

Complications of Pregnancy



1 ©2004 AWHONN

AWHONN
Association of Women's Health,
Obstetric and Neonatal Nurses

The purpose of this module is to help you identify and assess pregnant women for some of the more frequently seen complications of pregnancy. The content contained in this module serves as an overview and does not include all pregnancy related complications you may encounter in your clinical setting.

Note to instructors: Please incorporate information about your facility policies and procedures related to caring for women with the conditions presented in this module. Routine care of antepartum high risk patients, including but not limited to activities of daily living and routine assessment of fetal well-being should be individualized to the patient's condition and your facility policies. Additional relevant teaching adjuncts, such as sample documentation forms, anatomic charts or equipment such as blood glucose monitoring devices may be incorporated into this presentation to reinforce information presented.

Objectives

- Describe theories of etiology, pathophysiology and management of hypertensive disorders in pregnancy
- Describe the pathophysiology and management of bleeding disorders in pregnancy
- Identify common perinatal infections, symptoms and treatment related to each infection

2 ©2004 AWHONN



The objectives for this module are to:

- Describe theories of etiology, pathophysiology and management of hypertensive disorders in pregnancy
- Describe the pathophysiology and management of bleeding disorders in pregnancy
- Identify common perinatal infections, symptoms and treatment related to each infection

(Objectives continued on next slide)

Objectives

- Differentiate the types of diabetes, risk factors and management in pregnancy
- Describe risk factors, theories of etiology and management of preterm labor
- Describe the prevalence and physiology of multiple gestations and nursing care of women with twins and higher order multiples

3 ©2004 AWHONN



(Objectives continued)

- Differentiate the types of diabetes, risk factors and management in pregnancy
- Describe risk factors, theories of etiology and management of preterm labor
- Describe the prevalence and physiology of multiple gestations and nursing care of women with twins and higher order multiples

Management of Eclampsia

GOAL	MANAGEMENT
Control Seizures	Protect patient Protect airway Magnesium sulfate
Control Hypertension	Hydralazine or Labetalol Other antihypertensive medications
Stabilize & Deliver	Maternal – fetal assessment Delivery method dependent on maternal, fetal & obstetric conditions

4 ©2004 AWHONN



Let's discuss nursing measures that address each of these goals. Bear in mind that this situation is an emergency and you'll need to summon additional medical and nursing help. When the woman has known or suspected preeclampsia, precautions include (but may not be limited to) maintaining side rails in an up position (and padded when feasible) and having airway equipment and magnesium sulfate readily available (Sibai, 2002).

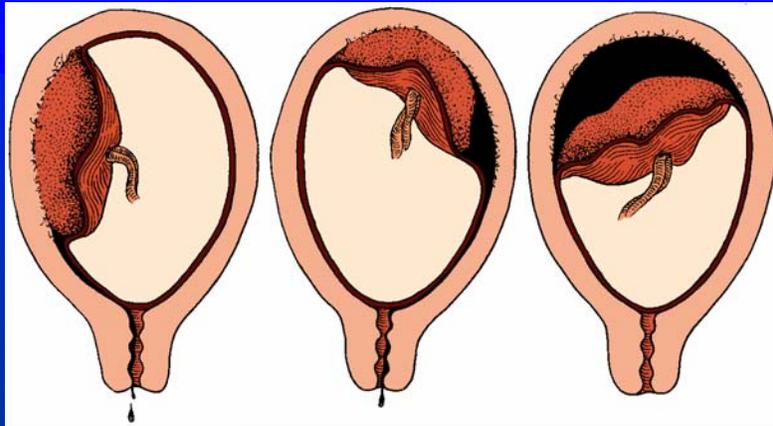
Immediate care during a seizure should be to help protect the patient from injury and ensure a patent airway. When you are able to do so, inserting a padded tongue blade or oral airway between the patient's teeth helps to prevent her from biting her tongue and helps to maintain the airway. Although the risk of aspiration is low with proper management, suctioning should be used to clear secretions from the patient's mouth and the patient should be positioned on her side to minimize this risk of aspiration. You may need to gently hold your patient to prevent injury to her extremities or other parts of her body (Sibai, 2002).

Supplemental oxygen should be administered and a Magnesium Sulfate bolus dose prepared and given according to physician orders. A suggested protocol includes administering a 4 to 6 gram loading dose diluted in 100 ml of intravenous fluid over 15 to 20 minutes, followed by a 2 gram per hour continuous infusion (ACOG, 2002a; Sibai, 2002). Once magnesium sulfate therapy is initiated magnesium levels should be monitored to evaluate the therapeutic range and the risk of toxicity. This is an important component of assessment because most of magnesium sulfate is cleared via the kidneys, therefore, magnesium levels may be high in patients who have renal compromise magnesium sulfate (Poole, 2001; Sibai, 2002).

Antihypertensive therapy for diastolic blood pressures of 105 to 110 mmHg or higher may include the use of hydralazine or labetalol, according to physician orders. Doses of 5 to 10 mg of Hydralazine may be administered intravenously every 15 to 20 minutes until pressure is stabilized. A suggested protocol for labetalol is an initial 20 mg intravenous dose bolus dose, followed by a 40 mg dose, if the first dose is not effective within 10 minutes (ACOG, 2002a). Other antihypertensive medications may be administered according to your facility or obstetric service guidelines.

