EMERGENCY ACTION CARD

retrieve
Adult Critical Care Transfer Service

Bronchospasm

v1.1

Signs and symptoms include: expiratory wheeze, prolonged expiration, increased inflation pressures, desaturation, hypercapnia, upsloping capnograph trace, silent chest.

START: IMMEDIATELY NOTIFY DRIVER, STOP SAFELY

1. **Immediate actions**
   - Follow Key Basic Plan
2. **Airway**
   - Own airway: confirm patency, listen for noise
   - ETT/trache: confirm position/patency and exclude leak
   - Check capnography trace
3. **Breathing**
   - Check chest symmetry, breath sounds, RR, SpO_2, measured VT_{exp}
   - Absence of wheeze may indicate severe bronchospasm with no air movement
   - Review airway pressure using ventilator and/or Mapleson C system
   - Consider tracheal suction and aspirate nasogastric tube
   - Consider muscle relaxation / additional sedation to optimise ventilation
4. **Consider causes (Box B)**
5. **Treat bronchospasm (Box C) and underlying cause**
   - Optimise nebulised bronchodilators prior to IV agents to minimise VQ mismatch
6. **Use appropriate ventilation strategy (Box D)**
7. **Next steps**
   - Consider lung ultrasound
   - Consider arterial blood gas

Box A: CRITICAL CHANGES

- If problem worsens significantly, or a new problem arises, go back to START of Key Basic Plan
- If Transfer Practitioner or Transfer Doctor transfer, contact Remote Duty Consultant
- Consider contacting Leadership SPOC for support, if required

Box B: POTENTIAL CAUSES

- Lower airway obstruction: pulmonary oedema, asthma, COPD, anaphylaxis (→ EAC), malpositioned endotracheal tube
- Other causes of increased airway pressure (→ EAC)

Box C: DRUGS FOR BRONCHOSPASM (all safe in pregnancy)

• **Salbutamol**	• Nebuliser: 5mg • IV bolus: 250mcg diluted, slowly • IV infusion: 5-20mcg/min
• **Ipratropium**	• Nebuliser 0.5mg
• **Adrenaline**	• Nebuliser: 5ml of 1:1000 • IM: 500mcg (0.5ml 1:1,000) • Slow IV bolus: 10-100mcg (0.1 to 1ml 1:10,000)
• **Magnesium**	• 2g over 10 min
• **Ketamine**	• Bolus: 20mg (can repeat) • IV infusion: 0.5-1mg/kg/hr
• **Aminophylline**	• IV over 20 min: 5mg/kg (omit if already on theophylline) • IV infusion: 0.5mg/kg/hr
• **Hydrocortisone**	• 200 mg IV bolus

BOX D: VENTILATION STRATEGIES

- Increase expiratory time to allow complete expiration (reduce Ti and respiratory rate)
- Pressure control ventilation may be better
- Be alert to 'breath stacking' (you may need to manually decompress by disconnecting ventilator circuit – **consider AGP**)
- Permissive hypercapnia may be appropriate