

# ALGOTRITHM ON THE USE OF INHALED NITRIC OXIDE (INO) ON ST MICHAELS WARD

## Blood Gas in PICU to include MEtHB level PRE + Post iNO day 1 and weekly thereafter

## Pre procedure

- Check observations prior to inhalation and note and report deviations
- Methaemoglobin monitoring in place and functioning
- Clinical engineering present and Nitric Oxide set up complete
- Reviewed pre-commencement on day 1 by Respiratory consultant on call
- 1:2 nursing staff available for duration of treatment
- Antedote on the ward with dosage and IV sheet
- Urine Dipstick

## **During Procedure**

- Monitor T,P, R, BP and 02 sats every 15mins during inhalation
- Observe from outside the room observations on the monitor and report deviations
- Monitor Methaemoglobin throughout procedure

## Post Procedure

- Monitor observations 30minutes following procedure
- Enter the room 6 minutes following treatment completion
- Monitor Methaemoglobin x 10 episodes post procedure, once these have all returned to baseline, post MetHb monitoring can be discontinued

#### **EFFECTS OF NITRIC OXIDE INHALATION**

### **Side Effects**

- iNO combines with oxygen to produce NO2 which is a toxic gas
- Methemoglobin is formed when NO reacts with haemoglobin
- Methemoglobin is incapable of transporting oxygen
- Platelet dysfunction and bleeding problems are theoretical as iNO may affect platelet
- aggregation and thrombus formation

#### Cardiovascular

Common (1% to 10%): Hypotension

Post marketing reports: Bradycardia (following abrupt discontinuation of therapy)

Respiratory

Common (1% to 10%): Atelectasis

Post marketing reports: Hypoxia, dyspnoea, chest discomfort, dry throat

**Nervous system** 

Post marketing reports: Headache, dizziness

#### **More Common**

Blurred vision, confusion, <u>dizziness</u>, faintness, or lightheadedness when getting up suddenly from a lying or sitting position, sweating, unusual tiredness or weakness

**Symptoms of Overdose** Bluish-coloured lips, fingernails, or palms, dark urine, fever <u>headache</u>, pale skin, rapid heart rate, <u>sore throat</u>, unusual bleeding or bruising

**Treatment of overdose** Escalation algorithm for intervention and emergency action (cessation of treatment)??? required antidote methylene blue 1-2 mg/kg pre-prescribed in advance to treatment initiation. Termination of treatment was required if any safety related side-effects (arterial hypotension: systolic <99mmhg, MetHB >5%, Sa02 <88%, N02 >5ppm. (Yaacoby-Bianu *et al*, 2017)

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