

Critically ill obstetric patients

Be prepared to care for pregnant and postpartum patients in critical care settings.

By Debra A. Hrelac, PhD, RNC, and Kellie M. Griggs, DNP, MSN-Ed, RNC-OB

ALTHOUGH evidence-based nursing guidelines exist to direct the care of acute and chronic conditions in obstetric (OB) patients while they're in OB settings, few if any such guidelines exist for providing care to these same patients in emergency departments and intensive care units (ICUs). However, OB patients can be admitted to critical care settings with severe conditions—preeclampsia/eclampsia, postpartum hemorrhage (PPH), hemolysis/elevated liver enzymes/low platelet count (HELLP) syndrome, diabetes, cardiomyopathy, complications from anesthesia, renal failure, sepsis, stroke, amniotic or blood clot embolism, placental abruption/previa/accreta, or trauma—that require rigorous management.

Some critical care nurses have reported that they don't feel prepared to care for pregnant and postpartum patients

with serious conditions. Understanding the unique challenges you might face with these patients can help you confidently care for them. In this article, we'll focus on two of the most common types of conditions seen in OB patients: hypertensive disorders and hemorrhagic disorders.

Hypertensive disorders

Hypertensive disorders—preeclampsia and eclampsia—are the most common medical complications of pregnancy and the leading cause of ICU admissions during pregnancy and after birth.

Overview

Preeclampsia, defined as the onset of hypertension after the 20th week of pregnancy with or without proteinuria, is a leading cause of maternal morbidity and mortality. Although the exact cause

of preeclampsia is unknown, it's a result of generalized vasoconstriction and vasospasm that ultimately culminates in multisystem failure. It's primarily related to uteroplacental insufficiency and premature birth. Preeclampsia can develop and progress rapidly, and the earliest signs often go unnoticed by the patient. The disorder won't begin to resolve until after the baby is born and the placenta is delivered.

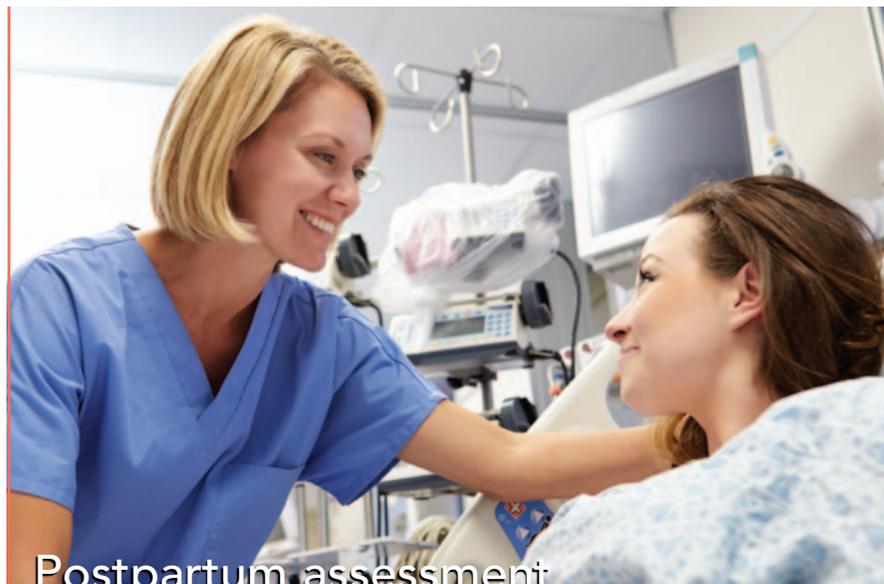
Signs and symptoms

Signs of preeclampsia include blood pressures (BPs) with systolic readings ≥ 160 mmHg or diastolic readings ≥ 110 mmHg on two or more occasions at least 4 to 6 hours apart while the patient is on bed rest. Other signs include lab results indicating thrombocytopenia (with platelets $< 100,000$ /microliter) and impaired liver function presenting as persistent right upper quadrant or epigastric pain that doesn't respond to medication and/or abnormally elevated liver enzymes (up to two times the normal concentration). Renal insufficiency can be progressive evidence of preeclampsia; serum creatinine concentrations > 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of renal disease may be present. Cerebral edema may occur with accompanying visual disturbances, such as blurred vision, dim or dark spots, and even blindness. In addition, patients with preeclampsia may present with oliguria evidenced by < 500 mL of urine in 24 hours.

