MISSION HOSPITALS

Airway - END TIDAL C02 Monitoring

BUNCOMBE
MADISON
YANCEY
EMS

This procedure is applicable for the use of an electronic End Tidal Carbon Dioxide (ETC02) monitoring device when available and time permits.

Clinical Indications:

ETC02 monitoring assists in providing a breath by breath trend of respirations and an early warning system for an immediate or impending respiratory crisis. ETC02 is useful in the following:

- As an adjunct to assure tracheal intubation.
- Intubated patients, may be used in place of a ETC02 detector.
- May use in non-intubated patients experiencing respiratory distress, hyper/hypoventilation, overdose and other causes of altered levels of consciousness.

Considerations:

Follow manufacture's guidelines for each specific monitoring device's set up connections, operations and parameters.

Procedure:

1. For non-intubated patients:
   - Inform patient of the procedure and instruct them to breath normally.
   - Oxygen flow to capnography mask should be set at 1-8 Lpm.
2. Set alarms appropriate to patient's clinical condition.
3. Observe capnography for waveform and readings throughout care of the patient.
4. Document the following:
   - Waveform strips
   - Initial ETC02
   - ETC02 with each set of vital signs
   - Arrival ETC02
   - Note which device being used, e.g.: ventilator, BVM or capnography mask.

Pearls:

1. ETC02 35-45mmHg is a normal value.
2. ETC02 <35mmHg = "Hyperventilation/Hypocapnia" ETC02 >45mmHg = "Hypoventilation/Hypercarbia".
3. Hyperventilation can be caused from multiple causes, e.g.: anxiety, bronchospasm, pulmonary embolus, cardiac arrest, decreased cardiac output, hypotension, hypothermia, pulmonary edema.
4. Hypoventilation can be caused from a decreased level of consciousness from medical or trauma etiologies, severe SHOB, increased cardiac output, depressed respirations and chronic hypercapnia.
5. ETC02 can monitor effective CPR compressions by monitoring cardiac output, high numbers are best.
6. During CPR watch for any spikes in ETC02, this could indicate a return of circulation.
7. Monitor patients that are intubated and paralyzed for a curve or indention in the waveform that may indicate they are starting to spontaneously breath and may require more medications.
8. Patients with suspected brain injury should keep ETC02 levels within normal ranges.
9. A "shark fin" pattern waveform indicates bronchoconstriction, e.g.: asthma, COPD, obstructed ETT.

Certification Requirements:

- EMT-P
- Initial training on C02 monitoring for intubated and non-intubated patients.