UPDATED HESI EXAM PREPARATION NOTES, HINTS, AND STUDY GUIDE FOR MATERNAL EXAMS

The Menstraul Cycle

- The menstrual phase varies in length in most women.
- Ovulation occurs approximately 14 days before the next menstrual cycle.
- To avoid pregnancy a woman should abstain from unprotected sexual intercourseduring her fertile days. The most fertile days for pregnancy are the day before ovulation and the day of ovulation. The fertile period begins 4-5 days prior to ovulation and ends 24-48 hours after ovulation. A couple must avoid unprotectedintercourse for several days before an anticipated ovulation and for 3 days after ovulation to prevent pregnancy because sperm can live in a woman's body approximately 4 to 5 days and eggs live approximately 24-48 hours after being released.
- Some women do not realize they are pregnant because they experience implantationbleeding and spotting

Antepartum Nursing Care

- Signs of healthy psychosocial maternal-fetal bonding include massaging the abdomen, nicknaming the fetus, and talking to the fetus in utero.
- For many women, battering (emotional or physical abuse) begins during pregnancy.Women should be assessed for abuse in private, away from the partner, by a nurse who is familiar with local resources and knows how to determine the safety of theclient.
- Practice determining gravidity and parity. A woman who is 6 weeks pregnancy has thefollowing maternal history
  - Has healthy 2-year old fraternal twins.
  - Miscarried at 22 weeks.
  - Had an elective abortion at 6 weeks, 5 years earlier.
  - With this pregnancy she is gravida 4, para 2, only 2 deliveries after 20 weeks' gestation, and twins are two living
  - GTPAL is 4-1-1-1-2l (G-4 pregnancies (twin's miscarriage, elective abortion, current pregnancy), T-1 (twins count as one birth), P-1 (22-week miscarriage); A-1 (electiveabortion at 6 weeks); L-2 (twins)
- Practice calculating EDB. If the first day of a woman's last normal menstrual period was December 9, what is her EDB, using the Nagele rule?
  - Answer: September 16th. Count back 3 months and add 7 days.
- At approximately 28-32 weeks' gestation, a plasma volume increase of 25% to 40% occurs, resulting in normal hemodilation of pregnancy and Hct values above 38% or hemoglobin levels above 13g/dL are associated with gestational hypertension. High Hct values may look good, but in reality they represent a gestational hypertension disorder and a depleted vascular space.
- Hgb and Hct data can be used to evaluate nutritional status. Example: a 22 year old primigravida at 12 weeks' gestation has a Hgb of 9.6 g/dL and an Hct of 31%. She has gained 3 pounds during the first trimester. A weight gain of 907.18 to 1814.4 g. (2-4lbs.) during the first trimester is recommended. Since the client is anemic supplemental iron and a diet higher in iron are needed.
- Food high in iron:
  - Fish and red meats
  - Cereal and yellow vegetables
  - Green leafy vegetables and citrus fruits

- Egg yolks and dried fruits

- As pregnancy advances, the uterus presses on abdominal vessels (vena cava andaorta). Teach the woman that a left side-lying position relieves supine hypotensionand increases perfusion to uterus, placenta, and fetus.
- The normal FHR is 110-160 bmp. Changes in FHR are the first and most important indicators of compromised blood flow to the fetus; these changes require action! Fetal well-being is determined by assessing fundal height, fetal heart tones and rate, fetalmovement, and uterine activity (contractions).
- Early intervention can optimize maternal and fetal outcome. Teach clients to report immediately any of the following danger signs. Possible indications of preeclampsia and eclampsia are:
    - Visual disturbances
    - Swelling of face, fingers or sacrum
    - Severe, continuous headache
    - Persistent vomiting
    - Epigastric pain
    - Infection:
        - Chills
        - Temperature over 38 degrees C
        - Dysuria
        - Pain in abdomen
    - Fluid discharge or bleeding from vagina (anything other than normal leukorrhea)
    - Change in fetal movement or increased FHR
- Most providers prescribe prenatal vitamins to ensure that the client receives an adequate intake of vitamins. However only the health care provider can prescribe prenatal vitamins. It is the nurse's responsibility to teach about proper diet and about taking prescribed vitamins as they have been prescribed to the health care provider.
- It is recommended that pregnant women consume the equivalent of 3 cups of milk oryogurt per day. This will ensure that the daily calcium needs are met and help alleviate the occurrence of leg cramps.

Fetal and Maternal Assessment Techniques

- In some states, screening for neural tube defects by testing either maternal serum alpha fetoprotein (AFP) levels or amniotic fluid AFP levels is mandated by state law.This screening is highly associated with both false positives and false negatives.
- Gestational age is determined by an early sonogram rather than a later one.
- When an amniocentesis is done in early pregnancy, the bladder must be full to helpsupport the uterus and to help push the uterus up in the abdomen for easy access. When an amniocentesis is performed in late pregnancy, the bladder must be emptyso it will not be punctured.
- Check for labor progress if early decelerations are noted. Early decelerations causedby head compression and fetal descent usually occur in the second stage of labor between 4 and 7 cm dilation.
- If cord prolapse is detected, the examiner should position the mother to relieve pressure on the cord (i.e., knee-chest position) or push the presenting part of the corduntil immediate cesarean delivery can be accomplished.
- Late decelerations indicate UPI and are associated with conditions such as post maturity, preeclampsia, diabetes mellitus, cardiac disease, and abruption placentae.
- The situation is ominous (potentially dangerous) and requires immediate interventionand fetal assessment when deceleration patterns (late or variable) are associated with decreased or absent variability and tachycardia.

