

HEMS MCA
System Protocol
Urban Search and Rescue Medical Response Team
Rapid Sequence Intubation

Date: 10/1/2024

Section: 12-13

USAR Medical Specialist Paramedic Only

Rapid Sequence Intubation

Trauma patients with a GCS of 8 or less in which oral intubation (without RSI) is not possible or unsuccessful may have a definitive airway established using the Rapid Sequence Intubation (RSI) Procedure (see below). Certain medical conditions may also benefit from RSI. USAR Team Physician will be consulted prior to ALL RSI.

Indications

1. Trauma patients with a GCS of 8 or less.
2. Patient not able to maintain patent airway and supraglottic, and oral intubation are not possible.
3. Select medical patients.

Contraindications

1. Inadequate control of the patient, i.e. patient trapped in vehicle
2. Inability to perform potentially indicated airway options
 - a. Facial injury preventing BVM ventilation
 - b. Neck injury preventing cricothyrotomy
 - c. Patient height or age preventing supraglottic airway insertion
 - d. Allergy to any RSI medications
3. Inability to establish an IV
4. Inadequate personnel or equipment
Short transport (less than 5 – 8 minutes in a patient with good oxygenation and adequate airway)

Equipment Needed:

1. pulse oximetry
2. appropriate size ETT
3. stylet
4. syringe
5. laryngoscope
6. suction
7. BVM with oral and nasopharyngeal airways ready
8. Device for securing tube after placement
9. waveform capnography
10. RSI drug box
11. Supraglottic airway (King, iGel) and cricothyrotomy supplies

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Procedure

1. Assess patient and determine GCS
2. Ventilate the patient with 100% oxygen
3. Attempt to secure airway, per **Airway Management Protocol**.
4. If RSI is indicated, the USAR team physician has to be on scene and perform the procedure with an assist from the FEMA medical specialist paramedic.

Technique for Rapid Sequence Intubation: USAR team physician has to be on scene and doing the procedure with an assist from the FEMA medical specialist paramedic

1. Start an IV line. Verify that the IV line is functioning and not infiltrated.
2. Place the patient on a ECG monitor, pulse oximeter, and EtCO₂. Assign an individual to monitor these devices.
3. Oxygenate patient per the **Oxygen Administration Protocol**.
4. Assemble RSI medications
 - a. Atropine (if indicated)
 - b. Etomidate
 - c. Succinylcholine
5. Prepare RSI medications for administration.
6. Pre-medicate the patient with 1 mg of Atropine (if indicated)
7. Administer Sedation and Paralytic drugs:
 - a. Etomidate 0.2 - 0.3 mg/kg IVP for induction
 - b. Succinylcholine 1.0 - 1.5 mg/kg IVP
8. Observe for fasciculations (contraction/relaxation of fine muscle fibers).
 - a. Demonstrate adequate relaxation by opening the mouth.
9. Perform endotracheal intubation with inline neck stabilization, if indicated.
 - a. If unable to intubate within 30 seconds, stop and ventilate the patient with a bag-valve mask for 30-60 seconds.
 - b. If relaxation is inadequate, give a second dose of succinylcholine 1 to 1.5 mg/kg IVP. Prior to a second dose of succinylcholine assure the IV is adequate.
 - c. Observe for fasciculations and re-attempt intubation.
10. If unsuccessful after three attempts, ventilate the patient with a bag-valve mask.
11. Insert supraglottic airway per **Airway Management Protocol** The supraglottic airway should be considered early in patients for whom oral intubation is perceived to be technically difficult.
12. If unable to ventilate with BVM or supraglottic airway, perform cricothyrotomy per **Airway Management Protocol**
13. Confirm definitive airway placement (ET, supraglottic airway, Cricothyrotomy) with waveform capnography followed by conventional listening techniques.
 - a. Clearly document these confirmation techniques.
 - b. Maintain continuous CO₂ monitoring once established.
14. Secure endotracheal tube or supraglottic airway as indicated.

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15. Administer additional medications for pain, sedation and paralysis as needed post RSI

Pain

Fentanyl 1 mcg/kg IV; max single dose 100 mcg, may repeat one time. Total dose may not exceed 200 mcg.

Sedation

Ketamine 1.5 mg/kg IV titrated slowly to sedation (max dose 500 mcg)

Midazolam 1-5 mg (0.05 mg/kg) IV Titrated slowly; may repeat every 5 minutes to a maximum of 0.3 mg/kg.

Paralysis

Vecuronium. rate of 0.1 mg/kg/hr after an initial paralyzing bolus dose of 0.1 mg/kg, if necessary.

Always use sedation with maintenance paralysis.

16. If adverse effects occur see appropriate protocol.

Contact Medical Control for additional sedation or paralysis medications as needed

Consider administering sedation per **Patient Procedural Sedation Protocol** or administering additional medications for sedation and paralysis as needed post medical or trauma intubation:

Versed 0.05 mg/kg IV for sedation.

Vecuronium 0.1 – 0.15 mg/kg IV for maintenance paralysis.