LEARNING OBJECTIVES

• Identify causes, signs and symptoms, possible complications, and medical and nursing management of postpartum hemorrhage.
• Differentiate the causes of postpartum infection.
• Summarize assessment and care of women with postpartum infection.
• Describe thromboembolic disorders, including incidence, etiology, signs and symptoms, and management.
• Describe sequelae of childbirth trauma.
• Discuss postpartum emotional complications, including incidence, risk factors, signs and symptoms, and management.
• Summarize the role of the nurse in the home setting in assessing potential problems and managing care of women with postpartum complications.

KEY TERMS AND DEFINITIONS

endometritis Postpartum uterine infection, often beginning at the site of the placental implantation hemorrhagic (hypovolemic) shock Clinical condition in which the peripheral blood flow is inadequate to return sufficient blood to the heart for normal function, particularly oxygen transport to the organs or tissue inversion of the uterus Condition in which the uterus is turned inside out so that the fundus invades into the cervix or vagina mastitis Infection in a breast, usually confined to a milk duct, characterized by influenza-like symptoms and redness and tenderness in the affected breast mood disorders Disorders that have a disturbance in the prevailing emotional state as the dominant feature; cause is unknown pelvic relaxation Refers to the lengthening and weakening of the fascial supports of pelvic structures postpartum depression (PPD) Depression occurring within 4 weeks of childbirth, lasting longer than postpartum blues and characterized by a variety of symptoms that interfere with activities of daily living and care of the baby postpartum hemorrhage (PPH) Excessive bleeding after childbirth; traditionally defined as a loss of 500 ml or more after a vaginal birth and 1000 ml after a cesarean birth puerperal infection Infection of the pelvic organs during the postbirth period; also called postpartum infection subinvolution Failure of a part (e.g., the uterus) to reduce to its normal size and condition after enlargement from functional activity (e.g., pregnancy) thrombophlebitis Inflammation of a vein with secondary clot formation urinary incontinence (UI) Uncontrollable leakage of urine uterine atony Relaxation of uterus; leads to postpartum hemorrhage

ELECTRONIC RESOURCES

Additional information related to the content in Chapter 25 can be found on the companion website at http://evolve.elsevier.com/Lowdermilk/Maternity/
• NCLEX Review Questions
• WebLinks or on the interactive companion CD
• Plan of Care—Postpartum Hemorrhage
• Plan of Care—Postpartum Depression
Collaborative efforts of the health care team are needed to provide safe and effective care to the woman and family experiencing postpartum complications. This chapter focuses on hemorrhage, infection, sequelae of childbirth trauma, and psychologic complications.

POSTPARTUM HEMORRHAGE

Definition and Incidence

Postpartum hemorrhage (PPH) continues to be a leading cause of maternal morbidity and mortality in the United States (Papp, 2003) and worldwide. It is a life-threatening event that can occur with little warning and is often unrecognized until the mother has profound symptoms. PPH has been traditionally defined as the loss of more than 500 ml of blood after vaginal birth and 1000 ml after cesarean birth. A 10% change in hematocrit between admission for labor and postpartum or the need for erythrocyte transfusion also has been used to define PPH (American College of Obstetricians and Gynecologists [ACOG], 1998). However, defining PPH is not a clear-cut issue. ACOG states that hemorrhage is difficult to define clinically. Diagnosis is often based on subjective observations, with blood loss often being underestimated by as much as 50% (ACOG, 1998).

Traditionally, PPH has been classified as early or late with respect to the birth. Early, acute, or primary PPH occurs within 24 hours of the birth. Late or secondary PPH occurs more than 24 hours but less than 6 weeks postpartum (ACOG, 1998). Today’s health care environment encourages shortened stays after birth, thereby increasing the potential for acute episodes of PPH to occur outside the traditional hospital or birth center setting.

Etiology and Risk Factors

It is helpful to consider the problem of excessive bleeding with reference to the stages of labor. From birth of the infant until separation of the placenta, the character and quantity of blood passed may suggest excessive bleeding. For example, dark blood is probably of venous origin, perhaps from varices or superficial lacerations of the birth canal. Bright blood is arterial and may indicate deep lacerations of the cervix. Spurts of blood with clots may indicate partial placental separation. Failure of blood to clot or remain clotted indicates a pathologic condition or coagulopathy such as disseminated intravascular coagulation (DIC) (ACOG, 1998).

Excessive bleeding may occur during the period from the separation of the placenta to its expulsion or removal. Commonly such excessive bleeding is the result of incomplete placental separation, undue manipulation of the fundus, or excessive traction on the cord. After the placenta has been expelled or removed, persistent or excessive blood loss usually is the result of atony of the uterus or inversion of the uterus into the vagina. Late PPH may be the result of subinvolution of the uterus, endometritis, or retained placental fragments (ACOG, 1998). Risk factors for PPH are listed in Box 25-1.

Uterine Atony

Uterine atony is marked hypotonia of the uterus. Normally, placental separation and expulsion are facilitated by contraction of the uterus, which also prevents hemorrhage from the placental site. The corpus is in essence a basket-weave of strong, interlacing smooth muscle bundles through which many large maternal blood vessels pass (see Fig. 4-3). If the uterus is flaccid after detachment of all or part of the placenta, brisk venous bleeding occurs, and normal coagulation of the open vasculature is impaired and continues until the uterine muscle is contracted.

Uterine atony is the leading cause of PPH, complicating approximately one in 20 births (Shevell & Malone, 2003). It is associated with high parity, hydramnios, a macrosomic fetus, and multifetal gestation. In such conditions, the uterus is "overstretched" and contracts poorly after the birth. Other causes of atony include traumatic birth, use of halogenated anesthesia (e.g., halothane) or magnesium sulfate, rapid or prolonged labor, chorioamnionitis, and use of oxytocin for labor induction or augmentation (Shevell & Malone, 2003).

Risk Factors for Postpartum Hemorrhage

- Large fetus
- Multiple fetuses
- Hydramnios
- Distention with clots
- Anesthesia and analgesia
- Conduction anesthesia
- Previous history of uterine atony
- High parity
- Prolonged labor, oxytocin-induced labor
- Trauma during labor and birth
- Forceps-assisted birth
- Vacuum-assisted birth
- Cesarean birth
- Lacerations of the birth canal
- Retained placental fragments
- Placenta previa
- Inversion of the uterus
- Manual removal of a retained placenta
- Magnesium sulfate administration during labor or postpartum period
- Endometritis
Lacerations of the Genital Tract
Lacerations of the cervix, vagina, and perineum also are causes of PPH. Hemorrhage related to lacerations should be suspected if bleeding continues despite a firm, contracted uterine fundus. This bleeding can be a slow trickle, an ooze, or frank hemorrhage. Factors that influence the causes and incidence of obstetric lacerations of the lower genital tract include operative birth, precipitate birth, congenital abnormalities of the maternal soft parts, and contracted pelvis. Size, abnormal presentation, and position of the fetus; relative size of the presenting part and the birth canal; previous scarring from infection, injury, or operation; and vulvar, perineal, and vaginal varicosities also can cause lacerations.

Extreme vascularity in the labial and periclitoral areas often results in profuse bleeding if laceration occurs. Hematomas also may be present. Lacerations of the perineum are the most common of all injuries in the lower portion of the genital tract. These are classified as first, second, third, and fourth degree (see Chapter 14). An episiotomy may extend to become either third- or fourth-degree laceration. Prolonged pressure of the fetal head on the vaginal mucosa ultimately interferes with the circulation and may produce ischemic or pressure necrosis. The state of the tissues in combination with the type of birth may result in deep vaginal lacerations, with consequent predisposition to vaginal hematomas.

Pelvic hematomas may be vulvar, vaginal, or retroperitoneal in origin. Vaginal hematomas are the most common. Pain is the most common symptom, and most vulvar hematomas are visible. Vaginal hematomas occur more commonly in association with a forceps-assisted birth, an episiotomy, or primigravidity (Benedetti, 2002). During the postpartum period, if the woman reports a persistent perineal or rectal pain or a feeling of pressure in the vagina, a careful examination is made. However, a retroperitoneal hematoma may cause minimal pain, and the initial symptoms may be signs of shock (Benedetti, 2002).

Cervical lacerations usually occur at the lateral angles of the external os. Most are shallow, and bleeding is minimal. More extensive lacerations may extend into the vaginal vault or into the lower uterine segment.

Retained Placenta
Nonadherent retained placenta
Retained placenta may result from partial separation of a normal placenta, entrapment of the partially or completely separated placenta by an hourglass constricting ring of the uterus, mismanagement of the third stage of labor, or abnormal adherence of the entire placenta or a portion of the placenta to the uterine wall. Placental retention because of poor separation is common in very preterm births (20 to 24 weeks of gestation).

Management of nonadherent retained placenta is by manual separation and removal by the primary health care provider. Supplementary anesthesia is not usually needed for women who have had regional anesthesia for birth. For other women, administration of light nitrous oxide and oxygen inhalation anesthesia or intravenous (IV) thiopental facilitates uterine exploration and placental removal. After this removal, the woman is at continued risk for PPH and for infection.

Adherent retained placenta
Abnormal adherence of the placenta occurs for reasons unknown, but it is thought to result from zygotic implantation in an area of defective endometrium so that there is no zone of separation between the placenta and the decidua. Attempts to remove the placenta in the usual manner are unsuccessful, and laceration or perforation of the uterine wall may result, putting the woman at great risk for severe PPH and infection (Cunningham et al., 2005).

Unusual placental adherence may be partial or complete. The following degrees of attachment are recognized:

- Placenta accreta—slight penetration of myometrium by placental trophoblast
- Placenta increta—deep penetration of myometrium by placenta
- Placenta percreta—perforation of uterus by placenta

Bleeding with complete or total placenta accreta may not occur unless separation of the placenta is attempted. With more extensive involvement, bleeding will become profuse when removal of the placenta is attempted. Treatment includes blood component replacement therapy, and hysterectomy may be indicated (Clark, 2004).

Inversion of the Uterus
Inversion of the uterus after birth is a potentially life-threatening but rare complication. The incidence of uterine inversion is approximately 1 in 2000 to 2500 births (ACOG, 1998), and the condition may recur with a subsequent birth. Uterine inversion may be partial or complete. Complete inversion of the uterus is obvious; a large, red, rounded mass (perhaps with the placenta attached) protrudes 20 to 30 cm outside the introitus. Incomplete inversion cannot be seen but must be felt; a smooth mass will be palpable through the dilated cervix. Contributing factors to uterine inversion include fundal implantation of the placenta, vigorous fundal pressure, excessive traction applied to the cord, uterine atony, leiomyomas, and abnormally adherent placental tissue (Bowes & Thorp, 2004). Uterine inversion occurs most often in multiparous women and with placenta accreta or increta. The primary presenting signs of uterine inversion are hemorrhage, shock, and pain. Prevention—always the easiest, cheapest, and most effective therapy—is especially appropriate for uterine inversion. The umbilical cord should not be pulled on strongly unless the placenta has definitely separated.
Subinvolution of the Uterus

Late postpartum bleeding may occur as a result of subinvolution of the uterus. Recognized causes of subinvolution include retained placental fragments and pelvic infection. Signs and symptoms include prolonged lochial discharge, irregular or excessive bleeding, and sometimes hemorrhage. A pelvic examination usually reveals a uterus that is larger than normal and that may be boggy.

CARE MANAGEMENT

Assessment and Nursing Diagnoses

PPH may be sudden and even exsanguinating. The nurse must therefore be alert to the symptoms of hemorrhage and hypovolemic shock and be prepared to act quickly to minimize blood loss (Fig. 25-1 and Box 25-2).
The woman’s history should be reviewed for factors that cause predisposition to PPH (see Box 25-1). The fundus is assessed to determine whether it is firmly contracted at or near the level of the umbilicus. Bleeding should be assessed for color and amount. The perineum is inspected for signs of lacerations or hematomas to determine the possible source of bleeding.

