

- 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.