Fall 2014

Questions

Name:_____ Oasis:_____

Mark: ___ / 35

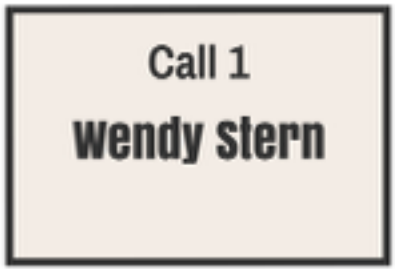
Professional Development:

Pregnancy Related Emergencies

Hopefully you have completed the reading package relating to pregnancy related emergencies now. Maybe you haven't, maybe you want to just answer the questions and get them over with, feeling confident in your knowledge as it relates to pregnancies, that is OK too.

Our goal with this package is to make you confident in dealing with various pregnancy related emergencies and ensure that you have accurate, up-to-date knowledge to allow you to deal with these emergencies with utmost confidence and competence. If you are already confident, great, this question package will allow you to confirm that you have the knowledge you require, and if you find something that you are not sure of, you can always check the reading package to find the information you need.

You are about to attend to five calls, each involving a potential pregnancy related emergency. Your knowledge and skill may make the difference between the joy and elation of a healthy newborn versus a devastating tragedy. Are you ready for the challenge? Do you hear that? Thats the base pager…time to go…ready or not!



When you arrive at Wendy's small one-bedroom apartment on the outskirts of town the shift is nearing it's end. You have two forms to finish before you can call it a day and the ER that you just left was a complete zoo. Wendy opens the door and then walks, bent over, holding her abdomen, back to the couch before you have a chance to even lower the stretcher. You follow her into the dark apartment.

1) The call information from CACC was "A 25 year old female, 27 weeks pregnant, complaining of abdominal pain." Given this information Wendy is in the:

a. first trimester
b. second trimester
c. third trimester

2) Which of the following is the most likely **cause of Wendy's pain:**

a. placental abruption
b. ectopic pregnancy
c. placenta previa
d. placenta accreta

3) You confirm that Wendy's pregnancy is in the 27th week as reported by CACC. While your partner is preparing the oxygen and obtaining vital signs you begin your questioning and physical assessments simultaneously. Based on what you know you would expect the location of the top of the uterus to be:

a. closer to the xyphoid than the umbilicus
b. at the umbilicus
c. closer to the umbilicus than the xyphoid
d. halfway between the xyphoid and umbilicus

4) While questioning Wendy, you watch through the corner of your eye and you are relieved to see that you partner is electing to administer the oxygen at:

___ litres per minute, using a _____

5) You palpate the uterus and discover that it feels very hard. Wendy winces every time you touch it so you discontinue your palpation. You feel confident that you have established your working assessment now. You ask Wendy if there has been any vaginal bleeding which she says there has not been. You now believe that you are dealing with:

a. a "low lying" placenta
b. a ruptured ectopic pregnancy
c. gestational trophoblastic disease
d. a "concealed" placental abruption

I hope you are right. The hospital trusts you, you gave them the update en-route to the hospital. We can only hope you didn't lead them astray.

Call 2
Lisa Dell'Abate

Sometimes details of a call seems to have very strange coincidences. How many times have you attended to two calls on the same street on the same shift only to realize that you have never done a call on that street before? Its eerie. This time you reacted because the call location that was announced over the base pager happened to be the same bank with which you were just online doing some banking. Weird.

When you arrive you are lead by the manager to a small office where a skinny, young looking, patient sits with a wet cloth placed over her forehead. She looks very pale. You guess her age to be around nineteen (you were close, you find out later she was 20).

The story is that Lisa was in line at the ATM when she suddenly felt faint and "passed out". She regained consciousness almost immediately and did not suffer any injuries in her slow fall to the floor. Now she feels nauseous, light headed, and has a sharp pain in her abdomen.

You have long ago given up on getting an honest answer to the "Is there any chance you could be pregnant?" question so you go straight to the more effective "When did you have your period last?". The way she begins her answer with "Uhhm…" tells you all you need to know. "….It is late…by almost two weeks." further confirms your suspicion.

