

## Endotracheal Intubation RSI – 30.061

### OBJECTIVES:

- A. To facilitate orotracheal intubation
- B. To protect from increased ICP associated with direct laryngoscopy.
- C. To reduce the discomfort and trauma of intubation in conscious patients.

### INDICATIONS:

Patient meets indications previously noted in the orotracheal intubation protocol AND:

- A. Clenched jaw or active gag reflex.
- B. Combativeness threatens the airway, spinal cord stability, and/or transport safety.
- C. The patient is conscious.

### CONTRAINDICATIONS:

- A. Inability to ventilate adequately with a bag-valve mask in the event of failed intubation.

### PROCEDURE:

Prepare, position, and pre-oxygenate as outlined in the orotracheal intubation protocol. As part of preparing the patient for RSI, physiologically optimize the patient prior to RSI for a MAP > 70 mmHg, SpO<sub>2</sub> >95%, and aggressive treatment of any contributing underlying conditions. If patient continues to deteriorate, reconsider use of RSI.

- A. Induction agents. *Give only one.*
  - a. **Etomidate 0.3 mg/kg IV/IO** push. Single max dose of 30 mg.
  - b. **Ketamine 1 - 2 mg/kg IV/IO** push. Single max dose of 200 mg.
  - c. **Midazolam 0.1 mg/kg IV/IO** push. Single max dose of 10 mg.
- B. Paralytic agents. *Give only one.*
  - a. **Succinylcholine 1.5 mg/kg IV/IO.** See contraindications below.
  - b. **Rocuronium 1 - 1.2 mg/kg IV/IO.**
  - c. **Vecuronium 0.1 mg/kg IV/IO.**
- C. Adjuncts
  - a. **NO DESAT:** Increase nasal cannula oxygen to 15 LPM AFTER medications are given.
- D. Assess for apnea and jaw relaxation and gently intubate in a controlled but timely manner when patient becomes relaxed.
- E. Confirm ETT placement, reassess vitals and document as outlined in the orotracheal protocol.
- F. Continued sedation and analgesia are paramount.
  - a. **Midazolam 0.05 - 0.1 mg/kg IV/IO.** Single max dose of 5 mg.
  - b. **Ketamine 1 - 2 mg/kg IV/IO.**
  - c. **Fentanyl 1 - 2 mcg/kg IV/IO.**
- G. Continue paralysis as needed.
  - a. **Rocuronium 0.1 - 0.2 mg/kg IV/IO.**
  - b. **Vecuronium 0.1 mg/kg IV/IO.**

## SUCCINYLCHOLINE CONTRAINDICATIONS

- A. Crush or burn injuries more than 24 hours old (due to potential for hyperkalemia).
- B. Penetrating eye injuries (relative) due to increased intraocular pressure.
- C. Medical history including malignant hyperthermia, myasthenia gravis, muscular dystrophy, dialysis patient if potassium level is not known, or hyperkalemia.
- D. Hypersensitivity to the drug.

## COMMENTS

- A. Repeat boluses of Etomidate should NOT be used for maintenance of sedation after intubation secondary to potential adrenal suppression.
- B. Consider sedation utilizing Ketamine for those patients in whom difficult airway is suspected or those patients with suspected lower airway obstruction: i.e. status asthmaticus, COPD, or severe bronchiolitis.

## COMPLICATIONS

- A. Cardiac dysrhythmias.
- B. Hyperkalemia.
- C. Fasciculation's from paralysis.
- D. Vomiting and/or aspiration.
- E. Esophageal intubation – unrecognized esophageal intubation is a “never event”.
- F. Prolonged paralysis & malignant hyperthermia.
- G. Oral trauma.

## DOCUMENTATION

- A. As per Orotracheal Intubation protocol.
- B. RSI and sedation/analgesia medications given
- C. **Intubation Attempt: Anytime a laryngoscope blade is placed in the mouth and/or an ET tube passes the teeth or through the nares. (EXCEPTION: Laryngoscopy to facilitate removal of an upper airway obstruction only).**

## PEDIATRIC Rapid Sequence Intubation (RSI)

### PROCEDURE:

- A. Prepare, position and pre-oxygenate as outlined in endotracheal intubation protocol. As part of preparing the patient for RSI, physiologically optimize the patient prior to RSI for stable BP based on age, SpO<sub>2</sub> >95%, and aggressive treatment of any contributing underlying conditions. If patient continues to deteriorate, reconsider use of RSI.
- B. Adjuncts
  - a. **NO DESAT**: increase NC oxygen to 15 lpm AFTER medications are given
  - b. RSI for pediatrics < 1 year old, **Atropine 0.02 mg/kg IV/IO**. Consider for > 1 year old for vagally mediated bradycardia unresponsive to oxygen therapy.
- C. Induction agent *Give only one*
  - a. **Etomidate 0.3 mg/kg IV/IO**
  - b. **Ketamine 1 mg/kg IV/IO**
  - c. **Midazolam 0.1 mg/kg IV/IO. Single max dose of 5 mg.**
- D. Paralytic agent *Give only one*
  - a. **Succinylcholine 2 mg/kg IV/IO (see contraindications above)**
  - b. **Rocuronium 0.6 - 1.0 mg/kg IV/IO**
  - c. **Vecuronium 0.1 mg/kg IV/IO**
- E. Assess for apnea and jaw relaxation and gently intubate in a timely manner
- F. Confirm ETT placement, reassess vitals and document as outlined in the endotracheal intubation protocol.
- G. **Continued sedation and analgesia are paramount.** Continue paralysis PRN. Do not paralyze the patient without adequate sedation and pain control. Ensure that BP is within normal parameters for age prior to do dosing.
  - a. **Midazolam 0.1 mg/kg IV/IO Single max dose of 5 mg.**
  - b. **Ketamine 1 mg/kg IV/IO**
  - c. **Fentanyl 1.0 mcg/kg IV/IO**
- H. Continued paralysis prn.
  - a. **Rocuronium 0.1 – 0.2 mg/kg IV/IO**
  - b. **Vecuronium 0.05 – 0.1 mg/kg IV/IO**

### COMMENTS:

- a. Repeat boluses of **Etomidate** should **NOT** be used for maintenance of sedation after intubation due to potential adrenal suppression.
- b. Consider sedation utilizing **Ketamine** for those patients in whom a difficult airway is suspected (see endotracheal intubation protocol) or those patients with suspected lower airway obstruction (i.e. status asthmaticus, COPD, or sever bronchiolitis).

### POSSIBLE COMPLICATIONS:

- a. Cardiac dysrhythmias.
- b. Hyperkalemia.
- c. Fasciculation's from paralysis.
- d. Vomiting and/or aspiration.
- e. Esophageal intubation – unrecognized is a **“NEVER EVENT”**.
- f. Prolonged paralysis & malignant hyperthermia.
- g. Oral trauma.

### DOCUMENTATION:

- a. As per endotracheal Intubation protocol.
- b. RSI and sedation/analgesia medications given