End-Tidal CO2

Procedure

Douglas County KS EMS System **March 2022**

CO2 is a product of cellular metabolism which is removed from the body by ventilation, thus end-tidal air has a high pCO2. Inspired air has essentially no CO2. The end-tidal CO2 monitor is a device which measures pCO2 of inspired and expired air by either a simple color indicator or electronically.

Approved Provider: AEMT, Paramedic

Reference Protocols: Anaphylaxis, Breathing Difficulty, CAPE, Shock

Indications

- Assist in initial verification of endotracheal tube placement
- Continually monitor endotracheal tube placement
- To assist in ventilating the patient with suspected increased intracranial pressure
- CPAP use
- Moderate to severe respiratory distress
- To use as indicator of sepsis/ shock
- Asthma
- Anaphylaxis with airway involvement
- COPD/ emphysema

Contraindications

- **None**

Precautions

- Not effective for detecting hypocarbia, right mainstem or pharyngeal intubation.

Procedure

- Attach ETCO2 to port on monitor and let the device "fresh air calibrate" before attaching to airway stack/ patient
- Attach device to airway stack/ patient
- Ventilate patient with six breaths of moderate tidal volume
- Determine EtCO2
- Normal range 35-45 mm Hg
- Continue monitoring patient and EtCO2

Documentation

- Type of EtCO2 device used
- Reading of device
- Complications

Notes (Fig. 1, 2, & 3)

- The end tidal CO2 monitor is an adjunct used to help confirm correct endotracheal tube placement and to help monitor tube placement. It does not replace clinical evaluation.
- Sudden increase in ETCO2 in cardiac arrest can be an indication of ROSC.

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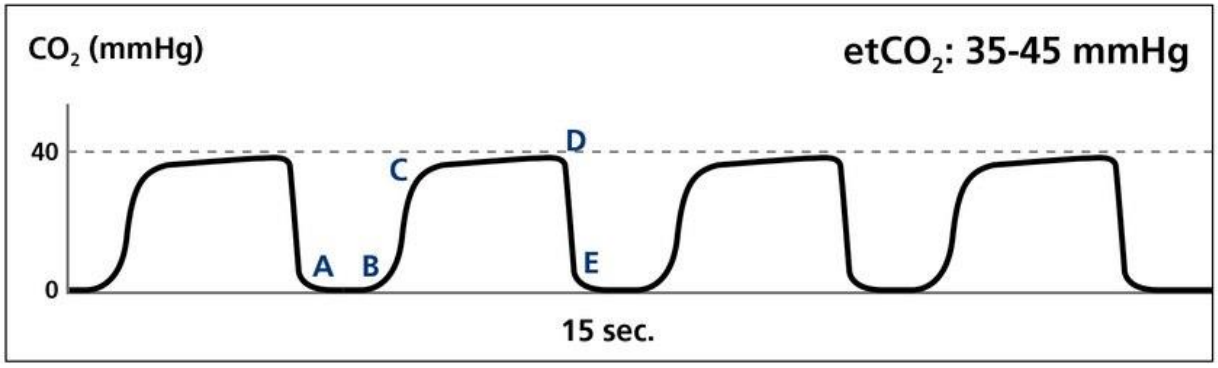
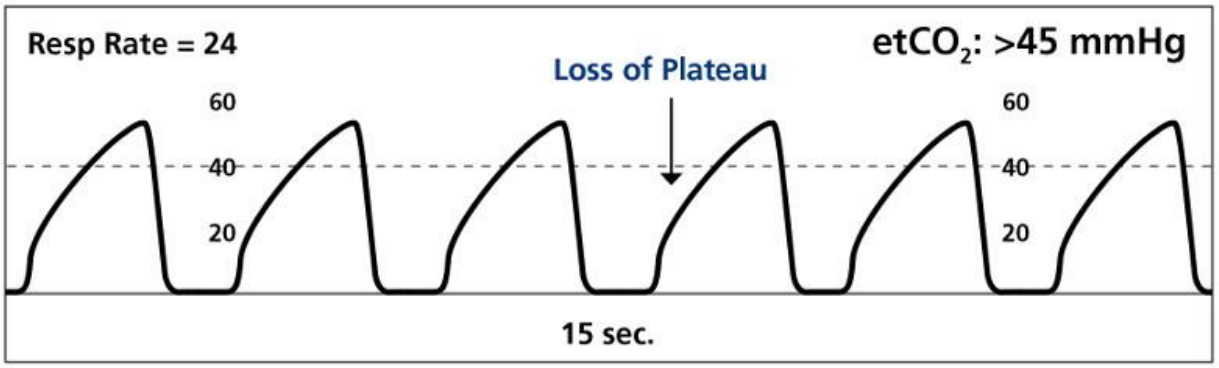
Fig. 1



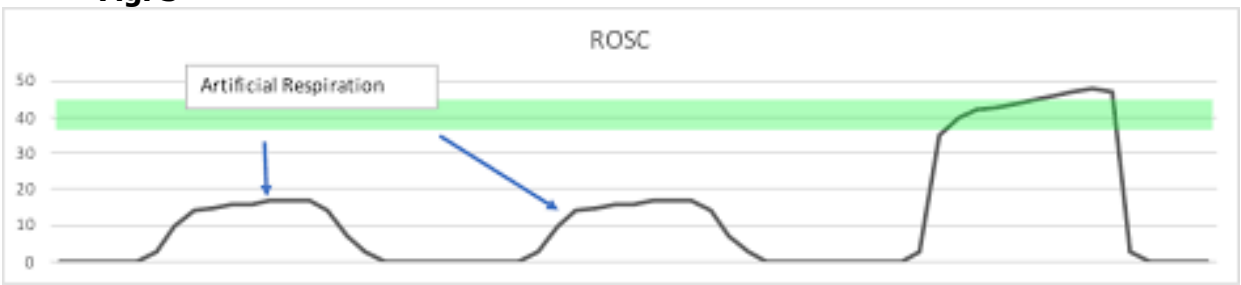
Normal ETCO2 waveform

Fig. 2



"Sharkfin" ETCO2 waveform indicating lower airway obstruction. (Asthma, COPD)

Fig. 3



Sudden increase in ETCO2 during cardiac arrest is a strong indication of ROSC