

Management of patient with suspected bronchospasm during general anaesthesia

A

On suspecting bronchospasm

- Switch to 100% oxygen
- Ventilate by hand
- Stop stimulation / surgery
- Consider allergy / anaphylaxis; stop administration of suspected drugs / colloid / blood products

Difficulty with ventilation/falling SpO₂

CALL FOR HELP

B

Immediate management; prevent hypoxia & reverse bronchoconstriction

- Deepen anaesthesia **1**
- If ventilation through ETT difficult/impossible, check tube position and exclude blocked/misplaced tube **2**
- If necessary eliminate breathing circuit occlusion by using self-inflating bag
- In non-intubated patients exclude laryngospasm and consider aspiration
- DRUG THERAPY; see Box D **3**

Consider transfer to HDU / ICU

C

Secondary management, provide ongoing therapy and address underlying cause

- Optimise mechanical ventilation
- Reconsider allergy/anaphylaxis - expose and examine the patient, review medications
- If no improvement consider pulmonary oedema/pneumothorax/pulmonary embolus/foreign body
- Consider abandoning / aborting surgery
- Request & review chest X-ray
- Consider transfer to a critical care area for ongoing investigations and therapy

D

1st Line Drug Therapy

2nd Line Drug Therapy

Salbutamol

- Metered Dose Inhaler: 6-8 puffs repeated as necessary (using in-line adaptor/barrel of 60ml syringe with tubing or down ETT directly)
- Nebulised: 5mg (1ml 0.5%) repeated as necessary
- Intravenous: 250mcg slow IV then 5mcg.min⁻¹ up to 20mcg.min⁻¹

Ipratropium bromide: 0.5mg nebulised 6 hourly

Magnesium sulphate: 50mg.kg⁻¹ IV over 20min (max 2g)

Hydrocortisone: 200mg IV 6 hourly

Ketamine: Bolus 10-20mg. Infusion 1-3mg.kg⁻¹.h⁻¹

IN EXTREMIS: Epinephrine (Adrenaline)

Nebulised: 5mls 1:1000

Intravenous: 10mcg (0.1ml 1:10,000) to 100mcg (1ml 1:10,000) titrated to response

Follow up. If a serious allergic/anaphylactic reaction was suspected or identified the anaesthetist must ensure the patient is referred to a specialist allergy/immunology centre for further investigation. The patient, surgeon and general practitioner should also be informed.