Chapter 5

Nursing Care of Women with Complications During Pregnancy

Key terms

Abortion
Cerclage
Eclampsia
Gestational diabetes
Incompetent cervix
Preeclampsia

Characteristic Causes of High-Risk Pregnancies

Can relate to the pregnancy itself
Can occur because the woman has a medical condition or injury that complicates the pregnancy
Can result from environmental hazards that affect the mother or her fetus
Can arise from maternal behaviors or lifestyles that have a negative effect on the mother or fetus

Assessment of Fetal Health

Amniocentesis

Danger Signs in Pregnancy

Sudden gush of fluid from the vagina
Vaginal bleeding
Abdominal pain
Persistent vomiting
- Epigastric pain
- Edema of face and hands
- Severe, persistent headache
- Blurred vision or dizziness
- Chills with fever over 38.0°C (100.4°F)
- Painful urination or reduced urine output
- Pregnancy-Related Complications
- Hyperemesis gravidarum
- Bleeding disorders
- Hypertension
- Blood incompatibility between woman and fetus
- Hyperemesis Gravidarum

  - Manifestations
    - Excessive nausea and vomiting
    - Can impact fetal growth
    - Dehydration
    - Reduced delivery of blood, oxygen, and nutrients to the fetus

  - Hyperemesis Gravidarum (cont.)

  - Treatment
    - Correct dehydration and electrolyte or acid-base imbalance
    - Antiemetic drugs may be prescribed
In extreme cases

- TPN may be required
- Hospitalization

Bleeding Disorders of Early Pregnancy

Types of Abortions

- Spontaneous (nonintentional)
  - Threatened
  - Inevitable
  - Incomplete
  - Complete
  - Missed
  - Recurrent

- Induced
  - Therapeutic
  - Elective

Nursing Care of Early Pregnancy Bleeding Disorders

- Document amount and character of bleeding
- Save anything that looks like clots or tissue for evaluation by a pathologist
- Perineal pad count with estimated amount of blood per pad (i.e., 50%)
- Monitor vital signs
- If actively bleeding, woman should be kept NPO in case surgical intervention is needed

Post-Abortion Teaching

- Report increased bleeding
- Take temperature every 8 hours for 3 days
• Take an oral iron supplement if prescribed
• Resume sexual activity as recommended by the health care provider
• Return to health care provider at the recommended time for a checkup and contraception information
• Pregnancy can occur before the first menstrual period returns after the abortion procedure

Emotional Care

• Spiritual support of the family’s choice and community support groups may help the family work through the grief of any pregnancy loss

Ectopic Pregnancy

• 95% occur in fallopian tube

• Scarring or tubal deformity may result from
  — Hormonal abnormalities
  — Inflammation
  — Infection
  — Adhesions
  — Congenital defects
  — Endometriosis

Most Common Sites for Ectopic Pregnancies

Ectopic Pregnancy (cont.)

• Manifestations
  — Lower abdominal pain and may have light vaginal bleeding
  — If tube ruptures
• May have sudden severe lower abdominal pain
• Vaginal bleeding
• Signs of hypovolemic shock
• Shoulder pain may also be felt

Treatment

— Pregnancy test
— Transvaginal ultrasound
— Laparoscopic examination
— Priority is to control bleeding
— Three actions can be taken
  • No action
  • Treatment with methotrexate to inhibit cell division
  • Surgery to remove pregnancy from the tube

Nursing Tip

• Supporting and encouraging the grieving process in families who suffer a pregnancy loss, such as a spontaneous abortion or ectopic pregnancy, allows them to resolve their grief

Signs and Symptoms of Hypovolemic Shock

• Fetal heart rate changes (increased, decreased, less fluctuation)
• Rising, weak pulse (tachycardia)
• Rising respiratory rate (tachypnea)
• Shallow, irregular respirations; air hunger
• Falling blood pressure (hypotension)
• Decreased or absent urinary output (usually less than 30 mL/hr)
• Pale skin or mucous membranes
• Cold, clammy skin
• Faintness
• Thirst

Hydatidiform Mole

Also known as *gestational trophoblastic disease* or *molar pregnancy*

— Occurs when chorionic villi abnormally increase and develop vesicles
— May cause hemorrhage, clotting abnormalities, hypertension, and later development of cancer
— More likely to occur in women at age extremes of the reproductive life

Hydatidiform Mole (cont.)