Without immediate care, this multiorgan, multisystem disorder can lead to increased morbidity and mortality for both mother and baby.

Management

Nursing management goals for patients with severe preeclampsia include improved placental blood flow and fetal oxygenation and prevention of seizures and other maternal complications (stroke,



Postpartum assessment

After a critically ill postpartum patient's condition has stabilized, you need to perform postpartum assessments. These acronyms will help guide you.

BUBBLE (postpartum assessment)

Breasts: Size, shape, and engorgement. Are nipples inverted or cracked?

Uterus: Firm? Boggy? What is the height in relation to the umbilicus?

Bladder: Tender? Distended?

Bowel: Bowel movement? Bowel sounds?

Lochia: Amount? Odor? Color? Clots?

Episiotomy: Location? Stitches? Edema and redness?

REEDA (episiotomy assessment)

Redness

Edema

Ecchymosis

Discharge, drainage

Approximation

heart failure, and multiorgan/multi-system failure).

Antepartum patients are kept in bed, preferably in the lateral position to optimize fetal circulation. Keep the environment quiet, and limit external stimuli (lights, monitors, visitors). The frequency of fetal monitoring should be individualized but may depend on gestational age, the provider's orders, and maternal status. Fetal monitoring is a specialized skill requiring collaboration with an experienced OB nurse.

Labetalol, hydralazine, and nifedipine are the firstline drugs of choice to control severe hypertension because of their efficacy and preservation of uteroplacental blood flow.

Medication side effects may include subtle physiological changes such as weight gain, edema, headache, oliguria, epigastric and/or right-sided pain, and fetal distress.

To control seizures, the provider may order magnesium sulfate. This drug acts to relax smooth muscles (such as the uterus) and reduce vasoconstriction, which promotes circulation to the patient's vital organs and through the placenta to the fetus. Increased circulation to the kidneys may cause diuresis. Closely monitor the patient's BP, pulse, and respirations every 15 to 30 minutes, and check urinary output and presence of deep tendon reflexes.

In addition, monitor the patient for headache, level of conscious-

ness, visual disturbances, and epigastric pain. Lab values to watch include magnesium level, platelet count, creatinine clearance, uric acid, aspartate and alanine aminotransferase, prothrombin and partial thromboplastin time, fibrinogen, and fibrin split products. Keep the antidote calcium gluconate at the bedside when treating patients with magnesium.

If the patient's condition worsens, check for evidence of fetal distress or fetal demise; implement seizure precautions and care; assess for eclampsia, pulmonary edema, placental abruption, and disseminated intravascular coagulation (DIC); and monitor lab values for multisystem involvement. Imminent delivery is indicated if fetal or maternal assessment reveals these critical changes.

Hemorrhagic disorders

The second most common diagno-

Teamwork

An average of 80,000 adverse obstetric (OB) events occur each year in the United States. A systematic review by Bayes and Ewens of critical care nurses' experiences when caring for pregnant and postpartum women found that the nurses feel "not trained, incompetent, and needing further education."

Collaborative education with OB nurses can help address that critical care nursing skill gap. It should focus on clear standards of practice, including fetal monitoring, postpartum assessment, maternal and neonatal changes in physiology, and early warning signs of danger. In addition, evidence-based care guidelines that incorporate knowledge from both OB and critical care nursing can enhance patient outcomes.

sis for admitting OB patients to the ICU is PPH. Patients are admitted to treat hemodynamic instability and coagulopathy.

Overview

Diagnosing and treating PPH can be complicated because blood loss and fluid replacement related to birth are often inaccurately reported and underestimated. The diagnosis is made even more difficult because most women of childbearing age are young and healthy and can easily maintain normal BP, even with large amounts of blood loss, before serious physiological decompensation occurs. Most women with severe PPH in an ICU will develop DIC, a pathologic form of clotting that causes widespread external and internal bleeding.

