

APPENDIX
RAPID SEQUENCE INDUCTION

INDICATIONS:

In instances of absolute, life-threatening airway compromise due to any condition listed below where conventional oral or nasal intubation is not (cannot be established without pharmacological assistance) reasonable. Paralytics may be used if standard pharmacological assisted intubation fails to relax patient reflexes allowing for intubation. Long acting paralytics may not be administered until airway is secure with documented respiratory stability.

The in-charge paramedic shall consider implementation of the rapid sequence induction standing order, in instances of:

- Absolute immediate, life-threatening airway compromise
- Status Epilepticus or Prolonged Seizure Activity associated with hypoxemia
- Closed head injury associated with muscle rigidity and severe hypoxemia
- Uncontrolled laryngospasms causing severe hypoxemia
- Previous intubation efforts are unsuccessful and the patient fits the criteria of absolute, life threatening airway compromise
 - Patient age greater than 12 yrs of age

Contraindications:

- Spontaneous breathing with adequate ventilation and a patent airway.
- Inadequate personnel or other resources to safely carry out the procedure.

Absolute Contraindications:

- Prior history or family history of malignant hyperthermia
- Intractable jaw spasms
- Generalized rigidity
- Increased body temperature
- Tachypnea/Tachycardia

Relative contraindications:

Relative contraindications become absolute if the injury is not acute; therefore the patient in whom the injury occurred greater than 24 hours ago and now presents with an emergent need for control of an airway should not be paralyzed with Rocuronium.

APPENDIX
RAPID SEQUENCE INDUCTION - cont'd

PROCEDURE:

1. Assemble appropriate equipment for intubation. Including drugs and assistants.
 - a. Assure properly functioning laryngoscope with appropriate blades.
 - b. Select appropriate endotracheal tube with syringe attached to cuff and stylet in place (for oral intubation).
 - c. Check cuffs for leaks
 - d. Prepare back-up tubes and laryngoscope
 - e. Prepare tape and cloth ties to secure tube
 - f. Assure properly functioning BVM
 - g. Assure suction is functional
 - h. Have all necessary drugs handy
 2. ABC's. Patient should be hyperventilated with 100% O₂ by BVM prior to performing Rapid Sequence Induction procedure.
 3. Determine glucose level and IV access using Lactated Ringer's.
 4. Monitor ECG and obtain vital signs every 5 minutes.
Monitor O₂ saturation do not let drop below 94%.
 5. Premedicate patient:
 - a. Administer **Lidocaine – 100 mg IVP bolus**
 - b. Administer **Versed – 0.1 mg/kg IVP bolus**
(Use less in patients with hypotension)
 - c. Administer **Etomidate – 0.2 mg/kg IV bolus, If Etomidate is not available, administer **Ketamine 1-2 mg/kg IVP over 30-60 seconds****
 6. Observe patient for muscle relaxation.
- NOTE: If appropriate sedation is achieved to allow intubation after the administration of Versed and Etomidate, DO NOT administer PARALYTICS.**
7. Apply cricoid pressure during intubation. (Sellick's maneuver)
 8. Attach the bag-valve device - ventilate with 100% oxygen. Verify tube placement by auscultation of lung sounds and epigastrium.

END TIDAL CO₂ monitoring is required.

APPENDIX
RAPID SEQUENCE INDUCTION - cont'd

9. Inflate cuff and secure endotracheal tube.
10. Ventilate with 100% oxygen at a rate of 8 to 10 breaths per minute with BVM to maintain 35 to 45 mmHg carbon dioxide return.
Patient should have visible chest rise with ventilation.
11. After 3 minutes post administration of Versed and Etomidate if the patient does not relax enough for oral intubation then proceed to Succinylcholine administration.

Administer: Succinylcholine 1 mg/kg IVP

12. **RAPID TRANSPORT** (Should transport by ground be chosen, minimum of two medics should accompany the patient in the back during transport while utilizing an alternate driver.)

13. Consider post intubation medications:
 - A. If patient becomes intolerant of ET tube then use in addition to sedation:
Administer: **Rocuronium 1 mg/kg IVP**
 - a. Onset time to intubation – under 2 minutes after injection
 - b. Recovery time 3-31 minutes
 - B. Consider **Versed - may be administered at 2 mg every 10 minutes PRN**
Titrate administration of additional doses of Versed to B/P at 110 systolic or greater.
 - B. Consider **Fentanyl 1-2 mcg/kg SLOW IVP**

Special Concerns:

Use in caution with patients with pulmonary hypertension, valvular heart disease, or significant hepatic disease. Burn patients may develop resistance to nondepolarizing neuromuscular blocking agent. Elderly clients may exhibit a slightly prolonged medical clinical duration of action.

Side Effects:

Arrhythmias, abnormal ECG, transient hypotension and hypertension, tachycardia, nausea and vomiting, asthma symptoms (including bronchospasm, wheezing, rhonchi, hiccup, rashes)

APPENDIX
RAPID SEQUENCE INDUCTION - cont'd

Precautions for Succinylcholine use:

- Significant body surface area burns greater than 24 hours old
- Crush injuries greater than 24 hours old
- Spinal cord injuries greater than 24 hours old
- Myasthenia gravis
- Muscular Dystrophy
- Guillian-Bare Syndrome
- History of pseudocholinesterase deficiency
- Patients with renal failure and those with elevated Potassium levels (if known)
- Glaucoma
- Hyperkalemia
- Parkinson's
- Penetrating eye trauma
- Concern that intubation might be unsuccessful due to:
 - Major facial or laryngeal trauma
 - Upper airway obstruction
 - Distorted facial or airway anatomy

Precautions for Paralytics:

Paralytics should be used with caution in patients, who are dependent on their own upper airway muscle tone or specific positioning to maintain the patency of their airway (e.g., cases of upper airway obstruction by abscess or abnormal anatomy). As paralysis occurs and these patients lose their ability to maintain an airway, BVM ventilation and intubation may not be possible because of obstructions or distorted anatomy.

In these patients, carefully titrated sedation and awake intubation may be more acceptable alternative in securing an airway.

Cormack-Lehane Scale