• Manifestations
  — Bleeding
  — Rapid uterine growth
  — Failure to detect fetal heart activity
  — Signs of hyperemesis gravidarum
  — Unusually early development of GH
  — Higher-than-expected levels of hCG
  — A distinct “snowstorm” pattern on ultrasound with no evidence of a developing fetus

• Treatment
  — Uterine evacuation
  — Dilation and evacuation

Bleeding Disorders of Late Pregnancy

• Placenta previa
  — Abnormal implantation of placenta
Bright red bleeding occurs when cervix dilates, resulting in painless bleeding

- Three degrees
  - Marginal
  - Partial
  - Total

Bleeding Disorders of Late Pregnancy (cont.)

Complications or Risks

Placenta previa

- Infection because of vaginal organisms
- Postpartum hemorrhage, because if lower segment of uterus was site of attachment, there are fewer muscle fibers, so weaker contractions may occur

Abruptio placentae

- Predisposing factors
  - Hypertension
  - Cocaine or alcohol use
  - Cigarette smoking and poor nutrition
  - Blows to the abdomen
  - Prior history of abruptio placentae
  - Folate deficiency

Nursing Tip

Pain is an important symptom that distinguishes abruptio placentae from placenta previa

Care of the Pregnant Woman with Excessive Bleeding

- Document blood loss
- Closely monitor vital signs, including I&O
• Observe for
  — Pain
  — Uterine rigidity or tenderness
• Verify that orders for blood typing and cross-match have been carried out
• Monitor intravenous infusion
• Prepare for surgery, if indicated
• Monitor fetal heart rate and contractions
• Monitor laboratory results, including coagulation studies
• Administer oxygen by mask
• Prepare for newborn resuscitation
• Hypertension During Pregnancy
• Gestational hypertension (GH)
  — Preeclampsia
  — Eclampsia
• Chronic hypertension
• Preeclampsia with superimposed chronic hypertension
• Present 20 weeks before pregnancy
• New occurrence of proteinuria or thrombocytopenia
• Hypertension During Pregnancy (cont.)
• An increase over baseline blood pressure of 30 mm Hg or more systolic
• 15 mm Hg diastolic will place the woman in a high-risk category for GH
• Risk Factors for GH
• First pregnancy
• Obesity
• Family history of GH
• Age over 40 years or under 19 years
• Multifetal pregnancy
• Chronic hypertension
• Chronic renal disease
• Diabetes mellitus
• Manifestations of and Systems Affected by GH
  • Hypertension
  • Edema
  • Proteinuria
  • Blood clotting
  • Central nervous system
  • Eyes
  • Urinary tract
  • Respiratory system
  • Gastrointestinal system and liver
• Management of GH
• Depends on severity of the hypertension and on the maturity of the fetus
• Treatment focuses on
  — Maintaining blood flow to the woman’s vital organs and to the placenta
Preventing convulsions

- Conservative Treatment
- Activity restriction
- Maternal assessment of fetal activity
- Blood pressure monitoring
- Daily weight
- Checking urine for protein
- Drug therapy
  - Magnesium sulfate
    - Calcium gluconate reverses effects of magnesium sulfate
  - Antihypertensives

Bleeding Incompatibilities

- Rh-negative blood type is an autosomal recessive trait
- Rh-positive blood type is a dominant trait
- Rh incompatibility can only occur if the woman is Rh-negative and the fetus is Rh-positive

Isoimmunization

- The leaking of fetal Rh-positive blood into the Rh-negative mother’s circulation, causing her body to respond by making antibodies to destroy the Rh-positive erythrocytes
- With subsequent pregnancy, the woman’s antibodies against Rh-positive blood cross the placenta and destroy the fetal Rh-positive erythrocytes before the infant is born

Erythroblastosis Fetalis

Erythroblastosis Fetalis (cont.)
• Occurs when the maternal anti-Rh antibodies cross the placenta and destroy fetal erythrocytes

