

# Preeclampsia Update

For Obstetric Nurses

# Objectives

- Outline latest definitions and treatment guidelines for hypertension in pregnancy from ACOG.
- Analyze how ACOG's updated recommendations affects nursing practice.
- Discuss management of an obstetric patient in hypertensive crisis and an eclamptic seizure.
- Review points for preeclampsia patient education and discharge teaching.

# New Updates Available

- In 2013, the American College of Obstetricians and Gynecologists (ACOG) convened a Task Force on Hypertension in Pregnancy to review data and publish the latest evidenced-based guidelines
- They published their findings and recommendations in a document entitled *Hypertension in Pregnancy*
- After reviewing this information, physician and nurse leaders at Cox worked to update our practices according to these guidelines
- At Cox, this resulted in the development of the *Preeclampsia Care Guideline* (available in the Standards Manual on the IntraWeb) as well as new and updated orders

**You'll be interested to know that the long-known standard definition for preeclampsia has **changed**.**

Learn more on the following slides about how this affects your nursing practice.

# First, let's review some terms:

- Hypertension during pregnancy has been broken down in four categories:
  - Preeclampsia/Eclampsia
    - Definition on following slide
  - Chronic hypertension
    - Hypertension (>140 systolic or >90 diastolic) that predates pregnancy
  - Chronic hypertension with superimposed preeclampsia
    - A mother with diagnosed chronic hypertension with worsening
  - Gestational hypertension
    - BP elevation in the absence of proteinuria or systemic findings
      - \*Formerly known as *Pregnancy Induced Hypertension* or *PIH*

# New Definition of Preeclampsia

- With a better understanding of preeclampsia, the Task Force *has eliminated the dependence of the diagnosis of preeclampsia on proteinuria*.
- **This doesn't mean that proteinuria been eliminated from the diagnosis**
  - But it does means that patients no longer need to have protein in the urine to be diagnosed with preeclampsia

*Take a look at the following slide for the new definition. Note the new criteria/symptoms now included.*

## Diagnostic Criteria for Preeclampsia

Blood Pressure	≥140mmHg systolic or ≥90mmHg diastolic on two occasions at least 4 hours apart after 20 weeks' gestation in a previously normotensive woman
<b>AND</b>	
Proteinuria	<ul style="list-style-type: none"> <li>• ≥300mg per 24-hour urine collection (or this amount extrapolated from a timed study) <b>OR</b></li> <li>• Protein/creatinine ratio greater than or equal to 0.3mg/dL</li> </ul>
<b>OR IN THE ABSENCE OF PROTEINURIA, NEW-ONSET HYPERTENSION WITH THE NEW ONSET OF <u>ANY</u> OF THE FOLLOWING:</b>	
Thrombocytopenia	Platelet count less than 100,000/microliter
Renal insufficiency	Serum creatinine concentrations greater than 1.1mg/dL or a doubling of the serum creatinine concentration in the absence of other renal disease
Impaired liver function	Elevated blood concentrations of liver transaminases (AST, ALT) to twice normal concentration
Pulmonary edema	
Cerebral or visual symptoms	

# Severe Preeclampsia

- The definition of Severe Preeclampsia has also **changed**:

## Severe Features of Preeclampsia (ANY of these findings)

- Systolic blood pressure of 160mmHg or higher, or diastolic blood pressure of 110mmHg or higher on two occasions at least 4 hours apart while the patient is on bedrest (unless antihypertensive therapy is initiated before this time)
  - Thrombocytopenia (platelet count less than 100,000/microliter)
  - Impaired liver function as indicated by abnormally elevated blood concentrations of liver enzymes (to twice normal concentration), severe persistent right upper quadrant or epigastric pain unresponsive to medication and not accounted for by alternative diagnoses, or both
  - Progressive renal insufficiency (serum creatinine concentration greater than 1.1 mg/dL or a doubling of the serum creatinine concentration in the absence of the other renal disease)
  - Pulmonary edema
  - New-onset cerebral or visual disturbances
- **Note how the new definition is not dependent on proteinuria.**