Vital signs may not be reliable indicators of shock immediately postpartum because of the physiologic adaptations of this period. However, frequent vital sign measurements during the first 2 hours after birth may identify trends related to blood loss (e.g., tachycardia, tachypnea, decreasing blood pressure).

Assessment for bladder distention is important because a distended bladder can displace the uterus and prevent contraction. The skin is assessed for warmth and dryness; nail beds are checked for color and promptness of capillary refill. Laboratory studies include evaluation of hemoglobin and hematocrit levels.

Late PPH develops at least 24 hours after the birth or later in the postpartum period. The woman may be at home when the symptoms occur. Discharge teaching should emphasize the signs of normal involution, as well as potential complications. Nursing diagnoses for women experiencing PPH include the following:

- **Deficient fluid volume related to**
  - excessive blood loss secondary to uterine atony, lacerations, or uterine inversion
  - blood and fluid volume replacement therapy
  - risk for infection related to
  - excessive blood loss or exposed placental attachment site

**Expected Outcomes of Care**

Expected outcomes of care for the woman experiencing PPH may include that the woman will do the following:

- Maintain normal vital signs and laboratory values
- Develop no complications related to excessive bleeding
- Express understanding of her condition, its management, and discharge instructions
- Identify and use available support systems

**Plan of Care and Interventions**

**Medical management**

Early recognition and acknowledgment of the diagnosis of PPH are critical to care management. The first step is to evaluate the contractility of the uterus. If the uterus is hypotonic, management is directed toward increasing contractility and minimizing blood loss.

The initial management of excessive postpartum bleeding is firm massage of the uterine fundus, expression of any clots in the uterus, prevention of bladder distention, and continuous IV infusion of 10 to 40 units of oxytocin added to 1000 ml of lactated Ringer’s or normal saline solution. If the uterus fails to respond to oxytocin, a 0.2-mg dose of ergonovine (Ergotrate) or methylergonovine (Methergine) may be given intramuscularly to produce sustained uterine contractions. However, it is more common to administer a 0.25-mg dose of a derivative of prostaglandin F$_2$-a (carboprost tromethamine) intramuscularly. It also can be given intramyometrially at cesarean birth or intrarectally after vaginal birth. Oral (400 mcg) and rectal (1000 mcg) administration of misoprostol also is used, but there is no consensus about efficacy (Berg & Smith, 2002).

See Table 25-1 for a comparison of drugs used to manage PPH. In addition to the medications used to contract the uterus, rapid administration of crystalloid solutions and/or blood or blood products will be needed to restore the woman’s intravascular volume (Mousa & Walkinshaw, 2001).

**NURSE ALERT**

Use of ergonovine or methylergonovine is contraindicated in the presence of hypertension or cardiovascular disease. Prostaglandin F$_2$-a should be used.
used cautiously in women with cardiovascular disease or asthma (Bowes & Thorp, 2004).

Hypotonic uterus. Oxygen can be given to enhance oxygen delivery to the cells. A urinary catheter is usually inserted to monitor urine output as a measure of intravascular volume. Laboratory studies usually include a complete blood count with platelet count, fibrinogen, fibrin split products, prothrombin time, and partial thromboplastin time. Blood type and antibody screen are done if not previously performed (ACOG, 1998).

If bleeding persists, bimanual compression may be considered by the obstetrician or nurse-midwife. This procedure involves inserting a fist into the vagina and pressing the knuckles against the anterior side of the uterus, and then placing the other hand on the abdomen and massaging the posterior uterus with it. If the uterus still does not become firm, manual exploration of the uterine cavity for retained placental fragments is implemented. If the preceding procedures are ineffective, surgical management may be the only alternative. Surgical management options include vessel ligation (uteroovarian, uterine, hypogastric), selective arterial embolization, and hysterectomy (Shavel & Malone, 2003).

Bleeding with a contracted uterus. If the uterus is firmly contracted and bleeding continues, the source of bleeding still must be identified and treated. Assessment may include visual or manual inspection of the perineum, vagina, uterus, cervix, or rectum and laboratory studies (e.g., hemoglobin, hematocrit, coagulation studies, platelet count). Treatment depends on the source of the bleeding. Lacerations are usually sutured. Hematomas may be managed with observation, cold therapy, ligation of the bleeding vessel, or evacuation. Fluids and or blood replacement may be needed (Benedetti, 2002).

Uterine inversion. Uterine inversion is an emergency situation requiring immediate recognition, replacement of the uterus within the pelvic cavity, and correction of associated clinical conditions. Tocolytics (e.g., magnesium sulfate, terbutaline) or halogenated anesthetics may be given to relax the uterus before attempting replacement (Hostetler & Bosworth, 2000). Medical management of this condition includes repositioning the uterus, giving oxytocin after the uterus is repositioned, treating shock, and initiating broad-spectrum antibiotics (Benedetti, 2002; Bowes & Thorp, 2004).

Subinvolution. Treatment of subinvolution depends on the cause. Ergonovine, 0.2 mg every 4 hours for 2 or 3 days, and antibiotic therapy are the most common medications used (Cunningham et al., 2005). Dilution and curettage (D&C) may be needed to remove retained placental fragments or to debride the placental site.

Herbal remedies

Herbal remedies have been used with some success to control PPH after the initial management and control of bleeding, particularly outside the United States. Some herbs have homeostatic actions, whereas others work as oxytocic agents to contract the uterus (Tiran & Mack, 2000). Box 25-3 lists herbs that have been used and their actions. However, published evidence of the safety and efficacy of herbal therapy is lacking. Evidence from well-controlled studies is needed before recommendation for practice should be made (Brucker, 2001).
BOX 25-3
Herbal Remedies for Postpartum Hemorrhage

<table>
<thead>
<tr>
<th>HERB</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Witch hazel</td>
<td>Homeostatic</td>
</tr>
<tr>
<td>Lady’s mantle</td>
<td>Homeostatic</td>
</tr>
<tr>
<td>Blue cohosh</td>
<td>Oxytocic</td>
</tr>
<tr>
<td>Cotton root bark</td>
<td>Oxytocic</td>
</tr>
<tr>
<td>Shepherd’s purse</td>
<td>Promotes uterine contraction; vasoconstrictive</td>
</tr>
<tr>
<td>Alfalfa leaf</td>
<td>Increases availability of vitamin K; increases hemoglobin</td>
</tr>
<tr>
<td>Nettle</td>
<td>Increases availability of vitamin K; increases hemoglobin</td>
</tr>
<tr>
<td>Raspberry leaf</td>
<td>Homeostatic; promotes uterine contraction</td>
</tr>
</tbody>
</table>


Nursing interventions

Immediate nursing care of the woman with PPH includes assessment of vital signs, uterine consistency, bleeding, and administration of oxytocin or other drugs to stimulate uterine contraction according to standing orders or protocols. Venous access is established if not already in place. The primary health care provider is notified if not present.

The woman and her family will be anxious about her condition. The nurse can intervene by calmly providing explanations about interventions being performed and the need to act quickly.

After the bleeding has been controlled, the care of the woman with lacerations of the perineum is similar to that of women with episiotomies (analgesia as needed for pain and hot or cold applications as necessary). The need for increased roughage in the diet and increased intake of fluids is emphasized. Stool softeners may be used to assist the woman in reestablishing bowel habits without straining and putting stress on the suture lines.

Nurse Alert To avoid injury to the suture line, a woman with third- or fourth-degree lacerations is not given rectal suppositories or enemas or digital rectal examinations. The care of the woman who has experienced an inversion of the uterus focuses on immediate stabilization of hemodynamic status. This requires close observation of her response to treatment to prevent shock or fluid overload. If the uterus has been repositioned manually, care must be taken to avoid aggressive fundal massage.

Discharge instructions for the woman who has had PPH are similar to those for any postpartum woman. In addition, she should be told that she will probably feel fatigued, even exhaustion, and will need to limit her physical activities to conserve her strength. She may need instructions in increasing her dietary iron and protein intake and iron supplementation to rebuild lost red blood cell (RBC) volume. She may need assistance with infant care and household activities until she has regained strength. Some women have problems with delayed or insufficient lactation and postpartum depression (PPD). Referrals for home care follow-up or to community resources may be needed (see Resources at the end of this chapter).

Evaluation

The nurse can be reasonably assured that care was effective to the extent that the expected outcomes were achieved (Plan of Care).

HEMORRHAGIC (HYPOVOLEMIC) SHOCK

Hemorrhage may result in hemorrhagic (hypovolemic) shock. Shock is an emergency situation in which the perfusion of body organs may become severely compromised and death may occur. Physiologic compensatory mechanisms are activated in response to hemorrhage. The adrenal glands release catecholamines, causing arterioles and venules in the skin, lungs, gastrointestinal tract, liver, and kidneys to constrict. The available blood flow is diverted to the brain and heart and away from other organs, including the uterus. If shock is prolonged, the continued reduction in cellular oxygenation results in an accumulation of lactic acid and acidosis (from anaerobic glucose metabolism). Acidosis (reduced serum pH) causes arteriolar vasodilation; venule vasoconstriction persists. A circular pattern is established; that is, decreased perfusion, increased tissue anoxia and acidosis, edema formation, and pooling of blood further decrease the perfusion. Cellular death occurs. See the Emergency box for assessments and interventions for hemorrhagic shock.

Medical Management

Vigorous treatment is necessary to prevent adverse sequelae. Medical management of hypovolemic shock involves restoring circulating blood volume and treating the cause of the hemorrhage (e.g., lacerations, uterine atony, or inversion). To restore circulating blood volume, a rapid IV infusion of crystalloid solution is given at a rate of 3 ml infused for every 1 ml of estimated blood loss (e.g., 3000 ml infused for 1000 ml of blood loss). Packed RBCs are usually infused if the woman is still actively bleeding and no improvement in her condition is noted after the initial crystalloid infusion. Infusion of fresh-frozen plasma may be needed if clotting factors and platelet counts are below normal values (Cunningham et al., 2005).

Nursing Interventions

Hemorrhagic shock can occur rapidly, but the classic signs of shock may not appear until the postpartum woman has...
**Plan of Care: Postpartum Hemorrhage**

**Nursing Diagnosis** Deficient fluid volume related to postpartum hemorrhage

**Expected Outcome** Woman will demonstrate fluid balance as evidenced by stable vital signs, prompt capillary refill time, and balanced intake and output.

**Nursing Interventions/Rationales**
- Monitor vital signs, oxygen saturation, urine specific gravity, and capillary refill to provide baseline data.
- Measure and record amount and type of bleeding by weighing and counting saturated pads. If woman is at home, teach her to count pads and save any clots or tissue. If woman is admitted to hospital, save any clots and tissue for further examination to estimate type and amount of blood loss for fluid replacement.
- Provide quiet environment to promote rest and decrease metabolic demands.
- Give explanation of all procedures to reduce anxiety.
- Begin IV access with 18-gauge or larger needle for infusion of isotonic solution as ordered to provide fluid or blood replacement.
- Administer medications as ordered, such as oxytocin, methylergonovine, or prostaglandin F2α, to increase contractility of the uterus.
- Insert indwelling urinary catheter to provide most accurate assessment of renal function and hypovolemia.
- Prepare for surgical intervention as needed to stop the source of bleeding.

**Nursing Diagnosis** Ineffective tissue perfusion related to hypovolemia

**Expected Outcome** Woman will have stable vital signs, oxygen saturation, arterial blood gases, and adequate hematocrit and hemoglobin.

