Maternal Complications in Pregnancy - Gestational Diabetes, Hypertension & Preeclampsia

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All Babies Are Not Created Equally

Top Left- Small for Gestational Age
Top Right- Large for Gestational Age
Bottom Right- Appropriate for Gestational Age
3 Factors that can affect growth and development

- High Blood Sugars
- High Blood Pressure
- Preeclampsia

Diabetes in pregnancy - Gestational Diabetes Mellitus (GDM) -

- Women do not have gestational diabetes before 24-28 weeks of pregnancy
  - If it is before 24-28 then considered undiagnosed Type 2 diabetes
- 6-7% estimated pregnancies complicated by GDM
- Increased in Latina, African American, Native American and Pacific Islander women
- Increase in National obesity and sedentary lifestyle further increase risk
- Pregnant women should be screened between 24-28 weeks in pregnancy
- Earlier screening in pregnancy if suspected undiagnosed Type 2 diabetes
  - Risk factors include:
    - Obesity - BMI greater than or equal to 30
    - Previous pregnancy with GDM
    - Known problem with metabolizing glucose
    - Screening includes Oral Glucose Tolerance Test
How can pregestational diabetes affect pregnancy?

- Birth defects- including cardiac
- High blood pressure
- Preeclampsia
- Cesarean delivery
- 60% Latina women may develop Type 2 diabetes by 5 years after pregnancy
- 50% for rest of female population
- Neonatal hypoglycemia
- Fetal death
- **Hydramnios**—In this condition, there is an increased amount of *amniotic fluid* in the amniotic sac that surrounds the baby. It can lead to *preterm* labor and delivery.
- Macrosomia (very large baby)—The baby receives too much glucose from the mother and can grow too large. A large baby can make delivery more difficult. A large baby also increases the risk of having a *cesarean delivery*.

Women with diabetes and wish to become pregnant- Why it is important to tell their health care provider?

- Their health care provider will help them get their blood glucose level under control before they become pregnant (if it is not already).
- Controlling glucose level is important because some of the birth defects caused by high glucose levels happen when the baby’s organs are developing in the first 8 weeks of pregnancy—before they may know they are pregnant.
- Getting glucose levels under control may require changing medications, diet, and exercise programs.
Treatment for GDM

- Special diet
  - Should be counseled by a registered dietician
  - Diet should include: Caloric allotment, carbohydrate intake and caloric distribution
- Increased activity
- Checking blood sugar 4 times a day with a blood glucose monitor
  - Fasting
  - 1-2 hours after the first bite of every meal
- Oral medications
- Insulin

Those pregnant women whose 1-2 hour blood sugars after eating were in ideal range had significantly less rates of LGA babies and cesarean sections. ADA and ACOG recommend 140mg/dl 1 hour after first bite and 120 mg/dl 2 hours after first bite.

Special considerations for women with GDM

- Pregnant women with either pregestational or gestational diabetes are at risk for fetal death when blood sugars are not controlled
- OB may have woman seen by a Maternal Fetal Medicine (MFM) doctor
- Antenatal testing recommended for women with pregestational diabetes or poorly controlled GDM
- If GDM well controlled and no other complication may deliver normally
- If poor control or other complication may need to be induced or have C/S, with increased risk for birth trauma for baby and infection, hemorrhage for mother.
What to do after pregnancy

Estimated 15-50% of women with GDM will develop type 2 diabetes later in life, with Latina’s being at 50%.

❖Postpartum screening at 6-12 weeks for ALL WOMEN who had GDM

Hypertension and Preeclampsia

❖Chronic hypertension is high blood pressure that was present before woman becomes pregnant or occurs in the first half (before 20 weeks) of pregnancy.
❖Gestational hypertension is high blood pressure that first occurs in the second half (after 20 weeks) of pregnancy.
❖Fetal growth restriction—High blood pressure can decrease the flow of nutrients to the baby through the placenta. The baby may have growth problems as a result.
❖Preeclampsia—This condition is more likely to occur in women with chronic high blood pressure than in women with normal blood pressure.
❖Preterm delivery—If the placenta is not providing enough nutrients and oxygen to your baby, it may be decided that early delivery is better for baby than allowing the pregnancy to continue.
❖Placental abruption—This condition, in which the placenta prematurely detaches from the wall of the uterus, is a medical emergency that requires immediate treatment.
❖Cesarean delivery—Women with hypertension are more likely to have a cesarean delivery than women with normal blood pressure. A cesarean delivery carries risks of infection, injury to internal organs, and bleeding.
What is Preeclampsia?