• Requires RhoGAM to be given at 28 weeks and within 72 hours of delivery to the mother
  — Also given after amniocentesis, woman who experiences bleeding during pregnancy

• Fetal assessment tests must be done throughout pregnancy

• An intrauterine transfusion may be done for the severely anemic fetus

• Pregnancy Complicated by Medical Conditions

• Diabetes Mellitus (DM)
  • Classified if preceded pregnancy
  • Type 1: pathologic disorder
  • Type 2: insulin resistance; genetic predisposition

• Pregestational DM: Type 1 or 2 DM

• Gestational DM (GDM)
  — Glucose intolerance with onset during pregnancy
  — In true GDM, glucose usually returns to normal by 6 weeks postpartum

• Effects of Pregnancy on Glucose Metabolism

• Hormones (estrogen and progesterone), insulinase (an enzyme), and increased prolactin levels have two effects
  — Increased resistance of cells to insulin
  — Increased speed of insulin breakdown

• Gestational Diabetes Mellitus (GDM)
  • If woman cannot increase her insulin production, she will have periods of hyperglycemia
• Because fetus is continuously drawing glucose from the mother, she will also experience hypoglycemia between meals and during the night
• During the second and third trimesters, fetus is at risk for organ damage from hyperglycemia because fetal tissue has increased tissue resistance to maternal insulin action
• Pregestational Diabetes Mellitus
• Major risk for congenital anomalies to occur from maternal hyperglycemia during the embryonic period of development
• Factors Linked to GDM
• Maternal obesity (>90 kg or 198 lbs)
• Large infant (>4000 g or about 9 lbs)
• Maternal age older than 25 years
• Previous unexplained stillbirth or infant having congenital abnormalities
• History of GDM in a previous pregnancy
• Family history of DM
• Fasting glucose over 126 mg/dL or postmeal glucose over 200 mg/dL
• Macrosomic Infant
• Treatment
• Diet
• Monitoring blood glucose levels
• Ketone monitoring
• Exercise
• Fetal assessment
• Care During Labor of the Woman with GDM
• Intravenous infusion of dextrose may be needed
• Regular insulin
• Assess blood glucose levels hourly and adjust insulin administration accordingly
• Care of the Neonate Whose Mother Has GDM
• May have the following
  — Hypoglycemia
  — Respiratory distress
• Injury related to macrosomia
• Blood glucose monitored closely for at least the first 24 hours after birth
• Breastfeeding should be encouraged
• Heart Disease
• Manifestations
  — Increased levels of clotting factors
  — Increased risk of thrombosis
    • If woman’s heart cannot handle increased workload, congestive heart failure (CHF) results
    • Fetus suffers from reduced placental blood flow
• Signs of CHF During Pregnancy
• Persistent cough
• Moist lung sounds
• Fatigue or fainting on exertion
• Difficulty breathing on exertion
• Orthopnea
• Severe pitting edema of the lower extremities or generalized edema
• Palpitations
• Changes in fetal heart rate
  — Indicating hypoxia or growth restriction
• Treatment
• Under care of both obstetrician and cardiologist
• Priority care is limiting physical activity
  — Drug therapy
  — May include beta-adrenergic blockers, anticoagulants, diuretics
• Vaginal birth is preferred as it carries less risk for infection or respiratory complications
• Anemia
• The reduced ability of the blood to carry oxygen to the cells
• Four types are significant during pregnancy
  — Two are nutritional
    • Iron deficiency
    • Folic acid deficiency
  — Two are genetic disorders
    • Sickle cell disease
    • Thalassemia
• Nutritional Anemias
• Symptoms
- Easily fatigued
- Skin and mucous membranes are pale
- Shortness of breath
- Pounding heart
- Rapid pulse (with severe anemia)

**Iron-Deficiency Anemia**
- RBCs are small (microcytic) and pale (hypochromic)
- Prevention
  - Iron supplements
  - Vitamin C may enhance absorption
  - Do not take iron with milk or antacids
    - Calcium impairs absorption
- Treatment
  - Oral doses of elemental iron
  - Continue therapy for about 3 months after anemia has been corrected