# Pregnancy, Preeclampsia, and Proteinuria

- From the Task Force:
  - “In view of recent studies that indicate a minimal relationship between the quantity of urinary protein and pregnancy outcome in preeclampsia, massive proteinuria (greater than 5 g) has been eliminated from the consideration of preeclampsia as severe.”
- Please note that although the guidelines have changed, protein in the urine is still an important finding for diagnosis and should be reported to the physician. Proteinuria may be defined as:
  - $\geq 300$  mg per 24-hour urine collection (or this amount extrapolated from a timed study—for instance, if the patient has a 12 hour urine collection)
  - Protein/creatinine ratio  $\geq 0.3$ mg/dL
  - Dipstick reading of 1+ (this is used only if other methods are not yet available, and is to be used only as a screening tool at this facility)

# Assessment of the Hypertensive Woman

To adequately identify possible preeclamptic signs and symptoms, note for the presence/worsening of the following:

- Increasing blood pressure
- Headache
- Visual Changes—blurred vision, floaters, spots, blind spot.
- Altered level of consciousness—agitation, restlessness, lethargy, hallucinations, confusion
- Right upper quadrant or epigastric pain
- Nausea/vomiting
- General malaise
- Urine output <30 ml/hr
- Significant, rapid weight gain
- Complaints of chest pain
- Tachycardia >100 bpm
- Shortness of breath
- SaO<sub>2</sub> of <95% or cough
- Adventitious breath sounds—rales, rhonci, wheezing, etc.
- Tachypnea >26 breaths per minute
- Abnormal lab values

# Assessment of the Hypertensive Woman

Also, assess the following:

- Upper or lower deep tendon reflexes
- Assess for generalized edema
- Assess blood pressure using an appropriately sized BP cuff while the patient is sitting or is in a semi-fowlers position with her arm at the level of the heart.
  - **DO NOT** reposition the patient to her left side and retake blood pressure on the right arm, as it will produce a falsely lower reading.
- Apply the fetal/uterine monitor
- Monitor strict intake and output.

**Now let's look at some of the other recommendations for care and management of women with hypertensive disorders of pregnancy.**

# Management—When to Deliver

- For women with mild gestational hypertension or preeclampsia without severe features and no indication for delivery **at less than 37 0/7** weeks' gestation, **expectant management** with maternal and fetal monitoring is suggested.
- For women with mild gestational hypertension or preeclampsia without severe features **at or beyond 37 0/7** weeks' gestation, **delivery** rather than continued observation is suggested.
- Summary:
  - Do not deliver patients less than 37 weeks' unless she has severe preeclampsia criteria or other indications.
  - Deliver a patient once she reaches 37 weeks' if she has gestational hypertension or preeclampsia.

# Management—When to use Magnesium Sulfate

- For women with preeclampsia with systolic BP of  $<160$ mmHg and a diastolic BP  $<110$ mmHg and no maternal symptoms, it is suggested that magnesium sulfate not be administered universally for the prevention of eclampsia
- Summary:
  - Reserve magnesium sulfate only for when a patient has severe features.
  - When a patient has a blood pressure of  $\geq 160$ mmHg systolic OR  $\geq 110$ mmHg diastolic on two occasions taken at least 15 minutes apart, or has signs and symptoms such as headache, altered mental status, blurred vision, scotoma, photophobia, clonus, and epigastric or RUQ pain, magnesium sulfate should be considered.

# Magnesium Sulfate

- Recall that magnesium sulfate is the primary medication used in the prevention and management of eclamptic seizures and it works by depressing the central nervous system.
- It has been shown to be more effective for eclamptic seizures than diazepam or phenytoin.

