In-Charge (4471) if a patient is scheduled for surgery
- What investigations to order pre-operatively (that are in addition to the investigations required by the surgical unit)
    - Basic blood tests, including FBE, U&E and Gp & hold may be indicated depending on the nature of the procedure and patient factors. They are not considered here

    - All lung resection patients will have spirometry, and so spirometry for these patients is not considered here
- When to book an HDU/ICU bed

This is intended to be a guide only, and not all patients or operations will fit neatly in to this approach. The Anaesthetic Department is always available to offer advice and help.

Thoracic surgical patients are frequently from interstate (commonly Tasmania) and may have had investigations including spirometry and cardiac investigations at other Hospitals. Please try and collate relevant test results and letters and have them scanned in to MRO.

Referral Guidelines:

Low-risk and Intermediate-risk Operations:

- Mediastinoscopy for lymph node biopsy or biopsy of another asymptomatic mass
- Rigid and flexible bronchoscopy for non-obstructing airway lesions
- Simple VATS including pleurodesis, biopsy and wedge resection
- Limited procedures on the chest wall
- Straightforward VATS lobectomy

Patients having low-risk or intermediate-risk operations rarely need referral to PAC-Anaesthesia, complex pre-operative investigations or an HDU bed. Exceptions to this include:

- Patients with confirmed or likely significant cardiac disease, in particular moderate or severe aortic stenosis, moderate or severe pulmonary hypertension, or symptomatic cardiac failure or symptomatic or unstable ischaemic heart disease
- BMI > 50
- Moderate or severe OSA
- Patients unable to achieve 4 METS (eg. Climb a flight of stairs)
- Patients where the surgical pathology has significant haemodynamic or other effects – eg SVC obstruction, tracheal compression, anterior mediastinal mass

Patients who fit in to any of these categories should be treated as for “high-risk operations” below.

High-risk operations:

- Major lung resection including pneumonectomy
- Lung volume reduction surgery
- Thoracotomy

- Major procedures on the chest wall, especially combined cases involving orthopaedics or plastics
- Procedures for tamponade
- Other complex intrathoracic surgery, especially where the pathology involves major vessels or the heart

Patients having high-risk operations are more likely to need pre-anaesthetic investigation and/or review in PAC-Anaesthesia. They may also need an HDU bed booked. Below is a guide to investigations that may be appropriate (adapted from Up to Date).

Investigations:

- ECG
  - indicated only for patients > 60 years old and those with cardiac disease, peripheral vascular disease, cerebrovascular disease and/or vascular risk factors
- CXR
  - Not considered here as it usually forms part of the surgical work-up
- TTE
  - Indicated if the patient has had an abnormal TTE or confirmed cardiac disease (eg cardiac failure, pulmonary hypertension, aortic stenosis) and no TTE in the last 2 years, or clinical evidence of previously undiagnosed cardiac disease (eg a new murmur, new atrial fibrillation, signs of cardiac failure)
  - Consider if the patient has shortness of breath where the cause of the patient's limited functional capacity cannot simply be explained by pulmonary pathology alone.
  - Also indicated for pneumonectomy patients and other complex intrathoracic procedures
- Spirometry
  - Not considered here as it usually forms part of the surgical work-up
- Non-invasive cardiac stress tests (stress-echo or thallium stress test)
  - May be considered if the patient has symptoms suggestive of myocardial ischaemia, especially if pre-operative revascularisation (CABG or PCI) could be considered; may also be indicated if the patient cannot achieve 4 METS and is having intermediate or high risk surgery
  - If you are considering ordering a non-invasive cardiac stress test based on clinical suspicion then please also discuss these patients with the anaesthetist doing the list (via ext 4471) or the Thoracic Surgery Clinical Lead Anaesthetist. A perioperative physician or cardiologist will also need to be involved to ensure appropriate follow-up of the test result.

Other situations:

Other situations in which referral to PAC-Anaesthesi discussion with the anaesthetic department will be useful:

- Past-history of anaesthetic complication/difficulty especially those involving the airway
- Severe chronic pain or opiate tolerance
- Severe liver or renal disease
- Significant pre-operative malnutrition or anaemia

Mandatory referral to PAC-Anaesthesia:

Patients having the following operations should all be referred to PAC-Anaesthesia:

- Thymectomy for Myasthenia Gravis
- Pneumonectomy
- Major intrathoracic procedures involving surgeons from multiple units
- Radical surgery on the chest wall
- Anterior mediastinal mass
- Patients having robotic surgery at SVPH – all of these patients must come to PAC-Anaesthesia as per hospital protocol

Country patients / Interstate patients:

It is recognised that a significant proportion of Thoracic Surgery patients come from country areas or Tasmania. If they are not coming to this Hospital for a clinic visit ahead of time and a referral to PAC-Anaesthesia is required (see above), and you are planning on either day of surgery admission / Medihotel then the following should occur:

Written referral to be completed in MRO
Surgical and other relevant letters to be scanned in to MRO
Investigation results to be scanned in to MRO

ICU/HDU beds:

It is relatively uncommon to place thoracic surgical patients in HDU post-operatively.
Please discuss patients with specific issues with the anaesthetist and intensivist.
Situations where HDU or ICU may be indicated include:

- Significant lung resection in patients with limited pulmonary reserve
- Cases involving extensive dissection and potentially large blood loss

- Thoracotomy with epidural analgesia where there may be a need for invasive haemodynamic monitoring and low dose vasopressor infusions
- Thymectomy in patients with Myasthenia Gravis who have significant symptoms