**Nursing Interventions/Rationales**
- Monitor vital signs, oxygen saturation, arterial blood gases, and hematocrit and hemoglobin to assess for hypovolemic shock and decreased tissue perfusion.
- Assess for any changes in level of consciousness to assess for evidence of hypoxia.
- Assess capillary refill, mucous membranes, and skin temperature to note indicators of vasomotor constriction.
- Give supplementary oxygen as ordered to provide additional oxygenation to tissues.
- Suction as needed, insert oral airway, to maintain clear, open airway for oxygenation.
- Monitor arterial blood gases to provide information about acidosis or hypoxia.
- Administer sodium bicarbonate if ordered to reverse metabolic acidosis.

**Nursing Diagnosis** Anxiety related to sudden change in health status

**Expected Outcome** Woman will verbalize that anxious feelings are diminished.

**Nursing Interventions/Rationales**
- Using therapeutic communication, evaluate woman’s understanding of events to provide clarification of any misperceptions.
- Provide calm, competent attitude and environment to aid in decreasing anxiety.
- Explain all procedures to decrease anxiety about the unknown.
- Allow woman to verbalize feelings to permit clarification of information and promote trust.
- Continue to assess vital signs or other clinical indicators of hypovolemic shock to evaluate if psychologic response of anxiety/intensifies physiologic indicators.

**Nursing Diagnosis** Risk for infection related to blood loss and invasive procedures as a result of postpartum hemorrhage

**Expected Outcome** Woman will verbalize understanding of risk factors. Woman will demonstrate no signs of infection.

**Nursing Interventions/Rationales**
- Maintain Standard Precautions and use good handwashing technique when providing care to prevent introduction of or spread of infection.
- Teach woman to maintain good handwashing technique (particularly before handling her newborn) and to maintain scrupulous perineal care with frequent change and careful disposal of perineal pads to avoid spread of microorganisms.
- Monitor vital signs to detect signs of systemic infection.
- Monitor level of fatigue and lethargy, evidence of chills, loss of appetite, nausea and vomiting, and abdominal pain, which are indicative of extent of infection and serve as indicators of status of infection.
- Monitor lochia for foul smell and profusion, which are indicative of infection.
- Monitor lochia for foul smell and profusion as indicators of infection state.
- Assist with collection of intrauterine cultures or other specimens for laboratory analysis to identify specific causative organism.
- Monitor laboratory values (i.e., white blood cell [WBC] count, cultures) for indicators of type and status of infection.
- Ensure adequate fluid and nutritional intake to fight infection.
- Administer and monitor broad-spectrum antibiotics if ordered to prevent infection.
- Administer antiemetics as ordered and necessary to reduce elevated temperature.

Lost 30% to 40% of blood volume. The nurse must continue to reassess the woman’s condition, as evidenced by the degree of measurable and anticipated blood loss, and mobilize appropriate resources.

Most interventions are instituted to improve or monitor tissue perfusion. The nurse continues to monitor the woman’s pulse and blood pressure. If invasive hemodynamic monitoring is ordered, the nurse may assist with the placement of the central venous pressure (CVP) or pulmonary artery (Swan-Ganz) catheter and monitor CVP, pulmonary artery pressure, or pulmonary artery wedge pressure as ordered (Poole & White, 2001). Additional assessments to be made include evaluation of skin temperature, color, and turgor, as well as assessment of the woman’s mucous membranes. Breath sounds should be auscultated before fluid volume replacement, if possible, to provide a baseline for future assessment. Inspection for oozing at the sites of incisions or injections and assessment of the presence of petechiae or ecchymosis in areas not associated with surgery or trauma are critical in the evaluation for DIC.
**Hemorrhagic Shock**

**ASSESSMENTS**
- Respirations
- Pulse
- Blood pressure
- Skin
- Urinary output
- Level of consciousness
- Mental status
- Central venous pressure

**INTERVENTION**
- Summon assistance and equipment.
- Start intravenous infusion per standing orders.
- Ensure patent airway; administer oxygen.
- Continue to monitor status.

**CHARACTERISTICS**
- Rapid and shallow
- Rapid, weak, irregular
- Decreasing (late sign)
- Cool, pale, clammy
- Decreasing
- Lethargy → coma
- Anxiety → coma
- Decreased

Oxygen is administered, preferably by nonrebreathing face mask, at 10 to 12 L/min to maintain oxygen saturation. Oxygen saturation should be monitored with a pulse oximeter, although measurements may not always be accurate in a woman with hypovolemia or decreased perfusion. Level of consciousness is assessed frequently and provides additional indications of blood volume and oxygen saturation. In early stages of decreased blood flow the woman may report "seeing stars" or feeling dizzy or nauseated. She may become restless and orthopneic. As cerebral hypoxia increases, she may become confused and react slowly or not at all to stimuli. Some women complain of headaches (Curran, 2003). An improved sensorium is an indicator of improved perfusion.

Continuous electrocardiographic monitoring may be indicated for the woman who is hypotensive or tachycardic, continues to bleed profusely, or is in shock. A Foley catheter with a urometer is inserted to allow hourly assessment of urinary output. The most objective and least invasive assessment of adequate organ perfusion and oxygenation is urinary output of at least 30 ml/hr (Benedetti, 2002). Blood may be drawn and sent to the laboratory for studies that include hemoglobin and hematocrit levels, platelet count, and coagulation profile.

**Fluid or Blood Replacement Therapy**

Critical to successful management of the woman with a hemorrhagic complication is establishment of venous access, preferably with a large-bore IV catheter. The establishment of two IV lines facilitates fluid resuscitation. Vigorous fluid resuscitation includes the administration of crystalloids (lactated Ringer’s, normal saline solutions), colloids (albumin), blood, and blood components (Benedetti, 2002). Fluid resuscitation must be carefully monitored because fluid overload may occur. Intravascular fluid overload occurs more frequently with colloid therapy. Transfusion reactions may follow administration of blood or blood components, including cryoprecipitates. Even in an emergency, each unit must be checked per hospital protocol. Complications of fluid or blood replacement therapy include hemolytic reactions, febrile reactions, allergic reactions, circulatory overload, and air embolism.

**LEGAL TIP**

Standard of Care for Bleeding Emergencies

The standard of care for obstetric emergency situations such as PPH or hypovolemic shock is that provision should be made for the nurse to implement actions independently. Policies, procedures, standing orders or protocols, and clinical guidelines should be established by each health care facility in which births occur and should be agreed on by health care providers involved in the care of obstetric patients.

**COAGULOPATHIES**

When bleeding is continuous and there is no identifiable source, a coagulopathy may be the cause. The woman’s coagulation status must be assessed quickly and continuously. The nurse may draw and send blood to the laboratory for studies. Abnormal results depend on the cause and may include increased prothrombin time, increased partial thromboplastin time, decreased platelets, decreased fibrinogen level, increased fibrin degradation products, and prolonged bleeding time. Causes of coagulopathies may be pregnancy complications such as idiopathic thrombocytopenic purpura (ITP), or von Willebrand disease and DIC.

**Idiopathic Thrombocytopenic Purpura**

ITP is an autoimmune disorder in which antiplatelet antibodies decrease the life span of the platelets. Thrombocytopenia, capillary fragility, and increased bleeding time are diagnostic findings. ITP may cause severe hemorrhage after cesarean birth or from cervical or vaginal lacerations. The incidence of postpartum uterine bleeding and vaginal hematomas also is increased. Neonatal thrombocytopenia, a result of the maternal disease process, occurs in about 50% of cases and is associated with high mortality (Kilpatrick & Laros, 2004).

Medical management focuses on control of platelet stability. If ITP was diagnosed during pregnancy, the woman likely was treated with corticosteroids or IV immunoglobulin. Platelet transfusions are usually given when there is significant bleeding. A splenectomy may be needed if the ITP does not respond to medical management.

**von Willebrand Disease**

von Willebrand disease, a type of hemophilia, is probably the most common of all hereditary bleeding disorders (Strozewski, 2000). Although von Willebrand disease is rare, it is among the most common congenital clotting defects in U.S. women of childbearing age. It results from a factor VIII deficiency and platelet dysfunction that is transmitted as an
Disseminated Intravascular Coagulation
DIC is a pathologic form of clotting that is diffuse and consumes large amounts of clotting factors, including platelets, fibrinogen, prothrombin, and factors V and VII. Widespread external bleeding, internal bleeding, or both can result. DIC also causes vascular occlusion of small vessels resulting from small clots forming in the microcirculation. In the obstetric population, DIC may occur as a result of abruptio placentae, amniotic fluid embolism, dead fetus syndrome (fetus has died but is retained in uterus for at least 6 weeks), severe preeclampsia, septicemia, cardiopulmonary arrest, and hemorrhage.

The diagnosis of DIC is made according to clinical findings and laboratory markers. Physical examination reveals unusual bleeding; spontaneous bleeding from the woman’s gums or nose may be noted. Petechiae may appear around the site of the thrombosis. Deep vein thrombosis is more common in older than 35 years, multiparity, and smoking (Weiss & Bernstein, 2004). The incidence has declined in the last 20 years because early ambulation after childbirth has become the standard practice. The major causes of thromboembolic disease are factors that increase the risk of clot formation and perfusion status, and continued reassessment of laboratory parameters are the usual forms of treatment. Plasma levels usually return to normal within 24 hours after birth. Platelet counts usually return to normal within 7 days (Kilpatrick & Laros, 2004).

Nursing interventions include assessment for signs of bleeding and signs of complications from the administration of blood and blood products, administering fluid or blood replacement as ordered, and protecting the woman from injury. Because renal failure is one consequence of DIC, urinary output is monitored, usually by insertion of an indwelling urinary catheter. Urinary output must be maintained at more than 30 ml/hr.

The woman and her family will be anxious or concerned about her condition and prognosis. The nurse offers explanations about care and provides emotional support to the woman and her family through this critical time.
common in pregnancy and is characterized by unilateral leg pain, calf tenderness, and swelling (Fig. 25-2). Physical examination may reveal redness and warmth, but women also may have a large amount of clot and have few symptoms (Stenchever, Droegemueller, Herbst, & Mishell, 2001). A positive Homans sign may be present, but further evaluation is needed because the calf pain may be attributed to other causes such as a strained muscle resulting from the birthing position. Pulmonary embolism is characterized by dyspnea and tachypnea. Other signs and symptoms frequently seen include apprehension, cough, tachycardia, hypotension, elevated temperature, and pleuritic chest pain (Laros, 2004). Physical examination is not a sensitive diagnostic indicator for thrombosis. Venography is the most accurate method for diagnosing deep venous thrombosis; however, it is an invasive procedure that exposes the woman and fetus to ionizing radiation and is associated with serious complications. Noninvasive diagnostic methods are more commonly used; these include real-time and color Doppler ultrasound. Cardiac auscultation may reveal murmurs with pulmonary embolism. Electrocardiograms are usually normal. Arterial PO2 may be lower than normal. A ventilation/perfusion scan, Doppler ultrasound, and pulmonary arteriogram may be used for diagnosis (Laros, 2004).

Medical Management
Superficial venous thrombosis is treated with analgesia (nonsteroidal antiinflammatory agents), rest with elevation of the affected leg, and elastic stockings (Laros, 2004). Local application of heat also may be used. Deep venous thrombosis is initially treated with anticoagulant (usually continuous IV heparin) therapy, bed rest with the affected leg elevated, and analgesia. After the symptoms have decreased, the woman may be fitted with elastic stockings to use when she is allowed to ambulate. IV heparin therapy continues for 3 to 5 days or until symptoms resolve. Oral anticoagulant therapy (warfarin) is started during this time and will be continued for about 3 months. Continuous IV heparin therapy is used for pulmonary embolism until symptoms have resolved. Intermittent subcutaneous heparin or oral anticoagulant therapy is usually continued for 6 months.

