Normal Prenatal Period NCLEX Review

Normal Prenatal Period

I. Gestation
A. Time from fertilization of the ovum until the estimated date of delivery
B. About 280 days
C. Naegele's rule for estimating the date of delivery, also known as date of birth

1. Use of Naegele's rule requires that the woman have a regular 28-day menstrual cycle.

2. Subtract 3 months and add 7 days to the first day of the last menstrual period; then add 1 year if appropriate. Alternatively, add 7 days to the last menstrual period and count forward 9 months.

II. Gravidity and Parity
A. Gravidity
1. Gravida refers to a pregnant woman.
2. Gravidity refers to the number of pregnancies.
3. A nulligravida is a woman who has never been pregnant.
4. A primigravida is a woman who is pregnant for the first time.
5. A multigravida is a woman in at least her second pregnancy.

B. Parity

1. Parity is the number of births (not the number of fetuses, e.g., twins) carried past 20 weeks of gestation, whether or not the fetus was born alive.
2. A nullipara is a woman who has not had a birth at more than 20 weeks of gestation.
3. A primipara is a woman who has had 1 birth that occurred after the twentieth week of gestation.
4. A multipara is a woman who has had 2 or more pregnancies to the stage of fetal viability.

C. Use of GTPAL: Pregnancy outcomes can be described with the acronym GTPAL.

1. G is gravidity, the number of pregnancies, including the present one.
2. T is term births, the number born at term (longer than 37 weeks of gestation).
3. P is preterm births, the number born before 37 weeks of gestation.
4. A is abortions or miscarriages, the number of abortions or miscarriages (included in gravida if before 20 weeks of gestation; included in parity if past 20 weeks of gestation). A termination of the pregnancy after 20 weeks is referred to as a "therapeutic termination."
5. L is the number of current living children.

III. Pregnancy Signs

A. Presumptive signs

1. Amenorrhea
2. Nausea and vomiting
3. Increased size and increased feeling of fullness in breasts
4. Pronounced nipples
5. Urinary frequency
6. Quickening: The first perception of fetal movement by the mother may occur at the sixteenth to twentieth week of gestation.
7. Fatigue

B. Probable signs

1. Uterine enlargement
2. Hegar's sign: Compressibility and softening of the lower uterine segment that occurs at about week 6
3. Goodell's sign: Softening of the cervix that occurs at the beginning of the second month

4. Chadwick's sign: Violet discoloration of the mucous membranes of the cervix, vagina, and vulva that occurs at about week 6
5. Ballottement: Rebounding of the fetus against the examiner's fingers on palpation
6. Braxton Hicks contractions (irregular painless contractions that may occur intermittently throughout pregnancy)
7. Positive pregnancy test for determination of the presence of human chorionic gonadotropin

C. Positive signs (diagnostic)

1. Fetal heart rate detected by electronic device (Doppler transducer) at 10 to 12 weeks and by nonelectronic device (fetoscope) at 20 weeks of gestation
2. Active fetal movements palpable by examiner
3. Outline of fetus via radiography or ultrasonography

IV. Fundal Height

A. Fundal height is measured to evaluate the gestational age of the fetus.
B. During the second and third trimesters (weeks 18 to 30), fundal height in centimeters approximately equals fetal age in weeks
C. At 16 weeks, the fundus can be found approximately halfway between the symphysis pubis and the umbilicus.
D. At 20 to 22 weeks, the fundus is approximately at the location of the umbilicus.
E. At 36 weeks, the fundus is at the xiphoid process. When assessing fundal height, monitor the client closely for supine hypotension when placed in the supine position.

V. Physiological Maternal Changes

Culture often determines health beliefs, values, and family expectations. Therefore, it is important to assess cultural beliefs during care of the maternity client.

A. Cardiovascular system

1. Circulating blood volume increases, plasma increases, and total red blood cell volume increases

(total volume increases by approximately 40% to 50%).

2. Physiological anemia occurs as the plasma increase exceeds the increase in production of red blood cells.
3. Iron requirements are increased.
4. Heart size increases, and the heart is elevated slightly upward and to the left because of displacement of the diaphragm as the uterus enlarges (Fig. 25-2).
5. Retention of sodium and water may occur.

