

Northwest Community EMS System – Continuing Education – March 2014 – CE Credit Questions
Review of past, Future directions, and Miscellaneous EMS page 1 of 6

Name

Date

Employer

Note: To complete questions a copy of the CE handout is needed, and use of SOP's is encouraged.

Review the case/ePCR on handout pages 1 & 2.

1. Differential diagnosis: What are 3 possible/most likely causes for pts resp distress?

2. PMH - What does he have a PMH of (consider also pts medications)? List 6

3. Assessment: Airway & Breathing

- a. What were the pts lung sounds?
- b. In hypotensive pt, where should an O2 sat be obtained from?
- c. What are 3 causes of a low ETCO2?
- d. What are causes of a sharkfin waveform?
- e. What are 2 common causes of upper airway obstruction?
- f. How often should a critical pts ETCO2 be monitored & documented?
- g. Why is monitoring ETCO2 during BVM assisted ventilation important?
- h. Why is monitoring ETCO2 with ET/KLT advanced airways important?

4. Assessment: Circulation

- a. Why is determining a diastolic BP important?
 - i. To calculate MAP (mean arterial pressure)

- b. Why is MAP important?
 - i. Diastole is 2/3 of cardiac cycle
 - ii. Better indicator coronary & cerebral perfusion
 - iii. Coronary blood flow is determine by DBP
- c. What is a normal MAP?
 - i. 70-110
 - ii. $([DBP \times 2] + SBP) \text{ divided by } 3 = MAP$
- d. How else is perfusion assessed?

- e. How will decreased perfusion affect skin?

- f. Is this pt in shock?

- g. How can causes of shock be classified?
 - i. Volume (e.g., hypovolemic)
 - ii. Pump (e.g., cardiogenic)
 - iii. Container (e.g., neurogenic)
- h. Which type is pt most likely experiencing?

- i. What was the pts ECG rhythm?

- j. Did pt meet criteria for a 12L ECG? Why?

- k. Should ECG be monitored during ETI? Why?

- l. In cardiac arrest, how often should ECG be assessed?

5. Treatment – Airway & Breathing

- a. When placing a NP airway, does the size matter? Why?

- b. How are NPA's sized?

- c. At what rate should you ventilate a pt who is breathing 42-46 times a minute?

- d. How can that be accomplished?
- e. What are risks of assisting ventilation in a spontaneously breathing pt?
- f. How does assisted ventilation (BVM, BVETT, BVKLT) cause hypotension?
Causes increased intrathoracic pressure, which puts pressure on (R) atria, which decreases preload (venous return to heart), which decreases cardiac output.
Every positive-pressure breath (w/ bag-valve device) decreases cardiac output
- g. What effect will that have on a pts BP?
- h. What effect can midazolam have on BP?

← → ↺ www.uptodate.com/

Benzodiazepines — Benzodiazepines cause sedation and amnesia through their effects on the gamma amino butyric acid (GABA) receptor complex. [Midazolam](#) is the most rapidly acting, making it the benzodiazepine of choice for rapid sequence intubation (RSI) [\[41,42\]](#).

time to effect of approximately 30 to 60 seconds, and a duration of action of 15 to 30 minutes [\[41,42\]](#).

midazolam causes moderate hypotension, with an average drop in mean arterial blood pressure in healthy patients of 10 to 25 percent [\[41,42\]](#). This tendency to induce hypotension limits midazolam's usefulness in the setting of hypovolemia or intubating conditions. For patients in shock, we suggest [etomidate](#) or [ketamine](#) because of their superior hemodynamic profiles.

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ORIGINAL ARTICLE

Midazolam is more likely to cause hypotension than etomidate in emergency department rapid sequence intubation

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Emerg Med J 2004;21:700–702. doi: 10.1136/emj.2002.004143

See end of article for authors' affiliations

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Objective: To compare the haemodynamic effect of low dose midazolam and etomidate as induction agent in emergency department rapid sequence intubation.
Methods: A prospective observational study in two phases. In phase one, midazolam 2–4 mg was used as induction agent and in phase two, etomidate 0.2–0.3 mg/kg was used. The haemodynamic data were recorded before and after intubation for comparison. Changes in mean systolic blood pressure were analysed with SPSS software.
Results: A 10% decrease in mean systolic blood pressure was observed in the midazolam group ($p=0.001$) while there was no significant change in the etomidate group. Some 19.5% of patients had hypotension after being given midazolam while only 3.6% with etomidate ($p=0.002$). Patients older than 70 tended to have more hypotension episodes but the difference was not statistically significant.
Conclusions: Midazolam, even in low dose, was more likely than etomidate to cause significant hypotension when used as an induction agent for rapid sequence intubation. Etomidate is a better alternative.

6. Treatment: Circulation

- a. What is indicated for a 76 year old pt, with a PMH of HTN, and SBP of 84?
- b. When can HR be cause for hypotension?
- c. When is IVF indicated for a pt in cardiogenic shock?
- d. What treatment was indicated for this pts hypotension?
- e. Can dopamine be given IO?
- f. What is important to remember when giving dopamine IO?
- g. Should pts be moved, when performing CPR? Why?
- h. Should CPR be performed in a moving ambulance? Why?
- i. What are 2 most important factors assoc w/ good cardiac arrest outcome?
- j. What drug(s) are indicated for pulseless pts, when doing CPR?
- k. Why?
- l. What drug is indicated for pts in VF?
- m. Did pt receive either of these drugs?

Review the case/ePCR on handout pages 1 & 2.

7. What did this crew do well?

8. What could have been improved on?

Good outcome, discharged home.

Ketamine (handout p 3 & 4)

1	What class of drug is ketamine?	
2	List an FDA approved indication for ketamine?	
3	What is meant by dissociative anesthesia?	
4	What effect does ketamine have on bronchial smooth muscle – relaxation or constriction?	
5	What is the onset of action after IV ketamine?	
6	What is one contraindication to ketamine?	
7	Is ketamine more likely to cause bradycardia or tachycardia?	
8	What are common ketamine side effects related to the musculoskeletal (MSK) system?	
9	Describe an emergence reaction.	
10	How long can an emergence reaction last?	
11	How can emergence reaction be treated (without meds)?	
12	What drug can be used to treat an emergence reaction?	
13	How common is an emergence reaction after ketamine?	
14	What is a respiratory adverse effect of ketamine?	
15	How soon does ketamine cause hypertension?	
16	How long should HTN due to ketamine last?	
17	What effect can ketamine have on oral secretions?	
18	What drug is ketamine incompatible with?	
19	How fast/slow should ketamine be given?	
20	What 2 things can happen if ketamine is given too fast?	

ECG's (handout p 5)

Interpret the ECG's	5
1	6
2	7 <i>Disregard – artifact & poor copy</i>
3	8
4	9

12-Lead ECG (handout p 6)

1. Should a Cardiac/STEMI alert be called for this pt?
2. Does this pt have a new or old MI?

New EMS Science (handout p 8-20)

#	Select 2 abstracts that interest you and summarize the findings, using your own words, in 2 sentences.