# Management—Hypertensive Crisis

- When women have preeclampsia with severe hypertension during pregnancy (sustained systolic BP of at least 160mmHg or diastolic BP of at least 110mmHg), the use of antihypertensive therapy is recommended.
- Summary:
  - The decision to use drugs like labetalol and hydralazine to lower the patient's blood pressure is no longer dependent upon the patient's mean arterial pressure. When the patient has sustained blood pressures at or above 160mmHg systolic OR 110mmHg diastolic, the patient needs antihypertensive medication right away.

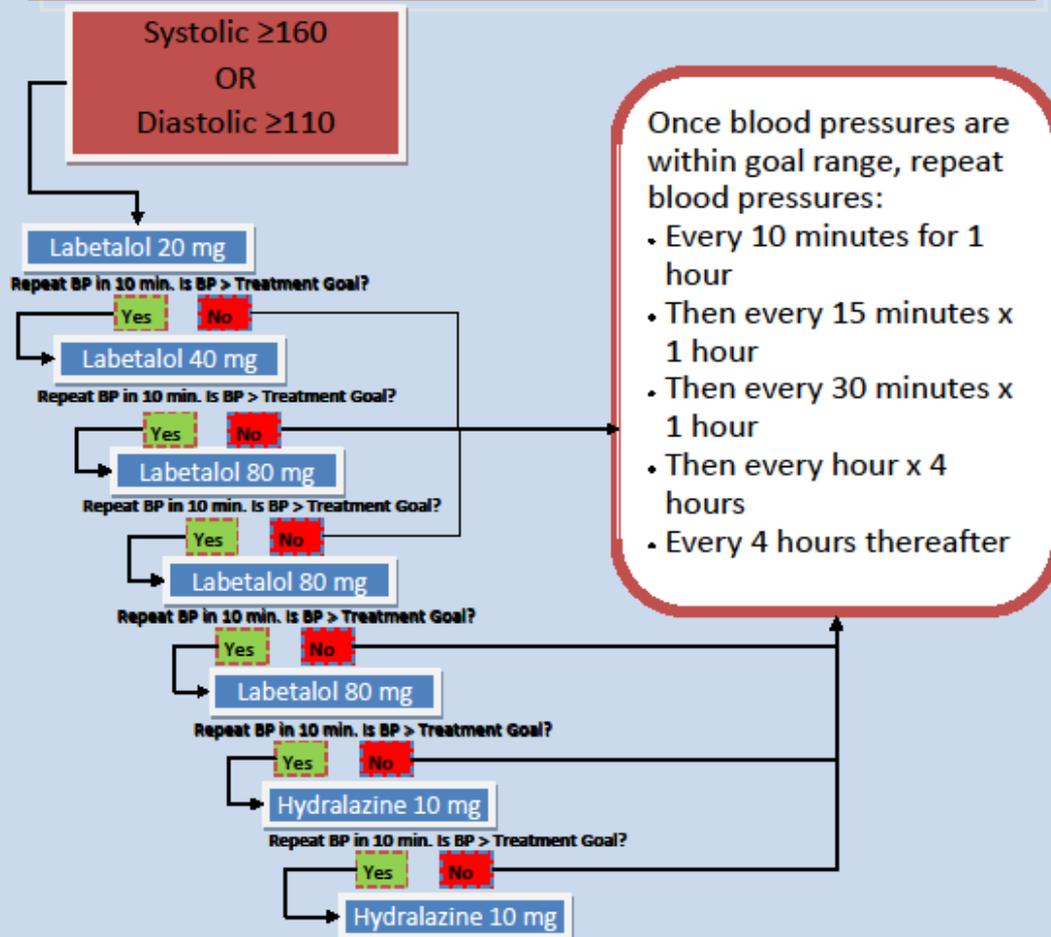
# Hypertensive Crisis

- We treat sustained blood pressures  $\geq 160$ mmHg systolic or  $\geq 110$ mmHg diastolic to prevent complications:
  - Cardiovascular: congestive heart failure or heart attack
  - Cerebrovascular: ischemic or hemorrhagic stroke
- Our objective as bedside clinicians is to identify hypertensive crisis early and treat immediately to avoid these life-threatening risks.
  - Goal: Treat patient to decrease BP to 140-160mmHg systolic and 90-100mmHg diastolic.
- Next, take a look at the CoxHealth Obstetric Hypertensive crisis algorithm