B. Respiratory system

1. Oxygen consumption increases by approximately 15% to 20%.
2. Diaphragm is elevated because of the enlarged uterus (see Fig. 25-2).
3. Shortness of breath may be experienced. During pregnancy, a woman's pulse rate may increase about 10 to 15 beats/minute; the blood pressure slightly decreases in the second trimester, then increases in the third trimester, but not above the pre-pregnancy level; and the respiratory rate remains unchanged or slightly increases.

C. Gastrointestinal system

1. Nausea and vomiting may occur as a result of the secretion of human chorionic gonadotropin; it typically subsides by the third month.
2. Poor appetite may occur because of decreased gastric motility.
3. Alterations in taste and smell may occur.
4. Constipation may occur because of an increase in progesterone production or pressure of the uterus resulting in decreased gastrointestinal motility.
5. Flatulence and heartburn may occur because of decreased gastrointestinal motility and slowed emptying of the stomach caused by an increase in progesterone production.
6. Hemorrhoids may occur because of increased venous pressure.
7. Gum tissue may become swollen and easily bleed because of increasing levels of estrogen.
8. Ptyalism (excessive secretion of saliva) may occur because of increasing levels of estrogen.

D. Renal system

1. Frequency of urination increases in the first and third trimesters because of increased bladder sensitivity and pressure of the enlarging uterus on the bladder.
2. Decreased bladder tone may occur and is caused by an increase in progesterone and estrogen levels; bladder capacity increases in response to increasing levels of progesterone.
3. Renal threshold for glucose may be reduced.

E. Endocrine system

1. Basal metabolic rate increases and metabolic function increases.
2. The anterior lobe of the pituitary gland enlarges and produces serum prolactin needed for the lactation process.
3. The posterior lobe of the pituitary gland produces oxytocin, which stimulates uterine

contractions.
4. The thyroid enlarges slightly, and thyroid activity increases.
5. The parathyroid increases in size.
6. Aldosterone levels gradually increase.
7. Body weight increases.
8. Water retention is increased, which can contribute to weight gain.

F. Reproductive system

1. Uterus

a. Uterus enlarges, increasing in mass from approximately 60 to 1000 g as a result of hyperplasia (influence of estrogen) and hypertrophy.
b. Size and number of blood vessels and lymphatics increase.
c. Irregular contractions occur, typically beginning after 16 weeks of gestation.

2. Cervix

a. Cervix becomes shorter, more elastic, and larger in diameter.
b. Endocervical glands secrete a thick mucous plug, which is expelled from the canal when dilation begins.
c. Increased vascularization and an increase in estrogen cause softening and a violet discoloration known as Chadwick's sign, which occurs at about 6 weeks of gestation.

3. Ovaries

a. A major function of the ovaries is to secrete progesterone for the first 6 to 7 weeks of pregnancy.
b. The maturation of new follicles is blocked.
c. The ovaries cease ovum production.

4. Vagina

a. Hypertrophy and thickening of the muscle occur.
b. An increase in vaginal secretions is experienced; secretions are usually thick, white, and acidic.

5. Breasts: Breast changes occur because of the increasing effects of estrogen and progesterone.

a. Breast size increases, and breasts may be tender.
b. Nipples become more pronounced.
c. The areolae become darker in color.
d. Superficial veins become prominent.
e. Hypertrophy of Montgomery's follicles occurs.
f. Colostrum may leak from the breast.

G. Skin

1. Some changes occur because the levels of melanocyte-stimulating hormone increase as a

result of an increase in estrogen and progesterone levels; these changes include the following:

a. Increased pigmentation
b. Dark streak down the midline of the abdomen (linea nigra)
c. Chloasma (mask of pregnancy)—a blotchy brownish hyper-pigmentation, over the forehead, cheeks, and nose
d. Reddish purple stretch marks (striae gravidarum) on the abdomen, breasts, thighs, and upper arms

2. Vascular spider nevi may occur on the neck, chest, face, arms, and legs.

3. Rate of hair growth may increase.

H. Musculoskeletal system

1. Changes in the center of gravity begin in the second trimester and are caused by the hormones relaxin and progesterone.
2. The lumbo-sacral curve increases.
3. Aching, numbness, and weakness may result; walking becomes more difficult, and the woman develops a waddling gait and is at risk for falls.
4. Relaxation and increased mobility of pelvic joints occur, which permit enlargement of pelvic dimensions.
5. Abdominal wall stretches with loss of tone throughout pregnancy, regained postpartum.
6. Umbilicus flattens or protrudes. During pregnancy, postural changes occur as the increased weight of the uterus causes a forward pull of the bony pelvis. It is important for the nurse to encourage the client to implement measures that maintain safety and correct posture to prevent a backache.