Nursing Interventions
In the hospital setting, nursing care of the woman with a thrombosis consists of continued assessments: inspection and palpation of the affected area; palpation of peripheral pulses; checking Homans sign; measurement and comparison of leg circumferences; inspection for signs of bleeding; monitoring for signs of pulmonary embolism including chest pain, coughing, dyspnea, and tachypnea; and respiratory status for presence of crackles. Laboratory reports are monitored for prothrombin or partial thromboplastin times. The woman and her family are assessed for their level of understanding about the diagnosis and their ability to cope during the unexpected extended period of recovery.

Interventions include explanations and education about the diagnosis and the treatment. The woman will need assistance with personal care as long as she is on bed rest; the family should be encouraged to participate in the care if that is what she and they wish. While the woman is on bed rest, she should be encouraged to change positions frequently but not to place the knees in a sharply flexed position that could cause pooling of blood in the lower extremities. She also should be cautioned not to rub the affected area, as this action could cause the clot to dislodge. Once the woman is allowed to ambulate, she is taught how to prevent venous congestion by putting on the elastic stockings before getting out of bed.

Heparin and warfarin are administered as ordered, and the physician is notified if clotting times are outside the therapeutic level. If the woman is breastfeeding, she is assured that neither heparin nor warfarin is excreted in significant quantities in breast milk. If the infant has been discharged, the family is encouraged to bring the infant for feedings as
Postpartum infections are any clinical infection of the genital canal that occurs within 28 days after miscarriage, induced abortion, or childbirth. The definition used in the United States continues to be the presence of a fever of 38°C or more on 2 successive days of the first 10 postpartum days (not counting the first 24 hours after birth) (Cunningham et al., 2005). Puerperal infection is probably the major cause of maternal morbidity and mortality throughout the world; however, it occurs after about 6% of births in the United States (5 to 10 times higher after cesarean birth than after vaginal births) (Gibbs, Sweet, & Duff, 2002). Common postpartum infections include endometritis, wound infections, mastitis, urinary tract infections (UTIs), and respiratory tract infections.

The most common infecting organisms are the numerous streptococcal and anaerobic organisms. *Staphylococcus aureus*, gonococci, coliform bacteria, and clostridia are less common but serious pathogenic organisms that also cause puerperal infection. Postpartum infections are more common in women who have concurrent medical or immunosuppressive conditions or who had a cesarean or other operative birth. Intrapartal factors such as prolonged rupture of membranes, prolonged labor, and internal maternal or fetal monitoring also increase the risk of infection (Gibbs, Sweet, & Duff, 2004). Factors that predispose the woman to postpartum infection are listed in Box 25-4.

### Endometritis

Endometritis is the most common cause of postpartum infection. It usually begins as a localized infection at the placental site (Fig. 25-3) but can spread to involve the entire endometrium. Incidence is higher after cesarean birth. Assessment for signs of endometritis may reveal a fever (usually greater than 38°C); increased pulse; chills; anorexia; nausea; fatigue and lethargy; pelvic pain; uterine tenderness; and/or foul-smelling, profuse lochia (Duff, 2002). Leukocytosis and a markedly increased RBC sedimentation rate are typical laboratory findings of postpartum infections. Anemia also may be present. Blood cultures or intracervical or intrauterine bacterial cultures (aerobic and anaerobic) should reveal the offending pathogens within 36 to 48 hours.

### Wound Infections

Wound infections also are common postpartum infections but often develop after the woman is at home. Sites of infection include the cesarean incision and the episiotomy or repaired laceration site. Predisposing factors are similar to those for endometritis (see Box 25-4). Signs of wound infection include erythema, edema, warmth, tenderness, seropurulent drainage, and wound separation. Fever and pain also may be present.

### Urinary Tract Infections

Urinary tract infections (UTIs) occur in 2% to 4% of postpartum women. Risk factors include urinary catheterization,
frequent pelvic examinations, epidural anesthesia, genital tract injury, history of UTI, and cesarean birth. Signs and symptoms include dysuria, frequency and urgency, low-grade fever, urinary retention, hematuria, and pyuria. Costovertebral angle (CVA) tenderness or flank pain may indicate upper UTI. Urinalysis results may reveal *Escherichia coli*, although other gram-negative aerobic bacilli also may cause UTIs.

**Mastitis**

*Mastitis* affects about 1% of women soon after childbirth, most of whom are first-time mothers who are breastfeeding. Mastitis almost always is unilateral and develops well after the flow of milk has been established (Fig. 25-4). The infecting organism generally is the hemolytic *S. aureus*. An infected nipple fissure usually is the initial lesion, but the ductal system is involved next. Inflammatory edema and engorgement of the breast soon obstruct the flow of milk in a lobe; regional, then generalized, mastitis follows. If treatment is not prompt, mastitis may progress to a breast abscess.

Symptoms rarely appear before the end of the first postpartum week and are more common in the second to fourth weeks. Chills, fever, malaise, and local breast tenderness are noted first. Localized breast tenderness, pain, swelling, redness, and axillary adenopathy also may occur. Antibiotics are prescribed. Lactation can be maintained by emptying the breasts every 2 to 4 hours by breastfeeding, manual expression, or breast pump.

**Care Management**

Signs and symptoms associated with postpartum infection were discussed with each infection. Laboratory tests usually performed include a complete blood count, venous blood cultures, and uterine tissue cultures. Nursing diagnoses for women experiencing postpartum infection include the following:

- **Deficient knowledge related to**
  - cause, management, course of infection
  - transmission and prevention of infection

- **Impaired tissue integrity related to**
  - effects of infection process

- **Acute pain related to**
  - mastitis
  - puerperal infection
  - UTI

- **Interrupted family processes related to**
  - unexpected complication to expected postpartum recovery
  - possible separation from newborn
  - interruption in process of realigning relationships after the addition of the new family member

- **Risk for impaired parenting related to**
  - fear of spread of infection to newborn

The most effective and least expensive treatment of postpartum infection is prevention. Preventive measures include good prenatal nutrition to control anemia and intrapartal hemorrhage. Good maternal perineal hygiene with thorough handwashing is emphasized. Strict adherence by all health care personnel to aseptic techniques during childbirth and the postpartum period is very important.

Management of endometritis consists of IV broad-spectrum antibiotic therapy (cephalosporins, penicillins, or clindamycin and gentamicin) and supportive care.
Almost all instances of acute mastitis can be avoided by using proper breastfeeding technique to prevent cracked nipples. Missed feedings, waiting too long between feedings, and abrupt weaning may lead to clogged nipples and mastitis. Cleanliness practiced by all who have contact with the newborn and new mother also reduces the incidence of mastitis. See Chapter 20 for further information.

**Sequelae of Childbirth**

**Trauma**

Women are at risk for problems related to the reproductive system from the age of menarche through menopause and the older years. These problems include structural disorders of the uterus and vagina related to pelvic relaxation and urinary incontinence (UI). They can be a delayed result of childbirth. For example, the structures and soft tissues of the vagina and bladder may be injured during a prolonged labor, during a precipitous birth, or when cephalopelvic disproportion occurs. Defects can also occur in women who have never been pregnant.

**Uterine Displacement and Prolapse**

Normally, the round ligaments hold the uterus in anesterversion, and the urogenital ligaments pull the cervix backward and upward (see Fig. 4-2). Uterine displacement is a variation of this normal placement. The most common type of displacement is posterior displacement, or retroversion, in which the uterus is tilted posteriorly and the cervix rotates anteriorly. Other variations include retroflexion and anteflexion (Fig. 25-3).

By 2 months postpartum the ligaments should return to normal length, but in approximately one third of women the uterus remains retroverted. This condition is rarely symptomatic, but conception may be difficult because the cervix points toward the anterior vaginal wall and away from the posterior fornix, where seminal fluid pools after coitus. If symptoms occur, they may include pelvic and low back pain, dyspareunia, and exaggeration of premenstrual symptoms.

Uterine prolapse is a more serious type of displacement. The degree of prolapse can vary from mild to complete. In complete prolapse, the cervix and body of the uterus protrude through the vagina and the vagina is inverted (Fig. 25-6).

Uterine displacement and prolapse can be caused by congenital or acquired weakness of the pelvic support structures (often referred to as pelvic relaxation). In many cases problems can be related to a delayed but direct result of childbearing. Although extensive damage may be noted and repaired shortly after birth, symptoms related to pelvic relaxation most often appear during the perimenopausal period, when the effects of ovarian hormones on pelvic tissues are lost and atrophic changes begin. Pelvic trauma, stress and strain, and the aging process are also contributing causes. Other causes of pelvic relaxation include reproductive surgery and pelvic radiation.
Clinical manifestations

Generally, symptoms of pelvic relaxation relate to the structure involved: urethra, bladder, uterus, vagina, cul-de-sac, or rectum. The most common complaints are pulling and dragging sensations, pressure, protrusions, fatigue, and low backache. Symptoms may be worse after prolonged standing or deep penile penetration during intercourse. Urinary incontinence may be present.

Cystocele and Rectocele

Cystocele and rectocele almost always accompany uterine prolapse, causing the uterus to sag even further backward and downward into the vagina. Cystocele (Fig. 25-7, A) is the protrusion of the bladder downward into the vagina that develops when supporting structures in the vesicovaginal septum are injured. Anterior wall relaxation gradually develops over time as a result of congenital defects of supports, childbearing, obesity, or advanced age. When the woman stands, the weakened anterior vaginal wall cannot support the weight of the urine in the bladder; the vesicovaginal septum is forced downward, the bladder is stretched, and its capacity is increased. With time the cystocele enlarges until it protrudes into the vagina. Complete emptying of the bladder is difficult because the cystocele sags below the bladder neck. Rectocele is the herniation of the anterior rectal wall through the relaxed or ruptured vaginal fascia and rectovaginal septum; it appears as a large bulge that may be seen through the relaxed introitus (Fig. 25-7, B).

Clinical manifestations

Cystoceles and rectoceles often are asymptomatic. If symptoms of cystocele are present, they may include complaints of a bearing-down sensation or that “something is in my vagina.” Other symptoms include urinary frequency, retention, incontinence, and possible recurrent cystitis and UTIs. Pelvic examination will reveal a bulging of the anterior wall of the vagina when the woman is asked to bear down. Unless the bladder neck and urethra are damaged, urinary continence is unaffected. Women with large cystoceles complain of having to push upward on the sagging anterior vaginal wall to be able to void.

Rectoceles may be small and produce few symptoms, but some are so large that they protrude outside of the vagina when the woman stands. Symptoms are absent when the woman is lying down. A rectocele causes a disturbance in bowel function, the sensation of “bearing down,” or the sensation that the pelvic organs are falling out. With a very large rectocele, it may be difficult to have a bowel movement. Each time the woman strains during bowel
evacuation, the feces are forced against the thinned rectovaginal wall, stretching it more. Some women facilitate evacuation by applying digital pressure vaginally to hold up the rectal pouch.

Urinary Incontinence

Urinary incontinence (UI) affects young and middle-aged women, with the prevalence increasing as the woman ages (Sampselle, 2003). Although nulliparous women can have UI, the incidence is higher in women who have given birth and also increases with parity (Sampselle, 2003). Conditions that disturb urinary control include stress incontinence, because of sudden increases in intraabdominal pressure (such as from sneezing or coughing); urge incontinence, caused by disorders of the bladder and urethra, such as urethritis and urethral stricture, trigonitis, and cystitis; neuropathies, such as multiple sclerosis, diabetic neuritis, and pathologic conditions of the spinal cord; and congenital and acquired urinary tract abnormalities.