# CoxHealth Obstetric Hypertensive Crisis Algorithm

**Definition:** Hypertensive Crisis is SBP  $\geq 160$  mmHg or DBP  $\geq 110$  mmHg sustained for  $\geq 15$  minutes

**Treatment goal:** SBP 140-160 mmHg and DBP 90-100 mmHg



## Note:

All doses of labetalol and hydralazine are to be given IV push over 2 minutes.  
Maximum dose Labetalol: 300 mg  
Maximum dose Hydralazine 30mg

# Hypertensive Crisis

- You'll be able to view this algorithm again after completing this module.
- This is a visual flowchart that represents the orderset used for effectively reducing blood pressure to a safer range (*not* a "normal" range) to prevent complications.
- Note the emphasis placed on time:
  - According to ACOG, a hypertensive emergency is an acute-onset, severe hypertension that is persistent for 15 minutes or more.
  - Women in a hypertensive crisis should receive medication to reduce blood pressure as soon as possible.
  - Each dose of medication is timed.

# Management—Eclampsia

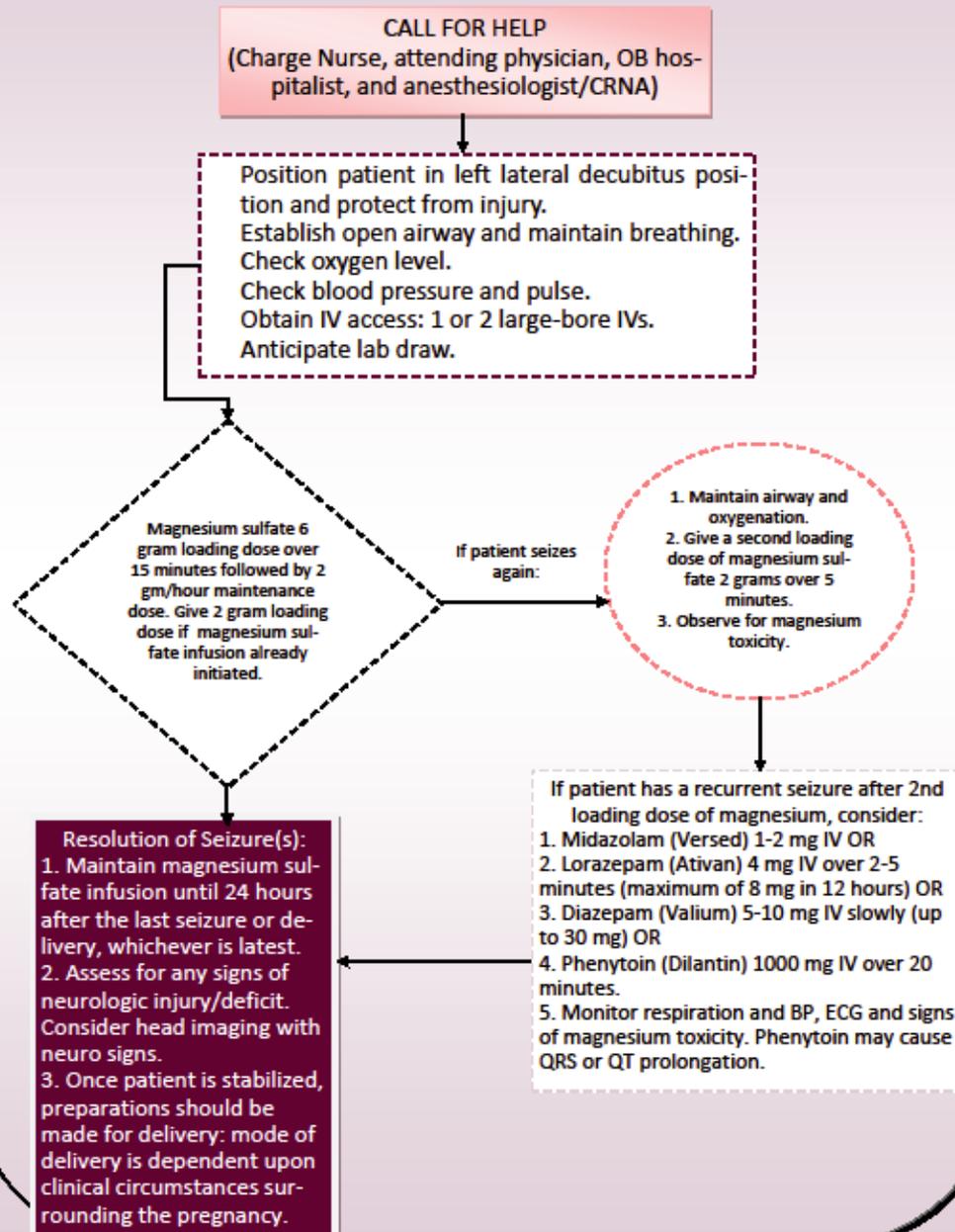
- Finally, it is helpful to periodically review the management of an eclamptic seizure.
- Remember, this patient is at risk for aspiration and cerebral hemorrhage. The best treatment for baby is maternal stabilization.