VI. Psychological Maternal Changes

A. Ambivalence

1. Ambivalence occurs early in pregnancy, even when the pregnancy is planned.
2. The mother may experience a dependence-independence conflict and ambivalence related to role changes.
3. The partner may experience ambivalence related to the new role being assumed, increased financial responsibilities, and sharing the mother’s attention with the child.

B. Acceptance: Factors that maybe related to acceptance of the pregnancy are the woman’s readiness for the experience and her identification with the motherhood role. Specific developmental tasks must be accomplished successfully for positive maternal role adaptation.

These tasks include accepting the pregnancy, identifying with the mothering role, solidifying her relationship with her partner, establishing a relationship with her unborn infant, and preparing for her birth experience.

C. Emotional lability

1. Emotional lability may be manifested by frequent changes of emotional states or extremes in

emotional states.
2. These emotional changes are common, but the mother may think that these changes are abnormal.

D. Body image changes
1. The changes in a woman's perception of her image during pregnancy occur gradually and may be positive or negative.
2. The physical changes and signs and symptoms that the woman experiences during pregnancy contribute to her body image.

E. Relationship with the fetus
1. The woman may daydream to prepare for motherhood and think about the maternal qualities that she would like to possess.
2. The woman first accepts the biological fact that she is pregnant.
3. The woman next accepts the growing fetus as distinct from herself and a person to nurture.
4. Finally, the woman prepares realistically for the birth and parenting of the child.

VII. Discomforts of Pregnancy

A. Nausea and vomiting

1. Occurs in the first trimester and usually subsides by the third month
2. Caused by elevated levels of human chorionic gonadotropin and other pregnancy hormones as well as changes in carbohydrate metabolism
3. Interventions

a. Eating dry crackers before arising
b. Avoiding brushing teeth immediately after arising

c. Eating small, frequent, low-fat meals during the day
d. Drinking liquids between meals rather than at meals
e. Avoiding fried foods and spicy foods
f. Asking the health care provider (HCP) about acupressure (some types may require a prescription)
g. Asking the HCP about the use of herbal remedies
h. Taking antiemetic medications as prescribed

B. Syncope

1. Usually occurs in the first trimester; supine hypotension occurs particularly in the second and third trimesters.
2. May be triggered hormonally or caused by the increased blood volume, anemia, fatigue, sudden position changes, or lying supine
3. Interventions

a. Sitting with the feet elevated
b. Risk for falls; teach to change positions slowly The nurse needs to instruct the pregnant woman to avoid lying in the supine position, particularly in the second and third trimesters. The supine position places the woman at risk for supine hypotension, which occurs as a result of pressure of

the uterus on the inferior vena cava.

C. Urinary urgency and frequency

1. Usually occurs in the first and third trimesters
2. Caused by pressure of the uterus on the bladder
3. Interventions

a. Drinking no less than 2000 mL of fluid during the day
b. Limiting fluid intake in the evening
c. Voiding at regular intervals
d. Sleeping side-lying at night
e. Wearing perineal pads, if necessary
f. Performing Kegel exercises

D. Breast tenderness

1. Can occur in the first through the third trimesters
2. Caused by increased levels of estrogen and progesterone
3. Interventions

a. Wearing a supportive bra
b. Avoiding the use of soap on the nipples and areolar area to prevent drying of skin

E. Increased vaginal discharge

1. Can occur in the first through the third trimesters
2. Caused by hypertrophy and thickening of the vaginal mucosa and increased mucus production
3. Interventions

a. Using proper cleansing and hygiene techniques
b. Wearing cotton underwear
c. Avoiding douching
d. Consulting the HCP if infection is suspected