The ultimate treatment for eclampsia in the antepartum or intrapartum period is delivery. Ongoing maternal assessments include auscultation of the lungs, vital signs, including respiratory rate, level of consciousness, assessment of reflexes and evaluation of other diagnostic or therapeutic measures, such as blood gases. Fetal status should be evaluated on a continuum. Alterations in the FHR, such as bradycardia may occur with seizures and measures to correct fetal heart rate patterns should be initiated. Stabilization of the mother

Classification of Abruption



5 ©2004 AWHONN

AWHONN
Association of Women's Health,
Obstetric and Neonatal Nurses

Placental abruption may occasionally be identified with ultrasound, but is usually confirmed when inspection of the placenta after birth shows a retroplacental clot and disruption of the underlying placental tissue. Abruptions are classified, and depicted on the slide from left to right as Grade 1, 2 or 3 depending on the degree of detachment (Benedetti, 2002):

- **Grade 1:** This is minimal separation of the placenta. Mild vaginal bleeding and some uterine irritability present, but there is usually no change in maternal blood pressure, or in fetal heart rate patterns.
- **Grade 2:** This is partial separation of the placenta. External bleeding tends to be mild to moderate. The uterus maybe tender to palpation, and tetanic or frequent uterine contractions may be seen. The maternal heart rate may be elevated and the woman may experience postural hypotension. The fetal heart rate may show no sign of compromise.
- **Grade 3:** As you can see on the slide, this is the most significant form of abruption. Bleeding is moderate to severe, but may be concealed if the edges of the placenta remain attached. There is usually significant uterine tetany and the abdomen is painful to palpation. Maternal and fetal decompensation are more common, the more severe the separation. Fibrinogen levels are often dangerously low, and platelets and other clotting factors may be depleted. Grade 3 abruptions are most highly associated with maternal and fetal morbidity and mortality.

Compensated Shock

SYSTEM	RESPONSE	PURPOSE
Sympathetic NS	<ul style="list-style-type: none"> ➤ Peripheral venous & arteriolar vasoconstriction ➤ Central arterial resistance unchanged 	<ul style="list-style-type: none"> ➤ Maintain cardiac output ➤ Maintain brain & heart blood flow
Respiratory (CNS)	Increased respiratory rate	Maintain oxygenation
Endocrine	Antidiuretic hormone Aldosterone	Conserve fluid volume
Renal	Angiotensin formation	Decrease fluid excretion

6 ©2004 AWHONN



How does the body work to protect itself from the effects of hemorrhage? Initially, our bodies have an amazing ability to compensate for blood loss provided that the central nervous system is intact and depending on the severity of the hemorrhage. **When the central nervous system is intact, intrinsic compensatory mechanisms** are activated to maintain adequate blood flow to body organs and tissue. If blood loss is not too rapid or severe, you may observe signs, such as those we have just identified, that tell you your patient may be in a state of non-progressive, or compensated shock (Guyton & Hall, 1997). Let's examine the physiologic basis for these signs.

In the presence of hemorrhage and hypovolemia, **powerful sympathetic nervous system reflexes** (primarily baroreceptors, or pressure receptors) stimulate systemic vasoconstriction. **Peripheral veins and arterioles are constricted** resulting in increased vascular resistance that helps maintain venous return of blood to the heart; and maintains cardiac output of oxygenated blood to the vital organs, despite diminished circulating blood volume. On the other hand, **the sympathetic nervous system response does not result in constriction of the coronary or cerebral arteries** in the face of decreased volume as long as arterial pressure remains above 70 mmHg. Therefore, in the early stages of hemorrhage when the body is compensating for volume loss, the net result is tachycardia and maintenance of or a slight increase in blood pressure (Guyton & Hall, 1997).

The **respiratory centers** in the brain respond to hypoxia (known as the chemoreceptor response) by increasing the respiratory rate to help maintain organ and tissue oxygenation. Lightheadedness may be observed in response to decreased oxygenation and hyperventilation (Guyton & Hall, 1997).

The **pituitary gland is stimulated** in response to hypovolemia that results in the production of antidiuretic hormone (also known as vasopressin) and aldosterone, which together promote absorption of water (antidiuretic hormone) and sodium (aldosterone) by the kidneys to conserve circulating fluid volume (Guyton & Hall, 1997).

In the **kidneys**, the renin-angiotensin mechanism is stimulated in response to hypoxia in the renal tubules. Renin is converted into angiotensin, a potent vasopressor that causes constriction of the renal arterioles and further stimulates aldosterone production. The effect is decreased fluid excretion and increased retention of water and sodium that helps maintain normal vascular volume (Guyton & Hall, 1997). The net effect of the responses of the endocrine and renal systems is reduced urinary output or oliguria.

As long as the body maintains the ability to compensate for hypovolemia, timely intervention with fluid volume and blood replacement may prevent shock from progressing