Northwest Community EMS System

Continuing Education Class Credit Questions for August 2014
Medical Shock

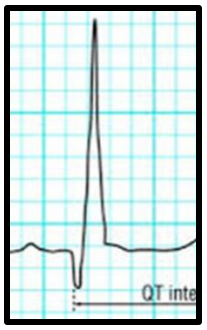
Name (PRINT):	Date submitted:
Affiliation:	Rating: [ ] Complete [ ] Incomplete

Indicate whether the following Q waves are pathologic or non-pathologic.

1. _____

2. _____

3. _____



4. _____

5. Explain the condition/problem associated with (1) oxygen and nutrient delivery to the cells and (2) waste products (CO_2 and acids) removal in shock.

_____

_____

6. Give 2 reasons why anaerobic metabolism is undesirable in comparison to aerobic metabolism.

_____

_____

7. What is mean arterial pressure (MAP) a representation of?

_____

8. How is “normal” BP maintained by the sympathetic nervous system?

_____

9. Explain how this action ultimately reduces perfusion to the cells.

_____

10. What change is seen in (1) diastolic BP and in (2) pulse pressure when cardiac output is reduced and the vessels constrict?

_____

_____

11. What does the Journal of Trauma article say regarding automated BP determinations?

12. Explain how acidosis/excess CO_2 contributes to low $ETCO_2$ readings in the patient w/ shock.

13. List 4 assessment findings for pts with compensated shock that are representative of compensatory mechanisms.

14. Describe assessment findings w/ respect to the following in the patient w/ decompensated shock.

Systolic BP:

Skin:

Degree of hypoxia:

Peripheral pulses:

Mental status:

15. Describe assessment findings w/ respect to the following in the pt w/ irreversible shock.

Blood pressure:

Degree of hypoxia:

Responsiveness:

Heart rate:

16. If you administer dopamine or norepinephrine to this patient, how will the pt respond?

Read the following scenario. Then answer questions 17 through 19.

EMS is called for a pt with SOB and severe weakness. Upon arrival, an older male pt looks up at you from an upright position in his recliner. A home health aide meets you at the door and says she found the pt like this when she arrived 30 min. ago. She only comes twice each week and has not seen the pt for 3 days.	
General impression	Weak- and ill-appearing older adult pt w/ mild resp distress
LOC	Awake; appears tired; eyes are open when you enter the room; A/AVPU
Airway	Patent, maintained by pt.
Breathing	Breathing spontaneously
	Gen rate: faster than "normal"
	WOB: mild-mod labored; no retractions/acces. muscle use
	SpO_2: 90% on room air
	$ETCO_2$: square; 29-31
	Lung sounds: crackles in bases bilat.
Circulation	Pulses: regular, slow and weak radials and carotids
	Skin: cool, moist, pale
	ECG: 2° II heart block, rate of 32
	12 Lead: no acute changes; ant MI age undetermined; non-specific ST and T wave changes
	Neck veins: flat in upright position (pt refuses to lie down to allow EMS to asses at 30-45°)
	Heart sounds: clear
Disability	GCS 14 (normal for pt – aide states pt has confusion from time to time)
	Glucose: 98
Expose:	No signs of injury, retractions/acces. muscle use; =l bilat chest excursions; no pedal edema
Vital Signs	BP 84/?48 (difficult to hear); HR 32; RR 30
	MAP 60, Pulse pressure 36
SAMPLE	S: Pt says he "has not felt very good for a couple of days" – cannot be specific about how many days. Says he is sitting in the chair because he cannot breathe when he lies down.
	Allergies: tetanus
	Meds: Captopril (new 1 wk ago-12 doses gone); labetolol (filled 3 wks ago – bottle empty); isordil (filled 3 wks ago – 1 wk supply left); ASA. Pt states "the new medicine isn't helping".
	PMH: CHF; MI X 2; HTN
	Last PO: yesterday sometime
	Events: saw doctor 1 wk ago for leg swelling and SOB; new medicine "not helping" per pt
S&S: OPQST & pain	OPQRST as above; no pain

17. What kind of shock is this?

_____

18. List 3 findings by which you differentiated the above shock from other shocks.

_____

_____

_____

19. With regards to treating this pt's hypotension and restoring adequate perfusion, what care is indicated for this pt according to NWC EMSS 2014 SOP?

_____

20. Describe type II MI with regards to:

Area of myocardium involved: _____

Evidence of dysfunction of pumping and conductive tissues: _____

21. What is different about findings for Type II MI compared to MI due to a clot or plaque rupture?

ECG findings: _____

Presence of chest pain / equivalents: _____

22. Choose 1 etiology (of 6) for Type II MI, & explain how it causes diffuse myocardial hypoperfusion.

_____

_____

_____

Read the following scenario. Then answer questions 23 – 26.