6) Which of the following is the most likely **cause of Lisa's pain:**

a. placental abruption
b. ectopic pregnancy
c. placenta previa
d. placenta accreta

7) Which of the following details would make your initial working assessment even stronger?

a. Lisa was recently diagnosed with asthma and prescribed ventolin.
b. Lisa has had crampy abdominal pain since yesterday.
c. Lisa had a previous pregnancy that resulted in a spontaneous abortion at 11 weeks.
d. Lisa had a UTI the previous month and was given antibiotics for it

The vital signs reported by your partner are as follows:

Heart rate 98 strong, regular

Respiratory rate 20 normal, regular

Blood pressure 104/70

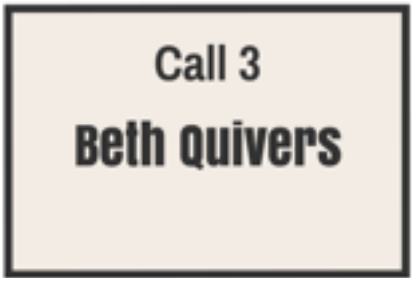
Skin pale, cool, diaphoretic

8) Lisa recalls when she was assessed last month for her UTI. Her blood pressure had been 126/82, in fact her doctor had remarked how it was "text book normal". You consider this for a moment and decide:

a. Lisa's vital signs are very concerning, you need to transport NOW.
b. Her vital signs are normal considering her syncope, possibly a vagal response.
c. Her vital signs are normal given that she is probably pregnant.
d. Given the stress and commotion you are not the least bit surprised.

9) En-route to the hospital you continue to re-asses Lisa's vital signs and consider her condition. You realize that the biggest issue you may need to deal with is:

a. The fetus could become starved of oxygen and nutrients and perish.
b. Lisa could become profoundly hypovolemic.
c. Lisa might have an emotional breakdown if she finds out that the fetus may not survive.
d. Lisa might be having a spontaneous abortion.



You encounter your next patient, Beth, on a blustery December day a week before Christmas. She is home alone in a clean, well kept bungalow and she is terrified that she has killed her baby. Beth is due in four weeks and was taking the recycling to the curb when she slipped and fell. She landed with a jolt on her butt and has had a sore tailbone since the incident almost three hours ago. For three hours Beth has been trying not to worry but seemingly only able to make her worrying more severe. She is now convinced something is wrong and called 9-1-1. She admits early in the assessment that she really just needs someone to tell her everything is OK.

10) Based on her trimester and mechanism of injury you figure a realistic worst-case scenario might be a:

a. ruptured ectopic pregnancy
b. ruptured uterus
c. complicated bowel injury
d. traumatic placental abrution

11) Beth does not have any vaginal bleeding (she assures you she has checked repeatedly for 3 hours). And there is no tenderness or contraction on palpation of the uterus. This is Beth's first pregnancy, all of her pre-natal care and assessments have been normal. When you palpated the uterus you judged the top of the uterus to be much closer to the xyphoid than the umbilicus. This tells you that:

a. so far everything seems normal
b. the fetus seems to not be developing normally
c. the uterus is abnormally high which may indicate bleeding
d. Beth is not telling you the truth

12) Your partner has finally finished with his meticulous, slow measuring of vital signs (that's just how he works, one speed, slow) he reports to you the following:

Heart rate 92 strong , regular.

Respiratory rate 20 normal, regular.

Blood pressure 132/86

Skin pink, warm, dry

these vital signs are:

a. not a cause for concern
b. alarming given the stage of pregnancy that the patient is in
c. indicative of a concealed placental abruption
d. indicative of significant volume loss

13) You feel that you have conducted a thorough assessment, and physical exam. Beth looks at you with pleading eyes and says "Please tell me everything is OK. I have a lot of work to do here at home and I don't want to waste anyone's time if everything is OK." You consider this and tell her:

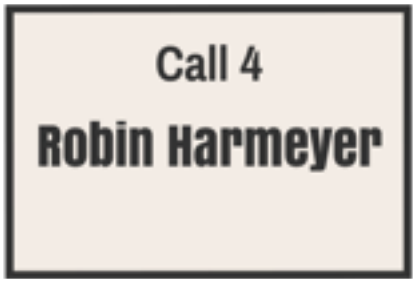
a. There are no signs of anything being wrong right now, but we need to take you to the hospital for a more thorough assessment.

b. There are no signs of anything being wrong right now, but we can certainly still take you in to the hospital since we don't have x-ray vision, and we could be missing something. It is up to you Beth.

c. There are no life-threatening conditions obvious right now. But there are a few concerning signs that need to be thoroughly investigated.

d. We have assessed you quite thoroughly. If you develop any bleeding or pain you need to call us back right away, but there is no need to go the hospital right now.