Preeclampsia is a serious blood pressure disorder that can affect all of the organs in a woman’s body. A woman has preeclampsia when she has high blood pressure and other signs that her organ systems are not working normally. One of these signs is proteinuria (an abnormal amount of protein in the urine).

A woman with preeclampsia whose condition is worsening will develop other signs and symptoms known as “severe features.”

- Low number of platelets
- Abnormal kidney or liver function
- Pain over the upper abdomen
- Changes in vision
- Fluid in the lungs
- Severe headache
- Very high blood pressure reading also is considered a severe feature

Occurs after 20 weeks of pregnancy - in the third trimester
Can occur in the postpartum period

Who is at risk?

Women who...
- are pregnant for the first time
- have had preeclampsia in a previous pregnancy or have a family history of preeclampsia
- have a history of chronic hypertension, kidney disease, or both
- are 40 years or older
- are carrying more than one baby
- have certain medical conditions such as diabetes mellitus, thrombophilia, or lupus
- are obese
- had in vitro fertilization
Risks to Mother

*Women who have had preeclampsia—especially those whose babies were born preterm—have an increased risk later in life of*

- Cardiovascular disease
- Heart attack
- Stroke
- Chronic high blood pressure
- Kidney disease

- Having preeclampsia once increases the risk of having it again in a future pregnancy. Preeclampsia also can lead to seizures, a condition called *eclampsia*.

*It also can lead to HELLP syndrome.*

- HELLP stands for *hemolysis, elevated liver enzymes*, and low platelet count. In this condition, red blood cells are damaged or destroyed, blood clotting is impaired, and the liver can bleed internally, causing chest or abdominal pain. HELLP syndrome is a medical emergency.

*Women can die from HELLP syndrome or have lifelong health problems*

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Signs and Symptoms

- Swelling of face or hands
- A headache that will not go away
- Seeing spots or changes in eyesight
- Pain in the upper abdomen or shoulder
- Nausea and vomiting (in the second half of pregnancy)
- Sudden weight gain
- Difficulty breathing
How is mild gestational hypertension or preeclampsia *without* severe features managed?

• Daily *kick count*
  • Measure your blood pressure at home
  • Office visits with provider 1 or 2 times a week
  • 37 weeks of pregnancy may need to deliver
  • Possibly may need to have the baby earlier

How is preeclampsia with severe features managed?

❖ Typically treated in the hospital.
❖ If mom is at least 34 weeks pregnant most likely deliver
❖ Less than 34 weeks pregnant and condition is stable- remain in hospital and try
  and wait.
❖ *Corticosteroids* may be given- help baby’s lungs mature
❖ Medications given to reduce your blood pressure
❖ Magnesium Sulfate given to help prevent seizures.
❖ If mother’s condition or the baby’s condition worsens-prompt delivery will be
  needed.
What steps can women take to help prevent maternal and fetal complications?

**Prevention Prevention Prevention Prevention!!!!!!!**

- Hypertension and is planning a pregnancy,
  - Make sure she sees her health care provider for a prepregnancy check-up
- Need to find out whether her hypertension is under control and whether it has affected her health.
- Overweight
  - Weight loss usually is advised before pregnancy.
- Medical conditions, such as diabetes
  - Recommended that your condition be well controlled before you become pregnant.

### Resources to use

- [http://www.acog.org/Patients/Patient-Education-Pamphlets-Spanish-List](http://www.acog.org/Patients/Patient-Education-Pamphlets-Spanish-List)
- [http://www.preeclampsia.org/health-information/sign-symptoms](http://www.preeclampsia.org/health-information/sign-symptoms)