Stress incontinence may follow injury to bladder neck structures. A sphincter mechanism at the bladder neck compresses the upper urethra, pulls it upward behind the symphysis, and forms an acute angle at the junction of the posterior urethral wall and the base of the bladder (Fig. 25-8). To empty the bladder, the sphincter complex relaxes and the trigone contracts to open the internal urethral orifice and pull the contracting bladder wall upward, forcing urine out. The angle between the urethra and the base of the bladder is lost or increased if the supporting pubococcygeus muscle is injured; this change, coupled with urethrocele, causes incontinence. Urine spurts out when the woman is asked to bear down or cough in the lithotomy position.

Clinical manifestations

Involuntary leaking of urine is the main sign. Episodes of leaking are common during coughing, laughing, and exercising.

Genital Fistulas

Genital fistulas are perforations between genital tract organs. Most occur between the bladder and the genital tract (e.g., vesicovaginal); between the urethra and the vagina (urethrovaginal); and between the rectum or sigmoid colon and the vagina (rectovaginal) (Fig. 25-9). Genital fistulas may also be a result of a congenital anomaly, gynecologic surgery, obstetric trauma, cancer, radiation therapy, gynecologic trauma, or infection (e.g., in the episiotomy).

Clinical manifestations

Signs and symptoms of vaginal fistulas depend on the site but may include presence of urine, flatus, or feces in the vagina; odors of urine or feces in the vagina; and irritation of vaginal tissues.

CARE MANAGEMENT

Assessment for problems related to structural disorders of the uterus and vagina focuses primarily on the genitourinary tract, the reproductive organs, bowel elimination, and psychosocial and sexual factors. A complete health history, physical examination, and laboratory tests are done to support the appropriate medical diagnosis. The nurse needs to assess the woman’s knowledge of the disorder, its management, and the possible prognosis.

The health care team works together to treat the disorders related to alterations in pelvic support and to assist the
woman in management of her symptoms. In general, nurses working with these women can provide information and self-care education to prevent problems before they occur, to manage or reduce symptoms and promote comfort and hygiene if symptoms are already present, and to recognize when further intervention is needed. This information can be part of all postpartum discharge teaching or can be provided at postpartum follow-up visits in clinics or physician or nurse-midwife offices or during postpartum home visits.

Interventions for specific problems depend on the problem and the severity of the symptoms. If discomfort related to uterine displacement is a problem, several interventions can be implemented to treat uterine displacement. Kegel exercises (see p. 93) can be performed several times daily to increase muscle strength. A knee-chest position performed for a few minutes several times a day can correct a mildly retroverted uterus. A fitted pessary device may be inserted in the vagina to support the uterus and hold it in the correct position (Fig. 25-10). Usually a pessary is used only for a short time because it can lead to pressure necrosis and vaginitis. Good hygiene is important; some women may be taught to remove the pessary at night, cleanse it, and replace it in the morning. If the pessary is always left in place, regular douching with commercially prepared solutions or weak vinegar solutions (1 tablespoon to 1 quart of water) to remove increased secretions and keep the vaginal pH at 4 to 4.5 are suggested. After a period of treatment, most women are free of symptoms and do not require the pessary. Surgical correction is rarely indicated.

Treatment for uterine prolapse depends on the degree of prolapse. Pessaries may be useful in mild prolapse to support the uterus in the correct position. Estrogen therapy also may be used in the older woman to improve tissue tone. If these conservative treatments do not correct the problem, or if there is a significant degree of prolapse, abdominal or vaginal hysterectomy is usually recommended.

Treatment for a cystocele includes use of a vaginal pessary or surgical repair. Pessaries may not be effective.
Anterior repair (colporrhaphy) is the usual surgical procedure and is usually done for large, symptomatic cystoceles. This involves a surgical shortening of pelvic muscles to provide better support for the bladder. An anterior repair is often combined with a vaginal hysterectomy.

Small rectoceles may not need treatment. The woman with mild symptoms may get relief from a high-fiber diet and adequate fluid intake, stool softeners, or mild laxatives. Vaginal pessaries usually are not effective. Large rectoceles that are causing significant symptoms are usually repaired surgically. A posterior repair (colporrhaphy) is the usual procedure. This surgery is performed vaginally and involves shortening the pelvic muscles to provide better support for the rectum. Anterior and posterior repairs may be performed at the same time and with a vaginal hysterectomy.

Mild to moderate UI can be significantly decreased or relieved in many women by bladder training and pelvic muscle (Kegel) exercises (Sampielle, 2003). Other management strategies include pelvic floor support devices (i.e., pessaries), estrogen therapy, insertion of an artificial urethral sphincter, and surgery (e.g., anterior repair) (Stenchever et al., 2001).

Nursing care of the woman with a cystocele, rectocele, or fistula requires great sensitivity, because the woman’s reactions are often intense. She may become withdrawn or hostile because of embarrassment caused by odors and soiling of her clothing that are beyond her control. She may have concerns about engaging in sexual activities because her partner is repelled by these problems. The nurse may tactfully suggest hygiene practices that reduce odor. Commercial deodorizing douches are available, or noncommercial solutions, such as chlorine solution (1 teaspoon of chlorine household bleach to 1 quart of water) may be used. The chlorine solution is also useful for external perineal irritation. Sitz baths and thorough washing of the genitals with unscented, mild soap and warm water help. Sparse dusting with deodorizing powders can be useful. If a rectovaginal fistula is present, enemas given before leaving the house may provide temporary relief from oozing of fecal material until corrective surgery is performed. Irritated skin and tissues may benefit from use of a heat lamp or application of an emollient ointment. Hygienic care is time consuming and may need to be repeated frequently throughout the day; protective pads or pants may need to be worn. All of these activities can be demoralizing to the woman and frustrating to her and her family.

Mental health disorders have implications for the mother, the newborn, and the entire family. Such conditions can interfere with attachment to the newborn and family integration, and some may threaten the safety and well-being of the mother, newborn, and other children.

Mood Disorders

Mood disorders are the predominant mental health disorder in the postpartum period, typically occurring within 4 weeks of childbirth (American Psychiatric Association [APA], 2000). Many women experience a mild depression, or “baby blues,” after the birth of a child. Others can have more serious depressions that can eventually incapacitate them to the point of being unable to care for themselves or their babies. Nurses are strategically positioned to offer anticipatory guidance, to assess the mental health of new mothers, to offer therapeutic interventions, and to refer when necessary. Failure to do so may result in tragic consequences.

The Diagnostic and Statistical Manual of Mental Disorders contains the official guidelines for the assessment and diagnosis of psychiatric illness (APA, 2000). However, specific criteria for postpartum depression (PPD) are not listed. Instead, postpartum onset can be specified for any mood disorder either without psychotic features (i.e., PPD) or with psychotic features (i.e., postpartum psychosis) if the onset occurs within 4 weeks of childbirth (APA, 2000).
Etiology and risk factors

The cause of PPD may be biologic, psychologic, situational, or multifactorial. A personal history or a family history of mood disorder, mood and anxiety symptoms in the antepartal period, as well as postpartum blues increases the risk for PPD (APA, 2000). In a metaanalysis of 84 studies published in the 1990s, Beck (2001) found 13 risk factors for PPD, four of which had not been identified previously as predictors. The effect sizes of the risk factors identified in an updated metaanalysis revealed that 10 predictors have a medium relation with PPD, and three predictors have a small relation (Beck, 2002). A revised version of the Postpartum Depression Predictors Inventory (PDPPI) has been published (Beck, 2002). Box 25-5 lists all 13 risk factors for PPD, with those having the greater effect size listed first.

In addition, research has found that fatigue is an important predictor of PPD (Bozoky & Corwin, 2002). As early as 7 postpartum days, fatigue is predictive of depression at postpartum day 28.

Postpartum depression without psychotic features

PPD is an intense and pervasive sadness with severe and labile mood swings and is more serious and persistent than postpartum blues. Intense fears, anger, anxiety, and depressive thoughts that persist past the baby's first few weeks are not a normal part of postpartum blues. Occurring in approximately 10% to 15% of new mothers, these symptoms rarely disappear without outside help. The majority of these mothers do not seek help from any source, and only about 20% consult a health professional. The occurrence of PPD among teenage mothers was more than 2.5 times that for older mothers (Herrick, 2002). African-American mothers were twice as likely as Caucasian mothers to experience PPD. Younger mothers (younger than 20 years) and those with less than a high school education were significantly less likely to seek help and had higher rates of PPD (Herrick, 2002). Mothers who had no one to talk to about their problems after giving birth had a high rate of PPD and a low rate of help seeking.

The symptoms of postpartum major depression do not differ from the symptoms of nonpostpartum mood disorders except that the mother's ruminations of guilt and inadequacy feed her worries about being an incompetent and inadequate parent. In PPD, there may be odd food cravings (often sweet desserts) and binges with abnormal appetite and weight gain. New mothers report an increased yearning for sleep, sleeping heavily but awakening instantly with any infant noise, and an inability to go back to sleep after infant feedings.

A distinguishing feature of PPD is irritability. These episodes of irritability may flare up with little provocation, and they may sometimes escalate to violent outbursts or dissolve into uncontrollable sobbing. Many of these outbursts are directed against significant others (“He never helps me”) or the baby (“She cries all the time and I feel like hitting her”). Women with postpartum major depressive episodes often have severe anxiety, panic attacks, and spontaneous crying long after the usual duration of baby blues.

Many women feel especially guilty about having depressive feelings at a time when they believe they should be happy. They may be reluctant to discuss their symptoms or their negative feelings toward the child. A prominent feature of PPD is rejection of the infant, often caused by abnormal jealousy (APA, 2000). The mother may be obsessed by thefantasy of being a perfect mother and“thinking about what she should be doing,” particularly if her newborn is not as perfect as she expects. Another symptom is infanticide (harmful thoughts or actions toward the baby), which affects 1 in 14,000 births. The mother may think about killing the baby or the baby killing her. Women with postpartum major depressive episodes often have severe anxiety, panic attacks, and spontaneous crying long after the usual duration of baby blues. Finally, women with PPD may have grandiose delusions, often in regard to their own attractiveness or invincibility. Women who report these delusions are at increased risk of harming themselves or their baby.

BOX 25-5
Risk Factors for Postpartum Depression

- Prenatal depression
- Low self-esteem
- Stress of child care
- Prenatal anxiety
- Life stress
- Lack of social support
- Marital relationship problems
- History of depression
- “Difficult” infant temperament
- Postpartum blues
- Single status
- Low socioeconomic status
- Unplanned or unwanted pregnancy


Critical Thinking Exercise

The nurses on the postpartum unit are revising their discharge teaching plan. Sara would like to include a section on postpartum depression (PPD). Joan thinks this information is not needed as she believes most of the mothers are happy and there is so much else to teach. They ask you, the nurse educator on the unit, for advice on making a decision about including information about postpartum depression. What advice will you give?