# Management—Eclampsia

If a patient has an eclamptic seizure:

- Notify charge nurse, attending physician, and anesthesiologist immediately.
- Position patient on side.
- Protect from injury.
- Prepare to administer magnesium sulfate.
- Anticipate obtaining lab tests.
- Following seizure:
  - Suction mouth.
  - Give oxygen by non-rebreather mask at 10 liters per minute.
  - Provide ventilatory support as needed.
  - Assess blood pressure, pulse, and respirations every 5 minutes.
  - Assess oxygen saturation and level of consciousness every 15 minutes until stable for a minimum of one hour.
  - Monitor fetal heart rate and uterine activity continuously if viable fetus present.
  - Observe for signs and symptoms of placental abruption or impending delivery.

# CoxHealth Systems Eclampsia Algorithm



# Eclampsia Algorithm

- You'll also be able to view this algorithm again at the end of this module.

# Did you know?

- According to the research gathered by the Task Force, women may develop preeclampsia and eclampsia up to 4 weeks postpartum—were you aware of that?
  - Hence, there is a strong recommendation that all women in the postpartum period (not just women with preeclampsia) receive discharge instructions that include information about the signs and symptoms of preeclampsia as well as the importance of prompt reporting of this information to their health care providers.

# Patient Education

- Part of providing nursing care and management of preeclampsia is patient education for the woman and her family. You may find the key words and scripting on the next slide to be helpful in explaining this complicated disease.

“Preeclampsia is a serious disease related to high blood pressure. It can happen to any pregnant woman.”

“There are risks to you: seizures, stroke, organ damage, or death; and to your baby: premature birth or death.”

“Symptoms include...”

“If you experience any concerning symptoms, call your health care provider right away. Finding preeclampsia early is important for you and your baby.”

**Next, you'll have an opportunity to view  
and read the CoxHealth Preeclampsia Care  
Guideline.**

# References

- Task Force for Hypertension in Pregnancy of the American College of Obstetricians and Gynecologists. (2013). *Hypertension in pregnancy*. ACOG.
- California Maternal Quality Care Collaborative. (2013). *Improving health care response to preeclampsia: A California quality improvement toolkit*. CMQCC.