**Folic-Acid Deficiency Anemia**
- Large, immature RBCs (megaloblastic anemia)
- Anticonvulsants, oral contraceptives, sulfa drugs, and alcohol can decrease absorption of folate from meals
- Folate essential for normal growth and development
- Prevention
  - Daily supplement of 400 mcg (0.4 mg) per day
- Treatment
Folate deficiency is treated with folic acid supplementation

1 mg/day (over twice the amount of the preventive supplement)

- Dose may be higher for women who have had a previous child with a neural tube defect

- Genetic Anemias

- Sickle Cell Disease

- Autosomal recessive disorder

- Abnormal hemoglobin

- Causes erythrocytes to become distorted sickle (crescent) shaped during hypoxic or acidotic episodes

- Abnormally shaped blood cells do not flow smoothly

- Can clog small blood vessels

- Pregnancy can cause a crisis

- Massive erythrocyte destruction and vessel occlusion
  - Risk to fetus is occlusion of vessels that supply the placenta

- Can lead to preterm birth, growth restriction, and fetal demise

- Oxygen and fluids are given continuously throughout labor

- Thalassemia

- Genetic trait causes abnormality in one of two chains of hemoglobin

- Beta chain seen most often in U.S.
  - Can inherit abnormal gene from each parent, causing beta-thalassemia major
  - If only one abnormal gene is inherited, infant will have beta-thalassemia minor

- Woman with beta-thalassemia minor has few problems, other than mild anemia

- Fetus does not appear affected

- Iron supplements may cause iron overload
  - Body absorbs and stores iron in higher-than-usual amounts
Nursing Care for Anemias During Pregnancy

- Teach woman about foods that are high in iron and folic acid
- Teach how to take supplements
- Do not take iron supplements with milk
- Do not take antacids with iron
- When taking iron, stools will be dark green to black
- The woman with sickle cell disease requires close medical and nursing care
- Taught to prevent dehydration and activities that cause hypoxia
- Avoid situations where exposure to infection is more likely
- Report any signs of infection promptly

Infections

- Acronym **TORCH** is used to describe infections that can be devastating to the fetus or newborn
  - **Toxoplasmosis**
  - **Other**
  - **Rubella**
  - **Cytomegalovirus**
  - **Herpes**
- **Viral Infections**
- **No effective therapy**
- **Immunizations can prevent some infections**
- **Cytomegalovirus**
- **Infected infant may have**
Mental retardation
Seizures
Blindness
Deafness
Dental abnormalities
Petechiae

Treatment
No effective treatment is known
Therapeutic abortion may be offered if CMV infection is discovered early in pregnancy

Rubella
Mild viral disease
Low fever and rash
Destructive to developing fetus
If woman receives a rubella vaccine prior to pregnancy, she should not get pregnant for at least 1 month
Not given during pregnancy because vaccine is from a live virus

Effects on embryo or fetus
Microcephaly (small head size)
Mental retardation
Congenital cataracts
Deafness
Cardiac effects
Intrauterine growth restriction (IUGR)

- Herpesvirus
  - Two types
    - Type 1: likely to cause fever blisters or cold sores
    - Type 2: likely to cause genital herpes
    - After primary infection, lies dormant in the nerves, can reactivate at any time
    - Initial infection during first half of pregnancy may cause spontaneous abortion, IUGR, and preterm labor
    - Infant can be infected in one of two ways
  - Neonatal herpes can be
    - Localized
    - Disseminated (widespread)
    - High mortality rate
  - Treatment and nursing care
    - Avoid contact with lesions
    - Mother and infant do not need to be isolated as long as direct contact with lesions is avoided
    - Breastfeeding is possible IF no lesions are present on the breasts

- Hepatitis B
  - Transmitted by blood, saliva, vaginal secretions, semen, and breast milk; can also cross the placenta
  - Fetus may be infected transplacentally or by contact with blood or vaginal secretions during delivery
  - Upon delivery, the neonate should receive a single dose of hepatitis B immune globulin, followed by the hepatitis B vaccine
  - Risk for hepatitis B
    - Intravenous drug use
    - Multiple sexual partners
Repeated infection with STI