1. Evidence—Is there sufficient evidence to draw conclusions about advice to give about the inclusion of postpartum depression information in discharge teaching?
2. Assumptions—Describe underlying assumptions about each of following issues:
   a. Anticipatory guidance as a nursing intervention for PPD
   b. Women and risks of depression, including PPD
   c. Effects of PPD on parenting
3. What implications and priorities are needed in developing a discharge teaching plan?
4. Does the evidence objectively support your conclusion?
5. Are there alternative perspectives to your conclusion?
EVIDENCE-BASED PRACTICE
Support for Postpartum Depression

BACKGROUND
- Clinicians use various definitions of postpartum depression, with ranges of incidence varying from 7% to 30%. Although many define any depression lasting longer than 6 months as chronic, there is no consensus regarding duration. Symptoms can be disabling to the woman, including excessive fatigue, insomnia, inability to cope, suicidal ideation, and lack of maternal feelings for the baby. It is distinguished from postpartum psychosis, a psychiatric emergency that may include hallucinations, delusions, and disorganized thoughts and behaviors. Postpartum depression can disrupt relationships, especially with her partner, and her infant can experience attachment disorders and cognitive delays. Causes of postpartum depression are unknown. Hormones may challenge some threshold after birth in the psychologically vulnerable woman. Some factors associated with postpartum depression include age, parity, anxiety, social class, obstetric complications, past psychiatric history, psychosocial and marital stressors, and unplanned pregnancy. Isolation seems to exacerbate the symptoms, and support seems to relieve them. Support has been found to be beneficial to pregnant and laboring women (see "Continuous Labor Support:" Evidence-Based Practice box for Chapter 14). A meaningful relationship with a supportive caregiver reinforces the concept that the woman matters to someone, increasing feelings of well-being, control, and positive affect. Although medications are sometimes useful in postpartum depression, researchers have found compliance to be low.

OBJECTIVE
- The authors sought evidence of the effectiveness of professional and/or social support for women who have been diagnosed with postpartum depression. The interventions were emotional support, counseling, or tangible assistance (child care, household assistance) via phone, home or clinic visits, individually or in groups, to women with postpartum depression. The controls were women with postpartum depression receiving "usual care" in that setting.
- Outcome measures could include unbiased indicators of maternal or family morbidity, duration and resolution of depression, and social functioning.

METHODS
Search Strategy
- The reviewers searched Cochrane, MEDLINE, and 38 relevant journals via Zetoc, an electronic current awareness service. Search keywords were not noted.
- Two randomized, controlled trials met the criteria, representing 137 women from the United Kingdom. In the 1989 trial, the intervention began at 12 weeks postpartum and was provided by health visitors trained in nondirective counseling who made eight half-hour home visits. The 1997 trial also began at 12 weeks and involved six sessions with a psychologist trained in cognitive-behavior therapy.

Statistical Analyses
- Both trials used the Edinburgh Postnatal Depression Scale, which not only has good evidence of reliability and validity but also allowed pooling of the data. The odds ratio and 95% confidence intervals were calculated for the categorical data.

FINDINGS
- At 25 weeks postpartum, the mothers who had received the intervention were significantly less depressed than the controls.

LIMITATIONS
- Postpartum depression was confirmed by a clinical interview, but the reliability and validity of that was not addressed. The participants were not blinded to the treatment allocation, but the health assessors and outcome assessors were blinded to group. One study had a 30% dropout rate, which may have introduced bias. Both the number of studies (i.e., both are from one country) and samples are small, limiting generalizability.

CONCLUSIONS
- Supportive intervention in the postpartum period may be effective in relieving postpartum depression.

IMPLICATIONS FOR PRACTICE
- Isolation may contribute to postpartum depression. Social or professional support may, in theory, help alleviate depression in the vulnerable postpartum woman, but the evidence is too scanty to make policy recommendations.

IMPLICATIONS FOR FURTHER RESEARCH
- Larger studies of the benefits suggested by this small review for improving postpartum depression with increased support are needed. Of urgent interest is the optimum timing and duration of such intervention, especially as a preventive measure. The type and training of effective support caregivers, the type of intervention, and the setting are important to determine. Perhaps the family can become involved in the support intervention. Cost is a primary driving factor in mental health services, which need evidence of cost-effectiveness. Long-term follow-up may provide insight into the benefits derived for the mother and the infant and family by alleviating postpartum depression.

features is bipolar disorder. This mood disorder is preceded by
suspicious.
who are agitated, overactive, confused, complaining, or sus-
cape awkward in her responses to the baby. Obsessive thoughts about harming the child are very frightening to her. Often she does not share these thoughts because of embar-
harrassment, but when she does, other family members be-
come very frightened.

**Medical management.** The natural course is one of gradual improvement over the 6 months after birth. Sup-
port treatment alone is not efficacious for major postpartum depression. Pharmacologic intervention is needed in most in-
stances. Treatment options include antidepressants, anxiolytic agents, and electroconvulsive therapy (ECT). Psychotherapy focuses on the mother's fears and concerns regarding her new responsibilities and roles, as well as monitoring for suicidal or homicidal thoughts. For some women, hospitalization is necessary.

**Postpartum depression with psychotic features**

Postpartum psychosis is a syndrome most often charac-
terized by depression (as described previously), delusions, and thoughts by the mother of harming either the infant or herself (Sadock & Sadock, 2000). A postpartum mood dis-
order with psychotic features occurs in 1 to 2 per 1000 births and may occur more often in primiparas (Sadock & Sadock, 2000). Once a woman has had one postpartum episode with psychotic features, there is a 10% to 50% likelihood of recurrence with each subsequent birth (APA, 2000).

Symptoms often begin within days after the birth, al-
though the mean time to onset is 2 to 3 weeks and almost always within 8 weeks of birth (Sadock & Sadock, 2000). Characteristically, the woman begins to complain of fatigue, insomnia, and restlessness and may have episodes of tear-
fulness and emotional lability. Complaints regarding the in-
ability to move, stand, or work are also common. Later, sus-
piciousness, confusion, incoherence, irrational statements, and obsessive concerns about the baby's health and welfare may be present (Sadock & Sadock, 2000). Delusions may be present in 50% of all women, and hallucinations in ap-
proximately 25%. Auditory hallucinations that command the mother to kill the infant can also occur in severe cases. When delusions are present, they are often related to the in-
fant. The mother may think the infant is possessed by the devil, has special powers, or is destined for a terrible fate (APA, 2000). Grossly disorganized behavior may be mani-
fested as a disinterest in the infant or an inability to provide care. Some will insist that something is wrong with the baby or accuse nurses or family members of hurting or poison-
ing him or her. Nurses are advised to be alert for mothers who are agitated, overactive, confused, complaining, or sus-
picious.

A specific illness included in depression with psychotic features is bipolar disorder. This mood disorder is preceded or accompanied by manic episodes, characterized by elev-
ated, expansive, or irritable moods. Clinical manifestations of a manic episode include at least three of the following symptoms that have been significantly present for at least 1 week: grandiosity, decreased need for sleep, pressured speech, flight of ideas, distractibility, psychomotor agitation, and excessive involvement in pleasurable activities without regard for negative consequences (APA, 2000). Because these women are hyperactive, they may not take the time to eat or sleep, which leads to inadequate nutrition, dehydration, and sleep deprivation. While in a manic state, mothers will need constant supervision when caring for their infants. Mostly they will be too preoccupied to provide child care.

**Medical management.** A favorable outcome is as-
sociated with a good premorbid adjustment (before the on-
set of the disorder) and a supportive family network (Sadock & Sadock, 2000). Because mood disorders are usually episodic, women may experience another episode of symp-
toms within a year or two of the birth. Postpartum psychosis is a psychiatric emergency, and the mother will probably need psychiatric hospitalization.Antipsychotics and mood stabilizers such as lithium are the treatments of choice. If the mother is breastfeeding, some sources recommend that no pharmacologic agents should be prescribed (Sadock & Sadock, 2000), but other sources advise caution while pre-
scribing some agents (Stowe, Strader, & Nemeroff, 2001). An-
tipsychotics and lithium should be avoided in breastfeeding mothers, but other mood stabilizers may be compatible with breastfeeding (see later discussion). It is usually advantageous for the mother to have contact with her baby if she so de-
sires, but visits must be closely supervised. Psychotherapy is indicated after the period of acute psychosis is past.

**C A R E M A N A G E M E N T**

Even though the prevalence of PPD is fairly well established, women are unlikely to seek help from a mental health care provider. Primary health care providers can usually recognize severe PPD or postpartum psychosis but may miss milder forms; even if the disorder is recognized, the woman may be treated inappropriately or subtherapeutically (Gold, 2002). In as many as 50% of women with PPD, the disorder will go undetected (Beck & Gable, 2001).

**Assessment and Nursing Diagnoses**

To recognize symptoms of PPD as early as possible, the nurse should be an active listener and demonstrate a caring atti-
tude. Nurses cannot depend on women volunteering unsolicited information about their depression or asking for help. The nurse should observe for signs of depression and ask appropriate questions to determine moods, appetite, sleep, energy and fatigue levels, and ability to concentrate. Examples of ways to initiate conversation include the fol-
lowing: “Now that you have had your baby, how are things going for you? Have you had to change many things in your
life since having the baby?” and “How much time do you spend crying?” If the nurse assesses that the new mother is depressed, she or he must ask if the mother has thought about hurting herself or the baby. The woman may be more willing to answer honestly if the nurse says, “Lots of women feel depressed after having a baby, and some feel so badly that they think about hurting themselves or the baby. Have you had these thoughts?”

Nurses can use screening tools in assessing whether the depressive symptoms have progressed from postpartum blues to PPD. Examples are the Edinburgh Postnatal Depression Scale (EPDS) (Cox, Holden, & Sagovsky, 1987) and the PDPI (Beck, 2002). The EPDS is a self-report assessment designed specifically to identify women experiencing PPD. It has been used and validated in studies in numerous cultures (Eberhard-Gran, Eskild, Tambs, Oppdalsmoen, & Samuelsen, 2001) and has even been used to measure depression and anxiety in fathers (partners) (Matthey, Barnett, Kavanagh, & Howie, 2001). The assessment tool asks the woman to respond to 10 statements about the common symptoms of depression. The woman is asked to choose the response that is closest to describing how she has felt for the past week.

Through focused research over at least a decade, Beck has developed and continues to refine the Postpartum Depression Screening Scale (PDSS) (Beck & Gable, 2000; Beck & Gable, 2001). The latest revision (PDPI) is a checklist of 13 symptoms of PPD. The published tool is designed to be used by nurses and other health care providers to elicit information from the woman during an interview during pregnancy and continuing in the postpartum period to assess risk (Beck, 2002). Areas assessed include the predictors of depression as listed in Box 17. If the initial interaction reveals some question that the woman might be depressed, a formal screening is helpful in determining the urgency of the referral and the type of provider. Also important is the need to assess the woman’s family members because they may be able to offer valuable information, as well as have a need to express how they have been affected by the woman’s emotional disorder (Maley, 2002).

Planning is focused on meeting the individualized needs of the family to ensure safety, especially for the mother and infant and any other children, and to facilitate functional family coping. Nursing diagnoses may include the following:

- Risk for self-directed (mother) or other-directed (children) violence related to—postpartum depression
- Situational low self-esteem in the mother related to—stresses associated with role changes
- Disabled family coping related to—increased care needs of mother and infant
- Risk for impaired parenting related to—inability of depressed mother to attach to infant

Expected Outcomes of Care

Specific measurable criteria can be developed based on the following general outcomes:

- The mother will no longer be depressed.
- The mother’s and infant’s physical well-being will be maintained.
- The family will cope effectively.
- Family members will demonstrate continued healthy growth and development.
- The infant will be fully integrated into the family.

Plan of Care and Interventions

On the postpartum unit

The postpartum nurse must observe the new mother carefully for any signs of tearfulness and conduct further assessments as necessary. PPD must be discussed by nurses to prepare new parents for potential problems in the postpartum period (Patient Instructions for Self-Care box and Chapter 17). If you notice that your wife (or daughter) is upset or crying a lot, please call the postpartum care provider immediately—don’t wait for the routine postpartum appointment.

NURSE ALERT: Because the newborn may be scheduled for a checkup before the mother's 6-week checkup, nurses in well-baby clinics or pediatrician offices should be alert for signs of PPD in new mothers and be knowledgeable about community referral resources.