EMS is enroute w/ an adult pt with COPD exacerbation who required intubation. EMS found the pt to be in severe distress w/ agonal resps w/ decr mental status. EMS had great difficulty maintaining the airway w/ adjuncts and positioning and it was not possible to adequately oxygenate & ventilate, so the pt was intubated. While ventilating w/ BVM and in-line neb in progress, EMS notes increasing difficulty ventilating the pt.	
General impression	Sedated pt receiving ventilatory support via BVM/advanced airway
LOC	Sedated
Airway	Open, patent
Breathing	PPV @ 6-8 / min., via ETT/BVM – no spontaneous resps
	Increasing difficulty delivering breaths
	SpO_2: was 92% up from 85%; has fallen to 90% w/ bagging difficulty
	Breath sounds: previously diminished w/ wheezes bilat; now cannot be heard on Rt
	$ETCO_2$: decreased size over past 30 sec; 25
Circulation	Pulse: barely palpable radial
	Skin color: a little dusky
	Neck veins: + JVD
	Heart sounds: muffled
	ECG: ST 138
	Cap refill delayed
Disability	Pupils: 4 mm, equal; sluggish
	Glucose: 140
Expose:	? possibly unequal movement of chest
Vital Signs	BP 80/60, HR 138, RR 8 assisted, T 98
SAMPLE	S&S: difficulty w/ providing PPV; hypotensive/tachycardic/hypoxic/unequal breath sounds
	Allergies: unknown
	Meds: Seravent; albuterol; daughter states there should be others but cannot find
	PMH: HTN; COPD; obese; smoker
	Last po: unknown
	Events: unknown until found by family member this evening prior to calling 911
S&S: OPQST & pain	Unknown / NA

23. What kind of shock is this?

_____

24. What condition is this pt experiencing that is causing his shock?

_____

25. List 3 findings by which you differentiated the above shock from other shocks.

(1) _____

(2) _____

(3) _____

26. With regards to treating this pt's hypotension and restoring adequate perfusion, what care is indicated for this pt according to NWC EMSS 2014 SOP?

_____

Read the following scenario. Then answer questions 27 – 30.

EMS is called for a 69 y/o man with weakness, lightheadedness and SOB since last night. His wife leads you to the bedroom where you find the pt in bed, supported by 2 pillows. He does not respond to your presence, and he appears to be in mod resp distress. The spouse tells you the pt was released from the hospital yesterday-it had something to do with his heartbeat.	
General impression	Ill-appearing older male, possibly decreased LOC
LOC	Responds to repeated verbal and tactile stimuli – opens eyes, looks in your direction
Airway	Open, patent
Breathing	+ spontaneous ventilations
	Gen rate: fast
	WOB: mod labored. No retractions, no acces muscle use, no abnormal sounds
	SpO_2: 90% on RA
	Breath sounds: sl diminished, clear bilat.
	$ETCO_2$: square, 29
Circulation	Pulse: barely palpable radial
	Skin color: cool and pale
	Neck veins: + JVD
	Heart sounds: muffled
	ECG: ST 130
	12L: ST w/ non-specific ST and T wave changes
Disability	Pupils: 4 mm, equal; sluggish
	Glucose: 110
Expose:	Recent incision in upper left chest, w/ appearance of matchbox-sized device implanted; edges well-approximated, no redness or drainage; steri strips intact
Vital Signs	BP 88/68, HR 130, RR 28, T 97.8
SAMPLE	S&S: ↓ responsiveness; weakness/lightheadedness/SOB for 12 hrs; BP low
	Allergies: Keflex
	Meds: spouse provides zip lock with the following: lisinopril, Plavix, Lipitor
	PMH: HTN; high cholesterol; "mild heart attack"; lung cancer last 5 mo. ago treated w/ chemo and radiation
	Last po: soup at dinner last night
	Events: as told by spouse
S&S: OPQST & pain	O: last evening; P: worse with activity; Q: N/A; S: unable to rate; T: constant since last eve but worsening

27. What kind of shock is this?

_____

28. What condition is this pt experiencing that is causing his shock?

_____

29. List 3 findings by which you differentiated the above shock from other shocks. Circle the finding that differentiates this condition from tension pneumothorax.

(1) _____

(2) _____

(3) _____

(4) _____

30. With regards to treating this pt's hypotension and restoring adequate perfusion, what care is indicated for this pt according to NWC EMSS 2014 SOP?

_____

Read the following scenario. Then answer questions 31 – 34.