F. Nasal stuffiness

1. Occurs in the first through third trimesters
2. Results from increased estrogen, which causes edema of the nasal tissues and dryness
3. Interventions

a. Encouraging the use of a humidifier
b. Avoiding the use of nasal sprays or antihistamines (the HCP should be consulted about their use)

G. Fatigue

1. Occurs usually in the first and third trimesters
2. Usually results from hormonal changes

3. Interventions

a. Arranging frequent rest periods throughout the day
b. Using correct posture and body mechanics
c. Obtaining regular exercise
d. Performing muscle relaxation and strengthening exercises for the legs and hip joints
e. Avoiding eating and drinking foods containing
stimulants throughout the pregnancy

H. Heartburn

1. Occurs in the second and third trimesters
2. Results from increased progesterone levels, decreased gastrointestinal motility, esophageal reflux, and displacement of the stomach by the enlarging uterus
3. Interventions

a. Eating small, frequent meals
b. Sitting upright for 30 minutes after a meal
c. Drinking milk between meals
d. Avoiding fatty and spicy foods
e. Performing tailor-sitting exercises
f. Consulting with the HCP about the use of antacids

I. Ankle edema

1. Usually occurs in the second and third trimesters
2. Results from vasodilation, venous stasis, and increased venous pressure below the uterus
3. Interventions
a. Elevating the legs at least twice a day and when resting
b. Sleeping in a side-lying position
c. Wearing supportive stockings or support hose
d. Avoiding sitting or standing in 1 position for long periods

J. Varicose veins

1. Usually occur in the second and third trimesters
2. Result from weakening walls of the veins or valves and venous congestion
3. Interventions

a. Wearing supportive stockings or support hose
b. Elevating the feet when sitting
c. Lying with the feet and hips elevated
d. Avoiding long periods of standing or sitting
e. Moving about while standing to improve circulation
f. Avoiding leg crossing
g. Avoiding constricting articles of clothing such as knee-high stockings

4. Thrombo-phlebitis is rare, but it may occur.

a. Teaching leg exercises
b. Avoiding airline travel

K. Headaches

1. Usually considered benign in the first trimester. May need further investigation if occurring in the second and third trimesters
2. Result from changes in blood volume and vascular tone
3. Interventions

a. Changing position slowly
b. Applying a cool cloth to the forehead
c. Eating a small snack
d. Using acetaminophen only if prescribed by the HCP

L. Hemorrhoids

1. Usually occur in the second and third trimesters
2. Result from increased venous pressure and constipation
3. Interventions

a. Soaking in a warm sitz bath
b. Sitting on a soft pillow
c. Eating high-fiber foods and drinking sufficient fluids to avoid constipation
d. Increasing exercise, such as walking
e. Applying ointments, suppositories, or compresses as prescribed by the HCP

M. Constipation
1. Usually occurs in the second and third trimesters
2. Results from an increase in progesterone production, decreased intestinal motility, displacement of the intestines, pressure of the uterus, and taking iron supplements
3. Interventions

a. Eating high-fiber foods such as whole grains, fruits, and vegetables
b. Drinking no less than 2000 mL per day
c. Exercising regularly, such as a daily 20- minute walk
d. Consulting with the HCP about interventions such as the use of stool softeners, laxatives, or enemas

N. Backache

1. Usually occurs in the second and third trimesters
2. Caused by an exaggerated lumbo-sacral curve resulting from an enlarged uterus
3. Risk for falls; teach to move about slowly
4. Interventions

a. Obtaining rest
b. Using correct posture and body mechanics
c. Wearing low-heeled, comfortable, and supportive shoes

d. Performing pelvic tilt (rock) exercises and conscious relaxation exercises
e. Sleeping on a firm mattress

O. Leg cramps

1. Usually occur in the second and third trimesters
2. Result from an altered calcium-phosphorus balance and pressure of the uterus on nerves or from fatigue
3. Interventions

a. Getting regular exercise, especially walking
b. Dorsi-flexing the foot of the affected leg
c. Increasing calcium intake

P. Shortness of breath

1. Can occur in the second and third trimesters
2. Results from pressure on the diaphragm from the enlarged uterus
3. Interventions

a. Taking frequent rest periods
b. Sitting and sleeping with the head elevated or on the side
c. Avoiding overexertion