Signs and symptoms

Critical care nurses are skilled at recognizing the signs and symptoms of hypovolemic shock, but they rarely encounter patients with PPH and OB patients with DIC. Before and after the patient with PPH gives birth, assess for signs of ab-



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normal or uncontrolled bleeding from the vagina, surgical sites (such as the cesarean delivery incision), and puncture wounds (I.V., injection, and epidural sites). Bleeding may indicate DIC and require immediate medical intervention.

Signs of hypovolemic shock include increased pulse rate, falling BP, and increased respirations. Peripheral pulses will become weak or thready, and the skin will become cool, moist, pale, and eventually cyanotic. Urinary output will decrease to ≤ 30 mL/hour until it's absent. In addition, hemoglobin and hematocrit levels will decrease. The patient's mental status will change; she'll become restless, agitated, and have difficulty concentrating. Patients with PPH require an astute nurse to identify the early signs of hypovolemic shock and DIC.

Management

Medical management involves cor-

recting the primary or underlying cause of DIC. Nursing management of PPH and DIC relies on a systematic and consistent approach to nursing assessment. This allows the nurse to immediately identify and prioritize care in response to subtle changes in the patient's condition. Based on the ongoing assessment, the nurse is in a position to choose interventions that are appropriate to the clinical manifestations observed.

Beyond critical care

When caring for postpartum patients in the ICU, your first priority is stabilizing the physiologic condition that required intensive care in the first place. After that, you'll need to address postpartum assessments and possibly support breastfeeding and mother-child bonding. (See *Postpartum assessment*.) OB nurses routinely conduct these assessments and pro-

vide this care to their patients, but this may be new territory for some critical care nurses. Your expert OB nurse colleagues can be your partners in caring for critically ill postpartum patients and their infants. (See *Teamwork*.)

Breastfeeding

After critical care issues are resolved, breastfeeding represents a return to the expected normalcy of childbirth. You may be asked to support or participate in maternal-infant bonding, breast pumping, or breastfeeding, especially if a lactation consultant isn't available. (See *Breastfeeding resources*.)

Bleeding disorders may result in difficulty breastfeeding because of decreased breast milk production. Studies show that significant postpartum blood loss may result in challenges initiating and sustaining breastfeeding, which will require more education and support and

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Breastfeeding resources

When caring for postpartum critically ill patients, nurses may need to support new mothers in their breastfeeding efforts. Tap into these resources to learn more.

Breastfeeding support

Use these resources to learn more about breastfeeding.

International Lactation Consultant Association (ilca.org). This organization's website includes an online community as well as a lactation consultant finder.

La Leche League USA (lllusa.org). Read blogs, search frequently asked questions, and find out about local events that support breastfeeding.

Breastfeeding in the NICU

Access these resources and share them with your patients whose babies are in intensive care.

Feeding your baby in the NICU (marchofdimes.org/baby/feeding-your-baby-in-the-nicu.aspx). This website offers ideas for meeting the challenge of breastfeeding in the neonatal intensive care unit (NICU).

Breastfeeding your infant in the intensive care unit

(ahc.aurorahealthcare.org/fywb/x18507.pdf). This patient handout provides information about the importance of breastfeeding and tips for mothers whose babies are in the intensive care unit.

may lead to long-term emotional effects for the mother. Intervention requires time and patience and an understanding of breastfeeding physiology. Breastfeeding often needs to be learned by both mother and baby, particularly when medical complications intervene.

Postpartum patients who are

cared for in the ICU report wanting to be recognized as new mothers. They've been separated from their babies, and they want nurses to acknowledge and act on their plans for breastfeeding or bottle feeding and address medication safety, milk expression, baby care, and barriers (such as distance from the baby).

Unique challenges

OB patients who are admitted to critical care settings may present a unique set of challenges. Stabilizing the patient's acute condition is your priority, but antepartum and postpartum assessment, in collaboration with your OB nurse colleagues, can help ensure good outcomes for both mother and child. ★

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