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, SpO2 >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 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 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).

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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, SpO2 >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