In the home and community

Postpartum home visits can reduce the incidence of or complications from depression. A brief home visit or phone call at least once a week until the new mother returns for her postpartum visit may save the life of a mother and her infant; however, these contacts may not be feasible or available. Supervision of the mother with emotional complications may become a prime concern. Because depression can greatly interfere with her mothering functions, family and friends may need to participate in the infant’s care. This is a time for the extended family and friends to determine what they can do to help, and the nurse can work with them to
asks, “Have you thought about hurting your baby?” If delusional thinking about the baby is suspected, the nurse asks, “Have you thought about hurting yourself?”

If the safety of the mother or children is threatened, even if the mother is severely depressed, hospitalization may be necessary. This decision is made when the safety of both mother and infant is a concern. Should the mother be ambivalent about hurting her baby, hospitalization may be necessary to commit the woman to an inpatient setting for treatment. Psychiatric hospitalization. Women with postpartum psychosis are a psychiatric emergency and must be referred immediately to a psychiatrist who is experienced in working with women with PPD, who can prescribe medication and other forms of therapy and assess the need for hospitalization.

Within the hospital setting, the reintroduction of the baby to the mother can occur at the mother’s own pace. A schedule is set for increasing the number of hours the mother cares for the baby over several days, culminating in the infant staying overnight in the mother’s room. This allows the mother to experience meeting the infant’s needs and giving up sleep for the baby, a situation difficult for new mothers even under ideal conditions. The mother’s readiness for discharge and caring for the baby is assessed. Her interactions with her baby are also carefully supervised and guided.

Nurses should also observe the mother for signs of bonding with the baby. Attachment behaviors are defined as eye-to-eye contact; physical contact that involves holding, touching, cuddling, and talking to the baby and calling the baby by name; and the initiation of appropriate care. A staff member is assigned to keep the baby in sight at all times. Indirect teaching, praise, and encouragement are designed to bolster the mother’s self-esteem and self-confidence.

Psychotropic medications. PPD is usually treated with antidepressant medications. If the woman with PPD is not breastfeeding, antidepressants can be prescribed without special precautions. The commonly used antidepressant drugs are often divided into four groups: selective serotonin reuptake inhibitors (SSRIs), heterocyclics (including the tricyclic antidepressants [TCAs]), monoamine oxidase inhibitors (MAOIs), and other antidepressant agents not in the above classifications (Belner & Follis, 2001) (Box 25-6).

- Don’t be ashamed of having emotional problems after your baby is born—it happens to approximately 15% of women.

PATIENT INSTRUCTIONS FOR SELF-CARE

Activities to Prevent Postpartum Depression

- Share knowledge about postpartum emotional problems with close family and friends.
- Take care of yourself: eat a balanced diet, exercise on a regular basis, and get enough sleep. Ask someone to take care of the baby so that you can get a full night’s sleep.
- Share your feelings with someone close to you; don’t isolate yourself at home.
- Don’t overcommit yourself or feel like you need to be a superwoman.
- Don’t place unrealistic expectations on yourself.
- Don’t be ashamed of having emotional problems after your baby is born— it happens to approximately 15% of women.

Suicidal thoughts or attempts are one of the most serious symptoms of PPD and require immediate assessment and intervention (Levy, Sanders, & Sabraw, 2002).

LEGAL TIP Legal Commitment

If a woman with PPD is experiencing active suicidal ideation or harmful delusions about the baby and is unwilling to seek treatment, legal intervention may be necessary to commit the woman to an inpatient setting for treatment.

Postpartum Complications
The SSRIs are prescribed more frequently today than other groups of antidepressant medications. They are relatively safe and carry fewer side effects than the TCAs. The most frequent side effects with the SSRIs are gastrointestinal disturbances (nausea, diarrhea), headache, and insomnia. In approximately one third of patients the SSRIs reduce libido, arousal, or orgasmic function.

The TCAs cause many central nervous system (CNS) and peripheral nervous system (PNS) side effects. A common CNS effect is sedation, and this could easily interfere with mothers caring for their babies. A mother could fall asleep while holding the baby and drop him or her, or she could have trouble getting fully awake during the night to care for the baby. Other side effects include weight gain, tremors, grand mal seizures, nightmares, agitation or mania, and extrapyramidal side effects. Anticholinergic side effects include dry mouth, blurred vision (usually temporary), difficulty voiding, constipation, sweating, and orgasm difficulty (Keltner & Folks, 2001).

Hypertensive crisis is the main reason that MAOIs are not prescribed more frequently. The woman should be taught to watch for signs of hypertensive crisis—throbbing, occipital headache, stiff neck, chills, nausea, flushing, retroorbital pain, apprehension, pallor, sweating, chest pain, and palpitations (Keltner & Folks, 2001). This crisis is brought on by the woman eating foods that contain tyramine, a sympathomimetic pressor amine, which normally is broken down by the enzyme monoamine oxidase. The nurse must do extensive teaching about avoidance of foods that contain tyramine such as aged cheeses, nuts, soy sauce, preserved meats, and tap beers (National Headache Foundation, 2005).

The woman taking mood stabilizers (Box 25-7) must be taught about the many side effects, and especially, for those on lithium, the need to have serum lithium levels assessed every 6 months. Women with severe psychiatric syndromes such as schizophrenia, bipolar disorder, or psychotic depression will probably require antipsychotic medications (Box 25-8). Most of these antipsychotic medications can cause sedation and orthostatic hypotension—both of which could interfere with the mother being able to safely care for her baby. They can also cause PNS effects such as constipation, dry mouth, blurred vision, tachycardia, urinary retention, weight gain, and agranulocytosis. CNS effects may include akathisia, dystonias, parkinsonism-like symptoms, tardive dyskinesia (irreversible), and neuroleptic malignant syndrome (potentially fatal).

Psychotropic medications and lactation. A major clinical dilemma is the psychopharmacologic treatment of women with PPD who want to breastfeed their infants. In the past, women were told to discontinue lactation.

The SSRIs are prescribed more frequently today than other groups of antidepressant medications. They are relatively safe and carry fewer side effects than the TCAs. The most frequent side effects with the SSRIs are gastrointestinal disturbances (nausea, diarrhea), headache, and insomnia. In approximately one third of patients the SSRIs reduce libido, arousal, or orgasmic function.

The TCAs cause many central nervous system (CNS) and peripheral nervous system (PNS) side effects. A common CNS effect is sedation, and this could easily interfere with mothers caring for their babies. A mother could fall asleep while holding the baby and drop him or her, or she could have trouble getting fully awake during the night to care for the baby. Other side effects include weight gain, tremors, grand mal seizures, nightmares, agitation or mania, and extrapyramidal side effects. Anticholinergic side effects include dry mouth, blurred vision (usually temporary), difficulty voiding, constipation, sweating, and orgasm difficulty (Keltner & Folks, 2001).

Hypertensive crisis is the main reason that MAOIs are not prescribed more frequently. The woman should be taught to watch for signs of hypertensive crisis—throbbing, occipital headache, stiff neck, chills, nausea, flushing, retroorbital pain, apprehension, pallor, sweating, chest pain, and palpitations (Keltner & Folks, 2001). This crisis is brought on by the woman eating foods that contain tyramine, a sympathomimetic pressor amine, which normally is broken down by the enzyme monoamine oxidase. The nurse must do extensive teaching about avoidance of foods that contain tyramine such as aged cheeses, nuts, soy sauce, preserved meats, and tap beers (National Headache Foundation, 2005).

The woman taking mood stabilizers (Box 25-7) must be taught about the many side effects, and especially, for those on lithium, the need to have serum lithium levels assessed every 6 months. Women with severe psychiatric syndromes such as schizophrenia, bipolar disorder, or psychotic depression will probably require antipsychotic medications (Box 25-8). Most of these antipsychotic medications can cause sedation and orthostatic hypotension—both of which could interfere with the mother being able to safely care for her baby. They can also cause PNS effects such as constipation, dry mouth, blurred vision, tachycardia, urinary retention, weight gain, and agranulocytosis. CNS effects may include akathisia, dystonias, parkinsonism-like symptoms, tardive dyskinesia (irreversible), and neuroleptic malignant syndrome (potentially fatal).

Psychotropic medications and lactation. A major clinical dilemma is the psychopharmacologic treatment of women with PPD who want to breastfeed their infants. In the past, women were told to discontinue lactation.

The SSRIs are prescribed more frequently today than other groups of antidepressant medications. They are relatively safe and carry fewer side effects than the TCAs. The most frequent side effects with the SSRIs are gastrointestinal disturbances (nausea, diarrhea), headache, and insomnia. In approximately one third of patients the SSRIs reduce libido, arousal, or orgasmic function.

The TCAs cause many central nervous system (CNS) and peripheral nervous system (PNS) side effects. A common CNS effect is sedation, and this could easily interfere with mothers caring for their babies. A mother could fall asleep while holding the baby and drop him or her, or she could have trouble getting fully awake during the night to care for the baby. Other side effects include weight gain, tremors, grand mal seizures, nightmares, agitation or mania, and extrapyramidal side effects. Anticholinergic side effects include dry mouth, blurred vision (usually temporary), difficulty voiding, constipation, sweating, and orgasm difficulty (Keltner & Folks, 2001).

Hypertensive crisis is the main reason that MAOIs are not prescribed more frequently. The woman should be taught to watch for signs of hypertensive crisis—throbbing, occipital headache, stiff neck, chills, nausea, flushing, retroorbital pain, apprehension, pallor, sweating, chest pain, and palpitations (Keltner & Folks, 2001). This crisis is brought on by the woman eating foods that contain tyramine, a sympathomimetic pressor amine, which normally is broken down by the enzyme monoamine oxidase. The nurse must do extensive teaching about avoidance of foods that contain tyramine such as aged cheeses, nuts, soy sauce, preserved meats, and tap beers (National Headache Foundation, 2005).

The woman taking mood stabilizers (Box 25-7) must be taught about the many side effects, and especially, for those on lithium, the need to have serum lithium levels assessed every 6 months. Women with severe psychiatric syndromes such as schizophrenia, bipolar disorder, or psychotic depression will probably require antipsychotic medications (Box 25-8). Most of these antipsychotic medications can cause sedation and orthostatic hypotension—both of which could interfere with the mother being able to safely care for her baby. They can also cause PNS effects such as constipation, dry mouth, blurred vision, tachycardia, urinary retention, weight gain, and agranulocytosis. CNS effects may include akathisia, dystonias, parkinsonism-like symptoms, tardive dyskinesia (irreversible), and neuroleptic malignant syndrome (potentially fatal).

Psychotropic medications and lactation. A major clinical dilemma is the psychopharmacologic treatment of women with PPD who want to breastfeed their infants. In the past, women were told to discontinue lactation.
Today, we know that 5% to 17% of all nursing mothers take a prescription medication (Stowe, Strader, & Nemeroff, 2001). The FDA has not approved any psychotropic medication for use during lactation. However, the American Academy of Pediatrics (AAP) has published reports on excretion of medications into human breast milk since 1983. Almost all of the psychotropic medications listed in the 2001 report are drugs for which the effects on the breastfeeding newborn are "unknown but still may be of concern" (AAP, 2001). The reason for the concern is that although the medications appear to be in low concentrations in breast milk (commonly a milk-to-serum ratio of 0.5 to 1), many drugs have a long half-life, and levels may build up in plasma and tissue of nursing infants. Long-term effects on the newborn are unknown (AAP, 2001). Because all psychotropic medications pass through breast milk to the infant, the risks associated with the use of such medication must be weighed against the risks associated with maternal agitation and potentially self-destructive behavior.

