Capnometry and EMS: CME Quiz

1. Oxygenation is measured by:

    a. Pulse oximetry only
    b. Capnometry only
    c. Capnometry and capnography
    d. Both pulse oximetry and capnometry

2. As respiratory rates increase, in a healthy patient the end-tidal carbon dioxide value would be expected to:

    a. Increase as respiratory rate increases
    b. Decrease as respiratory rates decrease
    c. Respiratory rate has no effect on EtCO2
    d. Decrease as respiratory rates increase

3. With a patient having a significant bronchospastic presentation, what morphology would be expected of the Capnogram?

    a. Normal shape but shortened height due to tachypnea
    b. Elongated expiratory phase due to bronchospasm
    c. Normal shape but heightened due to hypoxia
    d. Rounded, due to changes of tidal volumes

4. What is the closest percentage probability of proper placement of an endotracheal tube, when using capnography with the presence of a square shaped capnogram with each ventilation?

    a. 75%
    b. 50%
    c. 90%
    d. 100%

5. During CPR, you have endotracheally intubated a patient, with confirmation by clinical assessment and capnography. The EtCO2 values during CPR were in the mid 20's. The ECG was interpreted as a sinus rhythm with a bundle branch block / PEA. During resuscitation efforts, the ECG remains unchanged, but the EtCO2 reading changes to high 40's. What is the most likely reason for this sudden change?

    a. Oxygen tank flow was changed from 15 lpm to 25 lpm
    b. ETT was originally kinked
    c. Return of spontaneous circulation
    d. Patient now has a tension pneumothorax from aggressive CPR

6. One cause for the loss of waveform on Capnogram might include:

    a. Hypoventilation
    b. Apnea
    c. Decreased perfusion
    d. Acidosis

7. The EtCO2 is measured at what point in the Capnogram?

    a. End of inspiration
    b. End of alveolar emptying
    c. Beginning of expiration
    d. Average of expiration of dead space gases

8. In a patient who is exhibiting signs and symptoms of diabetic ketoacidosis, what presentation would be consistent with the acidotic state in relation to capnography?

    a. Normal EtCO2 readings
    b. Lower than normal EtCO2 readings due to Kussmaul respirations
    c. Higher than normal EtCO2 readings
    d. Higher than normal EtCO2 readings due to Kussmaul respirations

9. You have responded to an elderly patient with COPD and CHF history. The patient presents in acute respiratory distress, and is difficult to appreciate either wheezing or crackles during auscultation due to diminished tidal volumes. Which of the following may be helpful in the differentiation of pulmonary pathologies for the present illness?

    a. Capnography is of no use, only lung sounds will differentiate COPD and Acute Pulmonary Edema
    b. In Acute Pulmonary Edema, the capnogram should show a shark-finned pattern, while the COPD patient's capnogram will be more squarely shaped
    c. In Acute Pulmonary Edema, the capnogram will be of normal shape, while the COPD capnogram will be more shark-finned in appearance
    d. Only the capnometry readings will be of value for this differentiation. The COPD patient will always be high due to CO2 trapping, and the Pulmonary Edema patient will always be low due to tachypnea

10. The combined use of pulse oximetry and capnometry can help determine the digression of a respiratory distress patient to one of respiratory failure when:

    a. EtCO2 values are low, SPO2 values are high
    b. EtCO2 values are high, SPO2 values are low
    c. EtCO2 values are high, SPO2 values are high
    d. EtCO2 values are not of value for this determination