EMS is called to a home for a man who is too weak to get out of bed this morning. When you arrive, you find the pt lying in bed. He appears weak and tired, and you notice a congested – sounding cough as you are approaching. The pt looks up at you as you enter the room.	
General impression	Ill-appearing older adult pt w/ mild resp distress and congested cough
LOC	Awake; appears sl. anxious; eyes are open when you enter the room; A/AVPU; GCS 15
Airway	Patent, maintained by pt.
Breathing	Breathing spontaneously
	Gen rate: faster than "normal"
	WOB: deep and mildly labored; no retractions/acces. muscle use
	SpO_2: 90-91% on room air
	$ETCO_2$: square; 29-31
	Lung sounds: clear on Rt, crackles over Lt base
	Occas. congested cough productive of thick whitish-yellow sputum
Circulation	Pulses: Fast; strong radial pulses; regular
	Skin: warm, moist, sl. flushed
	ECG: sinus tach, 114
	12 Lead: inferior MI, age undetermined; no acute changes (no STE, STD, etc.)
	Neck veins: flat
	Heart sounds: clear
Disability	GCS 15
	Glucose: 128
Expose:	No signs of injury; no retractions/acces. muscle use; equal bilat chest excursions
Vital Signs	BP 100/78, HR 114, RR 28
	MAP 85
	Pulse pressure 22
SAMPLE	S: weakness & nausea since late yesterday; prod cough for ~ 4 days; temp of 100.4 last night – Tylenol relieved; weak to the point where he cannot get up out of bed this am
	Allergies: none
	Meds: Lasix; Lisinopril; Z-pak (taking for 2 days)
	PMH: MI 2 wks ago; scheduled for CABG next week; HF; HTN; dx'd w/ "a little bit of bronchitis" 2 days ago
	Last PO: soup last evening
	Events: saw doctor 2 days ago for cough that is occas productive of thick whitish yellow mucus; has been taking antibiotics as ordered for past 2 days;
S&S: OPQST & pain	OPQRST as above; no pain

31. What condition (diagnosis), related to shock, is this pt experiencing? Be specific as to the severity of this illness.

_____

32. List 3 assessment and or history/events findings by which you arrived at your answer.

_____

_____

_____

33. Why is this pt not hypotensive?

_____

34. What action is indicated, according to NWC EMSS 2014 SOP?

_____

Read the following scenario. Then answer questions 35 - 37.

EMS is called for a wellness check. Law enforcement has made entry at the request of the resident's supervisor at work. The resident/pt did not show up for work today (Monday), did not call in sick, and is not answering her phone. She was at work on Friday and left an hour early for a doctor appointment. She is a single female who lives alone. Upon entry, EMS finds the pt lying on the floor, unresponsive to verbal stimuli. She moans to and localizes painful stimuli. There are no signs of violence or substance abuse.	
General impression	Female found on the floor, responsive to painful stimuli
LOC	P/AVPU; GCS 1 + 2 + 5 = 8
Airway	Patent, maintained by pt.
Breathing	Breathing spontaneously
	Gen rate: rapid
	WOB: unlabored, deep
	SpO_2: 92% on room air
	$ETCO_2$: square; 22
	Lung sounds: clear bilat.
Circulation	Pulses: radials weak/thread and rapid
	Skin: flushed, warm, dry
	ECG: ST 148
	12 Lead: not done
	Neck veins: flat
	Heart sounds: clear
Disability	GCS 8 (see above)
	Glucose: 458
	Pupils 7 mm, sluggish
Expose:	No signs of injury
	Skin turgor: poor (+ tenting); mucous membranes dry
Vital Signs	BP 78/44
	MAP 55, Pulse pressure 34
SAMPLE	S: Unknown
	Allergies: unknown
	Meds: right before departure for hospital, crew member finds a already-used glucose meter and prescriptions for insulin and syringes, and info on insulin.
	PMH: unknown – assume DM – unknown type 1 or 2
	Last PO: unknown
	Events: unknown w/ exception of that provided by supervisor
S&S: OPQST & pain	Unknown

35. What condition is this pt experiencing, that is causing her shock?

_____

36. What type of shock is this?

_____

37. With regards to treating this pt's hypotension and restoring adequate perfusion, what care is indicated for this pt according to NWC EMSS 2014 SOP?

_____

38. According to NWC EMSS SOP, when caring for the pt w/ shock, what are three additional hemodynamic indicators / values to trend and monitor, *in addition to BP, HR and RR*?

_____

_____

_____

39. Explain the procedure for identification of humeral IO insertion site, including pt positioning.

_____

_____

_____

40. List one benefit of the humeral IO site compared to the tibial site.

_____

_____