Breast milk-excretion studies have demonstrated that antidepressants are present in breast milk, with a milk-to-serum ratio that is typically greater than 1:1 (Stowe, Strader, & Nemeroff, 2001) and often in higher concentrations in the fatty hind milk (Newport, Wilcox, & Stowe, 2001). Most TCAs appear to be safe during breastfeeding. Minimal data are available concerning the SSRIs, so earlier reviews recommended using the secondary amine TCAs. In light of the increasing data on SSRIs, and the lack of adverse reports, these recommendations are likely to be revised (Stowe, Strader, & Nemeroff, 2001). MAOIs are usually avoided; no human data have been published on the newer antidepressants.

The elapsed time between maternal dosing and infant feeding has been shown to affect the amount of antidepressant medication to which the infant is exposed. Adjusting both the schedule of dosing of the antidepressant and the infant's feeding schedule may considerably reduce the concentration of the drug to which the infant is exposed. In addition, eliminating the one daily feeding with the highest concentration may be necessary (Stowe, Strader, & Nemeroff, 2001). Most of the drugs listed in Boxes 25-6 and 25-7 are classified as drugs whose effects on infants are unknown but may be of concern.

Antipsychotic medications are excreted into breast milk. None of these medications has been proven safe during lactation; the AAP does not rate any of the antipsychotic medications as compatible with breastfeeding. Mood-stabilizing and anxiolytic medications are present in breast milk. Lithium is contraindicated in breastfeeding. The benefits of breastfeeding and the potential risks must be carefully considered before use of other mood stabilizers (AAP, 2001). In summary, all psychotropic medications studied to date are excreted in breast milk. The information about adverse effects of psychotropic agents on infants is limited to case reports. The nursing infant’s daily dose of psychotropic agents is less than the maternal daily dose. Psychotropic medications are excreted into breast milk with a specific individual time course, allowing the minimization of infant exposure with continuation of breastfeeding. The long-term neurobehavioral effects of infant exposure to psychotropic medications through breastfeeding are unknown. Psychotropic medications for breastfeeding women should be selected if they have greater documentation of prior use, lower FDA risk category, few or no metabolites, and fewer side effects (Stowe, Strader, & Nemeroff, 2001).

**Nursing implications.** When breastfeeding women have emotional complications and need psychotropic medications, referral to a psychiatrist who specializes in postpartum disorders is preferred. The nurse should reinforce the need to take antidepressants as ordered. Because they do not exert any effect for approximately 2 weeks and usually do not reach full effect for 4 to 6 weeks, many women discontinue taking the medication on their own. Patient and family teaching should reinforce the schedule for taking medications in conjunction with the infant’s feeding schedule.

**Other treatments for PPD.** Other treatments for PPD include complementary or alternative therapies such as those listed in Box 25-9, ECT, and psychotherapy. Alternative therapies may be used alone but often are used with other treatments for PPD. Safety and efficacy studies of these alternative therapies are needed to ensure that care and advice is based on evidence (Tiran & Mack, 2000).

**NURSE ALERT.** St. John’s wort is often used to treat depression. It has not been proven safe for women who are breastfeeding. ECT may be used for women with PPD who have not improved with antidepressant therapy. Psychotherapy in the form of group therapy or individual (interpersonal) therapy also has been used with positive results alone and in combination with antidepressant therapy. Neurobehavioral effects of antidepressant therapy can take several weeks to be evident.

### BOX 25-9

<table>
<thead>
<tr>
<th>Possible Alternative or Complementary Therapies for Postpartum Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncture</td>
</tr>
<tr>
<td>Acupressure</td>
</tr>
<tr>
<td>Aromatherapy</td>
</tr>
<tr>
<td>Jasmine</td>
</tr>
<tr>
<td>Ylang-ylang</td>
</tr>
<tr>
<td>Rose</td>
</tr>
<tr>
<td>Herbal remedies</td>
</tr>
<tr>
<td>Lavender tea</td>
</tr>
<tr>
<td>Healing touch or therapeutic touch</td>
</tr>
<tr>
<td>Massage</td>
</tr>
<tr>
<td>Relaxation techniques</td>
</tr>
<tr>
<td>Reflexology</td>
</tr>
<tr>
<td>Yoga</td>
</tr>
</tbody>
</table>

conjunction with antidepressant therapy; however, more studies are needed to determine what types of professional support are most effective (Ray & Hodnett, 2001).

**Evaluation**

The nurse can be assured that care has been effective if the physical well-being of the mother and infant is maintained, the mother and family are able to cope effectively, and each family member continues to show a healthy adaptation to the presence of the new member of the family (Plan of Care).

**Postpartum Onset of Panic Disorder**

Approximately 3% to 5% of women develop panic disorder or obsessive-compulsive disorder in the postpartum period. Panic attacks are discrete periods in which there is the sudden onset of intense apprehension, fearfulness, or terror. Panic attacks are usually accompanied by increased sweating, a faster than normal heart rate, and a feeling of the presence of a strange force. Rarely do they harm the baby. Nurses need only to listen to hear symptoms of panic disorder. Usually these women are so distraught that they will share with whomever will listen. Oftentimes the family has tried to tell them that what they are experiencing is normal, but they know differently.

**Medical management**

Treatment is usually a combination of medications, education, psychotherapy, and cognitive behavioral interventions, along with an attempt to identify any medical or physiologic contributors. Antidepressants such as SSRIs may be prescribed (Brown, 2001), and sertraline (Zoloft) and

<table>
<thead>
<tr>
<th>NURSING DIAGNOSIS</th>
<th>Expected Outcomes</th>
<th>Nursing Interventions/Rationales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk for injury to the woman and/or newborn related to woman's emotional state and/or treatment</td>
<td>The mother and newborn will remain free of injury. The woman's family will verbalize understanding of the need for maternal and infant supervision and have a plan to provide that supervision.</td>
<td>• Assess the postpartum woman for risk factors for depression (before discharge) to determine if she is at risk and in need of prompt interventions or referral. • Provide information about signs of PPD to woman and family to promote prompt recognition of problems. • Observe maternal-infant interactions before discharge to determine appropriateness. • Maintain frequent contact with woman by telephone calls and home visits to determine if further interventions are necessary, because most postpartum mothers are discharged early from the inpatient setting. • Counsel woman and family to telephone health care provider if behaviors indicating depression, such as crying, increase to provide prompt care and referral if necessary and avoid injury to newborn and mother. • Provide opportunities for woman and family to verbalize feelings and concerns in a nonjudgmental setting to promote a trusting relationship. • Assess woman for any suicidal thoughts or plans to provide for safety of woman and infant. • Assist family to develop a plan for maternal and infant supervision to provide for safety of woman and infant. • Provide information about community resources for assistance to ensure care if woman is unable to care for herself or infant. • Reinforce teaching or refer breastfeeding mother to lactation consultant to obtain information regarding effects of antidepressant and antipsychotic medications.</td>
</tr>
</tbody>
</table>

**NURSING DIAGNOSIS** Risk for impaired parenting related to inability of mother to attach to infant

**Expected Outcomes** Woman demonstrates appropriate attachment behaviors in infant interactions. Woman expresses satisfaction with infant.

**Nursing Interventions/Rationales**

• Observe maternal-infant interactions to assess quality of interactions and to determine need for interventions. • Encourage woman to express her anxiety, fears, or other feelings to allow woman to ventilate her concerns and have them accepted. • Encourage the woman to have as much contact with infant as possible to minimize separation and to promote attachment. • Demonstrate infant care and explain infant behaviors to enhance mother's care abilities and understanding of infant's abilities. • Make referrals as needed to community resources to assist the woman in developing parenting skills or promoting confidence in infant care.
paroxetine (Paxil) are approved in the United States for the treatment of panic disorder; fluvoxamine (Luvox) may be especially helpful with obsessions (Keltner & Folks, 2001).

**Nursing considerations**

The following nursing interventions are suggested:

- Education is a crucial nursing intervention. New mothers should be provided with anticipatory guidance concerning the possibility of panic attacks during the postpartum period. Preparing for the attacks may help decrease their unexpected, terrifying nature (Beck, 1998).
- Women can be reassured that it is common to feel a sense of impending doom and fear of insanity during panic attacks. These fears are temporary and disappear once the panic attack is over (Beck, 1998).
- Nurses can help women identify panic triggers that are particular to their own lives. Keeping a diary can help identify the triggers (Beck, 1998).
- Family and social supports are helpful. The new mother is encouraged to put usual chores on hold and to ask for and accept help.
- Support groups allow these mothers to experience comfort in seeing others like themselves.
- Sensory interventions such as music therapy and aromatherapy are nonintrusive and inexpensive.
- Behavioral interventions such as breathing exercises and progressive muscle relaxation can be helpful (Fishel, 1998).
- Cognitive interventions such as positive self-talk training, reframing and redefining, and reassurance can alter the negative thinking (Fishel, 1998).

**Key Points**

- PPH is the most common and most serious type of excessive obstetric blood loss.
- Hemorrhagic (hypovolemic) shock is an emergency situation in which the perfusion of body organs may become severely compromised, leading to significant risk of morbidity or death for the mother.
- The potential hazards of the therapeutic interventions may further compromise the woman with a hemorrhagic disorder.
- Clotting disorders are associated with many obstetric complications.
- The first symptom of postpartum infection is usually fever greater than 38°C on 2 consecutive days in the first 10 postpartum days (after the first 24 hours).
- Prevention is the most effective and inexpensive treatment of postpartum infection.
- Structural disorders of the uterus and vagina related to pelvic relaxation and UI may be a delayed result of childbirth.
- Bladder training and pelvic muscle exercises can significantly decrease or relieve mild to moderate UI.
- Mood disorders account for most mental health disorders in the postpartum period.
- Identification of women at greatest risk for postpartum depression can be facilitated by use of various screening tools.
- Suicidal thoughts or attempts are one of the most serious symptoms of postpartum depression.
- Antidepressant medications are the usual treatment for postpartum depression; however, specific precautions are needed for breastfeeding women.

**Answers Guidelines to Critical Thinking Exercise**

1. Yes, there is evidence to draw conclusions about information on postpartum depression in discharge teaching.
2. a. Nurses have a major opportunity and responsibility to help women understand risk factors and to motivate them to adopt healthy lifestyles that prevent disease. Women need to be prepared for potential problems in the postpartum period such as PPD and to be counseled to engage in self-care practices for their own health promotion and illness prevention. Teaching activities include taking care of oneself by eating a balanced diet, getting exercise, and getting adequate sleep; sharing feelings; not overcommitting or setting unrealistic expectations for oneself; and making sure family and friends also have knowledge about PPD.
   b. Women experience depression twice as often as men. It occurs in approximately 10% to 15% of postpartum women. Assessment tools can be used to identify women at risk for PPD to see whether the woman has progressed from postpartum blues to PPD. These screening tools elicit information from the woman about the common symptoms of depression. The tool developed by Beck (2002) includes predictors of depression that include prenatal depression, low self-esteem, stress of child care, prenatal anxiety, life stress, lack of social support, marital relationship problems, history of depression, “difficult” infant temperament, postpartum blues, single status, low socioeconomic status, and unplanned or unwanted pregnancy.
   c. Impaired parenting is a major risk of PPD. A prominent feature of PPD is rejection of the infant. The woman may be
The plan should be developed to include what screening methods will be used on the postpartum unit, what written materials will be provided, whether classes or individual sessions will be included, who will be included in the teaching session, what follow-up will be provided (e.g., phone calls, home visits), and what resources are available in the community for referral or support.

(4) Yes. Depression is treatable if identified early and adequate treatment is given. It will not go away by itself. Women who are not informed may not seek help.

(5) An alternative argument is to develop prenatal assessments and information about the risks of PPD and to assess throughout pregnancy for signs of problems. Classes and written materials can be provided during pregnancy as well by childbirth educators or health care providers (see Wroblewski & Tallon, 2004).

### References