Are you sure about that last patient, Beth? Seems like a big responsibility to give her advice like that. I sure hope you mixed your knowledge of pregnancy related emergencies with a big dose of common sense when you dealt with her.



Robin is one of those patients that stick with you for a while after the call is complete. Not in a literal sense of course, that would be a bit weird, but someone you think back on and wonder how she made out. She seemed out of place in the deplorable living conditions where you were called to pick her up. Her big, frightened, brown eyes revealed a sensitive, almost child-like quality that stood in stark contrast to her hardened shell.

You couldn't help but wonder what could have become of her if she hadn't been stuck in a world of drugs, alcohol abuse and abusive boyfriends. But there she was in her own personal hell. The call information had been "17 year old, possible active labour, some vaginal bleeding, no further info". It seemed like a blessing, you didn't want any further info, not yet. You needed a moment to digest what you had been given.

When you arrived at the building that you had been to so many times, usually for drunken fights, domestic assaults or overdoses you didn't even try the entry code, a firm yank on the 'locked' lobby door always pops it open.

The apartment was full of people, only a couple of which seemed to be aware that the ambulance had been called (or that cared). You were led into a back bedroom, the floor littered with clothes, cigarette butts, empty fast food packaging and who knows what else. Robin was laying on a mattress on the floor, and she looked terrible. Pale, sweaty, dirty and seemingly high as a kite. Pupils, tiny little specks in her big eyes. Her voice drowsy and thick. She was wearing an oversized SpongeBob SquarePants T-shirt, his smiling face not fooling anyone. Her fleece pyjama pants were discarded in a pile at the bottom of the bed. She was still wearing her underwear although they were soaked in blood. Blood also stained the dirty sheets between her legs.

Robin's pregnancy was clearly quite far along. Her skinny build made the developed uterus quite easy to visualize, you judged it to be almost precisely midway between the umbilicus and xyphoid. Robin was not able to tell you much about the pregnancy or when her due date was. She did tell you that she started going to an obstetrician but hadn't been in a while. She also admitted that she had been told to go back because there was something wrong. "Not wrong, but something was too low. They said it might fix itself but they needed to look at it and that I might need to have a c-section.", she clarified in her slow, drowsy voice.

That afternoon (about an hour previously) Robin had noticed some bleeding. She denied having any pain per se, but occasional cramps. You could not detect any rigidness, guarding or tenderness when you gently palpated the uterus.

14) Based on your physical assessment you believe Robin is approximately how many weeks gestation?

a. 26 weeks
b. 32 weeks
c. 36 weeks
d. 40 weeks

15) The most likely cause for Robin's vaginal bleeding is a:

a. ruptured ectopic pregnancy
b. placental abruption
c. placenta previa
d. onset of labor

16) You are quite concerned, you know that there is a possibility that if Robin is in labor and ends up delivering before you get to the hospital she is susceptible to complications that could lead to blood loss on the magnitude of:

a. 500 - 1,000 ml
b. 1000 - 2,000 ml
c. 2,000 - 3,000 ml
d. 3,000 - 5,000 ml

17) It is impossible to estimate the amount of blood loss since Robin is unable to answer any questions reliably and the blood is soaked into the mattress. Your evaluation of the vital signs does not reveal anything out of the ordinary (other than a slow respiratory rate and very small pupils). Robin's pale, sweaty skin concerns you though. You realize it is probably a sign that Robin's compensatory system is active. You know that Robin could lose as much as two litres of blood without any vital sign abnormalities… Wait a minute, two litres? How is that possible? Please explain!

a. Robin has an extra 40-50% of blood volume at this stage in the pregnancy, she can loose a lot and still have enough to compensate.
b. Vagus stimulation will keep the vital signs in normal limits.
c. Hormonal changes in pregnancy make the vessels constrict thus increasing BP.
d. Amniotic fluid can be re-absorbed and utilized during maternal hypovolemia.

Luckily Robin does not deliver while in your care. You get her to the hospital in time where she is given large amounts of fluid and blood and is prepped for surgery. You find out later that she and her baby survived the ordeal. You wonder if it changed her. You hope that it did, that she somewhere in her brush with death discovered how precious life is. You look for her when you go to that building, when you yank the lobby door open you look for her, and wonder.

