Chapter 9

Assessment for Risk Factors
Assessment for Risk Factors

- 500,000 of 4 million births in United States each year categorized high risk because of maternal or fetal complications
- Identification of risks, with appropriate and timely intervention, prevents morbidity and mortality of mothers and infants
- Among those at risk are homeless, single, and uninsured pregnant women without access to prenatal care
Assessment for Risk Factors—cont’d

- Psychosocial factors involving maternal behaviors and adverse lifestyles have negative effect on mother and fetus
- With the changing demographics of the United States more women are identified as at risk from factors other than biophysical
Definition and Scope of the Problem

- High risk pregnancy
  - High risk pregnancy: life or health of mother or fetus is jeopardized
  - For mother, high risk status arbitrarily extends through puerperium (30 days after childbirth)
  - Maternal complications usually resolved within 1 month of birth
Definition and Scope of the Problem—cont’d

- High risk pregnancy
  - High risk diagnosis imposes crisis on family
    - Loss of pregnancy before anticipated date
    - Development of gestational diabetes mellitus with its potential complications
    - Neonate who does not meet cultural, societal, or familial norms and expectations
Maternal health problems

- Leading causes of maternal mortality in the United States
  - Pregnancy-induced hypertension
  - Pulmonary embolism
  - Hemorrhage
Definition and Scope of the Problem—cont’d

- Maternal health problems
  - Factors related to maternal death include:
    - Age: younger than 20 years, older than 35 years
    - Lack of prenatal care
    - Low educational attainment
    - Unmarried status
    - Nonwhite race
Definition and Scope of the Problem—cont’d

- Fetal and neonatal health problems
  - Congenital anomaly is leading cause of neonatal death
  - Other causes of neonatal death include:
    - Disorders related to short gestation and low birth weight
    - Sudden infant death
    - Respiratory distress syndrome
    - Effects of maternal complications
Definition and Scope of the Problem—cont’d

- Regionalization of health care services
  - Not feasible for each hospital to maintain services for high risk patients
  - Emergence of regionalization of high risk health care
  - Establishment of guidelines to determine level of care
  - Subspecialty care provided by maternal-fetal-medicine
Definition and Scope of the Problem—cont’d

- Assessment of risk factors
  - Genetic risk
    - Heritable factors that originate within the mother or fetus
  - Demographic risks
    - Result from geographic location, socioeconomic status, racial disparity, and occupational hazards
Definition and Scope of the Problem—cont’d

- Assessment of risk factors
  - Behavioral risks
    - Arise from mother and family and place the fetus at increased risk
    - Include substance abuse and poor maternal nutrition
  - Risk factors are interrelated and cumulative
Antepartum Testing/Biophysical Assessment

- Daily fetal movement count
- Ultrasonography
  - Indications for use
    - Fetal heart rate activity
    - Gestational age
    - Fetal growth
    - Fetal anatomy
    - Placental position and function
    - Adjunct to other invasive tests
Antepartum Testing/Biophysical Assessment—cont’d

- Ultrasonography
  - Fetal well-being
    - Amniotic fluid volume
    - Doppler blood flow analysis
    - Biophysical profile
  - Nursing role
    - Counseling and education regarding the procedure
Magnetic resonance imaging (MRI)

- Fetal structure
- Placenta (position, density, and presence of gestational trophoblastic disease)
- Quantity of amniotic fluid
- Maternal structures (uterus, cervix, adnexa, and pelvis)
- Biochemical status of tissues and organs
- Soft tissue, metabolic, or functional anomalies
Biochemical Assessment

- Amniocentesis
  - Maternal
    - Hemorrhage
    - Fetomaternal hemorrhage
    - Infection
    - Labor
    - Abruptio placentae
    - Damage to intestines or bladder
    - Amniotic fluid embolism
Biochemical Assessment—cont’d

• Amniocentesis
  ➢ Fetal
    • Death
    • Hemorrhage
    • Infection (amnionitis)
    • Injury from needle
    • Miscarriage or preterm labor
    • Leakage of amniotic fluid
Biochemical Assessment—cont’d

- Amniocentesis
  - Indication for use
    - Genetic disorders
    - Fetal maturity
    - Fetal hemolytic disease
    - Meconium
      - Antepartal
      - Intrapartal
Biochemical Assessment—cont’d

- Percutaneous umbilical blood sampling (PUBS) or cordocentesis
  - Direct access to fetal circulation
  - Insertion of needle directly into a fetal umbilical vessel under ultrasound guidance
Biochemical Assessment—cont’d

- Chorionic villus sampling (CVS)
  - Earlier diagnosis and rapid results
  - Performed between 10 and 12 weeks of gestation
  - Removal of small tissue specimen from fetal portion of placenta
    - Chorionic villi originate in zygote
    - Tissue reflects genetic makeup of fetus
Biochemical Assessment—cont’d

- Maternal assays
  - Alpha-fetoprotein (AFP)
    - Maternal serum levels screened for neural tube defects (NTDs)
    - 80% to 85% of open NTDs and abdominal wall defects can be detected early
    - Recommended for all pregnant women
Biochemical Assessment—cont’d

- Maternal assays
  - Coombs’ test
    - Rh incompatibility
    - Detects other antibodies for incompatibility with maternal antigens
Antepartal Assessment Using
Electronic Fetal Monitoring

- Indications
- Fetal responses to hypoxia and asphyxiation
- Variability
- Nonstress test (fetal activity determination)
  - Procedure
  - Interpretation
- Vibroacoustic stimulation
Antepartal Assessment Using Electronic Fetal Monitoring—cont’d

- Contraction stress test (CST)
  - Procedure
    - Nipple-stimulated contraction test
    - Oxytocin-stimulated contraction test
  - Interpretation
    - Provides a warning of fetal compromise earlier than NST
Nursing Role in Antepartal Assessment for Risk

- Psychologic considerations
  - Women undergoing antepartal assessments are anxious
    - Tests because of suspected fetal compromise, deterioration of maternal condition, or both
    - Third-trimester women concerned about protecting themselves and fetuses and consider themselves vulnerable
Psychologic Implications of High Risk Pregnancy

- When woman is diagnosed with high risk pregnancy, she and her family will likely experience stress related to the diagnosis.

- The woman may exhibit various psychologic responses, including:
  - Anxiety
  - Low self-esteem and guilt
  - Frustration
  - Inability to function
Key Points

- High risk pregnancy: life or well-being of the mother or infant is jeopardized
- Pregnancy, fetus, or neonate can be placed at risk by biophysical, sociodemographic, psychosocial, and environmental factors
- Psychosocial perinatal warning indicators include characteristics of parents, child, support systems, and family circumstances
Key Points—cont’d

- Racial and ethnic disparities in maternal and perinatal mortality rates in United States
- Mortality rate decreases when risks are identified early and intensive care is applied
- Biophysical assessment techniques include fetal movement counts, ultrasonography, and MRI
- Biochemical monitoring techniques include amniocentesis, PUBS, CVS, and maternal serum AFP
Key Points—cont’d

- Reactive NSTs and negative CSTs suggest fetal well-being
- Most assessment tests have some degree of risk for mother and fetus and cause anxiety for woman and family