- A decrease in uteroplacental perfusion results in late decelerations; cord compressionresults in a pattern of variable decelerations. Nursing interventions should include changing maternal position, discontinuing oxytocin (Pitocin) infusion, administering oxygen, and notifying the health care provider.
- With nipple stimulation there is no control of the "dose" of oxytocin delivered by theposterior pituitary. The change of hyper stimulation or tetany (contractions lasting over 90 seconds or contractions with less than 30 seconds in between) is increased.
- Percutaneous umbilical blood sampling (PUBS) can be done during pregnancy under ultrasound for prenatal diagnosis and therapy. Hemoglobinopathies, clotting disorders, sepsis, and some genetic testing can be done using this method.
- The most important determinant of fetal maturity for extra uterine survival is the lungmaturity: lung surfactant (L/S) ratio (2:1 or higher).

Intrapartum Nursing Care

- True Labor
  - Pain in lower back that radiates to abdomen
  - Pain accompanied by regular rhythmic contractions
  - Contractions that intensify with ambulation
  - Progressive cervical dilation and effacement
- False Labor
  - Discomfort localized in abdomen
  - No lower back pain
  - Contractions decrease in intensity or frequency with ambulation
- It is important to know the normal findings for a client in labor:
  - Normal FHR in labor: 110-160 bpm
  - Normal maternal BP: <140/90
  - Normal maternal pulse: <100 bpm
  - Normal maternal temperature: 38 degrees C
  - Slight elevation in temperature may occur because of dehydration and the work oflabor. Anything higher indicated infection and must be reported immediately.
- Watch for cord prolapse if the infants head is floating
- Meconium-stained fluid is yellow-green or gold-yellow and may indicate fetal stress
- Breathing techniques, such as deep chest, accelerated, and cued, and not prescribedby the stage and phase of labor but by the discomfort level of the laboring women. If coping is decreasing, switch to a new technique.
- Hyperventilation results in respiratory alkalosis that is caused by blowing off too muchCO_2.
  - Symptoms include:
    - Dizziness
    - Tingling of fingers
    - Stiff mouth
  - Have woman breathe into her cupped hands or a paper bag in order to rebreathe CO_2.
- Determine cervical dilation before allowing client to push. Cervix should be completely dilated (10cm) before the client begins pushing. If pushing starts tooearly, the cervix can become edematous and never fully dilate.
- Give the oxytocin (Pitocin) after the placenta is delivered because the drug will causethe uterus to contract. If the oxytocin drug is administered before the placenta is delivered, it may result in a retained placenta, which predisposes the client to hemorrhage and infection.

- Methylergonovine is NOT given to clients with hypertension because of its vasoconstrictive action. Pitocin is given with caution to those with hypertension.
- Never give methylergonovine or carboprost to a client while she is in labor or beforedelivery of the placenta.
- Application of Perineal Pads after Delivery
  - Place two on perineum
  - Do not touch inside of pad
  - Do apply from front to back, being careful not to drag pad across the anus.
- Full bladder is one of the most common reasons for uterine atony or hemorrhage in the first 24 hours after delivery. If the nurse finds the fundus soft, boggy, and displaced above and to the right of the umbilicus, what action should be taken first?
  - First perform fundal massage; then have the client empty her bladder. Recheckfundus every 15 minutes for 1 hour, then every 30 minutes for 2 hours.
- If narcotic analgesics are given, raise side rails and place call light within reach. Instruct client not to get out of bed or ambulate without assistance. Caution client about drowsiness as a side effect.
- A first-degree tear involves only the epidermis. A second-degree tear involves dermis,muscle, and fascia. A third-degree tear extends into the anal sphincter. A fourth-degree tear extends up the rectal mucosa. Tears cause pain and swelling. Avoid rectal manipulations.
- Do not wait until a 1-minute Apgar is assigned to begin resuscitation of the compromised neonate.
- Apgar scores of 6 or lower at 5 minutes require an additional Apgar assessment at 10minutes
- IV administration of analgesics is preferred to IM administration for a client in laborbecause the onset and peak occur more quickly and the duration of the drug is shorter. It is important to know the following:
  - IV administration
    - Onset: 5 minutes
    - Peak: 30 minutes
    - Duration: 1 hour
  - IM administration
    - Onset: within 30 minutes
    - Peak: 1to 3 hours after injection
    - Duration: 4 to 6 hours
- Tranquilizers (ataractics and phenothiazines), such as promethazine and hydroxyzine, are used in labor as analgesic-potentiating drugs to decrease the amount of narcotic needed and to decrease maternal anxiety.
- Agonist narcotic drugs (morphine) produce narcosis and have a higher risk for causing maternal and fetal respiratory depression. Antagonist drugs (butorphanol, nalbuphine) have less respiratory depression but must be used with caution in a mother with preexisting narcotic dependency because withdrawal symptoms occur immediately.
- Pudendal block and subarachnoid (saddle) block are used only in the second stage oflabor. Peridural and epidural blocks may be used during all stages of labor.
- The first sign of a block's effectiveness is usually warmth and tingling in the ball of thefoot or the big toe.
- Stop continuous infusion at end of stage I or during transition to increase effectiveness of pushing.
- Regional Block Anesthesia and Fetal Presentation
  - Internal rotation is harder to achieve when the pelvic floor is relaxed by the anesthesia; this results in a persistent occiput-posterior position of fetus.