Occupational exposure to blood products and needle sticks

Hemodialysis

Multiple blood transfusions or other blood products

Household contact with hepatitis carrier or hemodialysis patient

Contact with persons arriving from countries where there is a higher incidence of the disease

- Human Immunodeficiency Virus
- Virus that causes AIDS
- Cripples immune system
- No known immunization or curative treatment
- Acquired in one of three ways
  - Sexual contact
  - Parenteral or mucous membrane exposure to infected body fluids
  - Perinatal exposure
- Infant may be infected
  - Transplacentally
  - Through contact with infected maternal secretions at birth
  - Through breast milk

- Nursing Care
  - Educate the HIV-positive woman on methods to reduce the risk of transmission to her developing fetus/infant
  - Pregnant women with HIV/AIDS are more susceptible to infection
  - Breastfeeding is absolutely contraindicated for mothers who are HIV-positive
- Nonviral Infections
- Toxoplasmosis
  - Parasite acquired by contact with cat feces or raw meat
• Transmitted through placenta
• Congenital toxoplasmosis includes the following possible signs
  — Low birthweight
  — Enlarged liver and spleen
  — Jaundice
  — Anemia
  — Inflammation of eye structures
  — Neurological damage
• Treatment
  — Therapeutic abortion
• Preventive measures
  — Cook all meat thoroughly
  — Wash hands and all kitchen surfaces after handling raw meat
  — Avoid uncooked eggs and unpasteurized milk
  — Wash fresh fruits and vegetables well
  — Avoid materials contaminated with cat feces
• Group B Streptococcus (GBS) Infection
• Leading cause of perinatal infection with high mortality rate
• Organism found in woman’s rectum, vagina, cervix, throat, or skin
• The risk of exposure to the infant is greater if the labor is long or the woman experiences premature rupture of membranes
• GBS significant cause of maternal postpartum infection
  — Symptoms include elevated temperature within 12 hours after delivery, rapid heart rate, abdominal distention
• Can be deadly to the infant
• Treatment
Penicillin

- Tuberculosis
  - Increasing incidence in the U.S.
  - Multidrug-resistant strains also increasing
  - Mother can be tested via PPD skin test or serum Quantiferon Gold®
  - If positive, chest x-ray and possibly sputum specimens will be needed
  - Report to local public health department (PHD) if active pulmonary TB is suspected
  - If mother active, infant must be kept away from mother until she has been cleared by the PHD

- Sexually Transmitted Infections (STIs)
  - Common mode of transmission is sexual intercourse
  - Infections that can be transmitted
    - Syphilis, gonorrhea, Chlamydia, trichomoniasis, and Condylomata acuminata
  - Vaginal changes during pregnancy increase the risk of transmission

- Urinary Tract Infections
  - Pregnancy alters self-cleaning action due to pressure on urinary structures
  - Prevents bladder from emptying completely
  - Retained urine becomes more alkaline
  - May develop cystitis
    - Burning with urination
    - Increased frequency and urgency of urination
    - Normal or slightly elevated temperature

- Pyelonephritis
— High fever
— Chills
— Flank pain or tenderness
— Nausea and vomiting

• Environmental Hazards During Pregnancy

• Bioterrorism and the pregnant woman

• Three basic categories
  — A—can be easily transmitted from person to person
  — B—Can be spread via food and water
  — C—Can be spread via manufactured weapons designed to spread disease

• Substance abuse
  — Questions should focus on how the information will help nurses and physicians provide the safest and most appropriate care to the pregnant woman and her infant

• Alcohol
  — A single episode of consuming two alcoholic drinks can lead to the loss of some fetal brain cells

• Trauma During Pregnancy

• Three leading causes of traumatic death
  — Automobile accidents
  — Homicide
  — Suicide

• Battering
  — Bruises in various stages of healing
Nursing Tip

If a woman confides that she is being abused during pregnancy, this information must be kept absolutely confidential.

Her life may be in danger if her abuser learns that she has told anyone.

She should be referred to local shelters, but the decision to leave her abuser is hers alone.