Broken glass crunched under the ambulance tires as you maneuvered the truck to a safe spot past the accident site. It was a devastating accident. It looked like the Toyota Camry had slid head on into the gravel truck. You were trying to size up the scene while you put your helmet and vest on. There was one patient in the driver's seat of the Camry, still sitting in the car. Might be trapped even. The dump truck driver was walking around distraught, seemingly at a loss for what to do. You directed an arriving fire fighter to get the guy off the roadway before he gets hit. All of the doors were closed on the Toyota so it appeared that there was only one patient. You

wheeled the stretcher to the driver's side and through the shattered window made patient contact. To your relief your patient was conscious, alert and crying hysterically. Then you looked down and saw the bulge of her pregnant abdomen and your heart sank. This could be bad. You determined that Marianne indeed struck the gravel truck head-on with both vehicles travelling around 70-80 km/h. If that wasn't bad enough Marianne told you that she had not been wearing her seatbelt out of fear of harming her baby if she got into an accident. You also found out that this was Marianne's first pregnancy and everything had been going well so far with her pre-natal check-ups. She was due in three weeks.

18) Given the information you have so far. The worst case scenario is that Marianne has suffered:

a. a ruptured uterus
b. a traumatic placental abruption
c. an ectopic rupture
d. premature labor

19) Given that Marianne has never been pregnant before, her uterus would be most likely to rupture:

a. anteriorly
b. posteriorly
c. inferiorly
d. superiorly

20) As you extricate Marianne from the vehicle you notice that she has been incontinent. There is blood visible in the urine soaked seat. This would further increase your suspicion that Marianne has suffered:

a. an anteriorly ruptured uterus
b. a posteriorly ruptured uterus
c. a traumatic placental abruption
d. premature labor

21) If the worst case scenario is true. The mortality rate of the fetus is:

a. 100%
b. 90%
c. 80%
d. 70%

You are later relieved to hear that it was not the worst case scenario. However, the baby was quickly delivered via c-section and did well. Marianne suffered a ruptured bladder as well as several broken ribs but eventually made a full recovery.

Great job on those pregnancy related calls! Now let's go over some other stuff. This is meant as a review of some basic medical math principles and is intended for all levels of paramedics.

22) Since all levels of paramedics are now going to manually defibrillate, let's review the joule settings and calculations for children. Complete the following chart, we have filled out the first row for you (it was the only math we could handle):

Years Old	est. weight (kg)	First Shock	Subsequent Shocks
1	12 kg	24 joules	48 joules
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

(6 marks)

Now for some dreaded medical math…It's not so bad. Take your time. You know how to do this stuff.

If you find it difficult, take a moment and go through our interactive tutorial online. It takes you through all the steps and demystifies the whole thing!

http://www.lakeridgehealth.on.ca/training/medical_math_presenter/presentation.html

23) You are asked by the sending staff of the hospital to run an IV at 125 ml/hr on a transfer to a neighbouring city. How many drops per minute should you run it at? You check the drip set and discover it is a 15 gtts/ml set.

____ drops / min

24) You are treating a 9 year old for a reaction to a bee sting. The reaction is relatively mild, and you elect to give diphenhydramine. How much volume should you administer? The drug is in its usual 50 mg/ml concentration and the child is average size for a 9 year old.

_____ ml

25) While you are dealing with the patient above you find out that his average size 5 year old sister has also been stung and is also having a mild reaction. How much diphenhydramine should you administer to her as per the ALS-PCS?

_____ ml

26) You are going to administer the correct dose of Ketorolac for an adult patient. The drug is supplied in 30 mg/ml vials. What volume of drug should you administer?

_____ ml

27) You are going on a LONG transfer. The sending physician asks you to infuse a 500 ml normal saline bag over 2 hours. They are using a 10 gtts/ml set. How many drops per minute should you run it at?

___ drops / min

28) You have an adult patient who is complaining of nausea and vomiting. You decide to administer gravol intramuscularly. You did not have time to do a vehicle check this morning and when you grab the ampule you realize that they have changed suppliers and it now comes in 150 mg / 2 ml. You shake your head, nice of them to tell you. Oh well, this patient needs the drug. How much volume are you going to administer?

___ ml

29) Your partner has just started a line on a pediatric patient. You have opened it up and it is running beautifully through a micro drip set (60 gtts/ml). He asks you to set it to the TKVO rate of 15 ml/hr. How many drops per minute are you going to set it to?

___ drops per minute

You are all done!