BRONCHOSCOPY

Policy

- The decision for performing bronchoscopy should be made by a senior staff in ICU
- The procedure should be performed or supervised by a specialist in respiratory medicine, cardiothoracic surgery or anaesthesia/ICU.
- Whenever possible, informed consent should be obtained from patients.
- Please take note of infection control policies and personal protection. Check with the unit's infection control officer

Indications

- Diagnostic bronchoalveolar lavage (BAL)
- Fiberoptic intubation
- Bronchial toileting in persistent lung collapse
- Localization of site of bleeding in massive hemoptysis
- Foreign bodies
- Diagnosis of endobronchial lesions
- Verifying proper endotracheal tube/double lumen tube placement
- Used as adjunct airway management during percutaneous tracheostomy

Relative contraindications

1. Non-intubated patients
    a. Severe respiratory distress with RR > 30 per minute
    b. Unable to maintain PaO_2 > 8 kPa or SaO_2 > 90% despite supplemental oxygen
    c. Uncooperative patients
    d. Cardiovascular instability
2. Intubated patients
    a. Cardiovascular instability
    b. Unable to maintain PaO_2 > 8 kPa or SaO_2 > 90% FiO_2 of 1.0

Complications of bronchoscopy

- Hypoxaemia
- Hypoventilation
- Bronchospasm

- Pneumonia
- Pneumothorax (1-5% cases)
- Airway obstruction
- Cardiorespiratory arrest
- Arrhythmias
- Pulmonary oedema
- Vasovagal reactions
- Pulmonary haemorrhage (9%)
- Nausea and vomiting

Overall complication rate reported as ~0.1%

Procedure

- Endoscopist should wear protective clothing including plastic aprons, gown, N95 mask and glove
  Premed:
    - Topicalize the airway: Lignocaine, maximum dose: must not exceed 4 mg/kg
    - Sedation: eg midazolam or propofol if no contraindication
- Monitoring of oxygen saturation during procedure is mandatory
- For non-intubated patients, suggested to use endoscopy mask to increase oxygen supplement. Standby intubation equipment and drugs should be available by the bedside
- For intubated patients,
    - Connect swivel connector with perforated diaphragm for insertion of bronchoscope – this will allow continued ventilation and PEEP
    - Bite block
    - Consider muscle relaxant
    - Ventilator settings
        - Increase FiO_2 to 100%
        - Mandatory setting. Adjust tidal volume, RR, pressure limit to maintain adequate oxygenation. NB patient triggering unreliable due to air leak
- Post procedure CXR