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Many women have been diagnosed with hypertension (blood pressure >140/90 mm Hg) when they were in their childbearing years. Because the hypertension predates the pregnancy, it is called chronic hypertension. This type of hypertension complicates at least 5% of all pregnancies. When managed appropriately, most women with chronic hypertension can experience healthy pregnancies and give birth to healthy babies. To accomplish this goal, it is important that women with chronic hypertension let their doctors know when they are planning a pregnancy so that they can receive pregnancy counseling and so that adjustments to antihypertensive medications can be made if needed.

What Is Chronic Hypertension?

There are 2 types of chronic hypertension: essential hypertension and secondary hypertension. We do not know the cause of essential hypertension, but because hypertension commonly runs in families, we know that genes are involved. A minority of individuals have secondary hypertension, which means that the hypertension is explained by another condition such as kidney disease, narrowing of the artery to the kidney, and adrenal tumors. In many such cases, the hypertension will resolve after treatment for the underlying problem. If you are undergoing evaluation for a secondary form of hypertension, it is advisable to be treated for the underlying condition before becoming pregnant. A third type of hypertension is called pregnancy-induced hypertension (Table 1). Some women develop new-onset hypertension in pregnancy, which can present in the second half of pregnancy, usually in the third trimester.[1,2]

What Are Some of the Complications of Chronic Hypertension During Pregnancy?

Most women with chronic hypertension do well in pregnancy. In normal pregnancy, blood pressure falls at the end of the first trimester and then increases to prepregnancy values in the third trimester. For the majority of women with chronic hypertension, blood pressure follows the same pattern. Some women, however, experience a rise in blood pressure during pregnancy, which can increase their risk for stroke and other complications and may therefore require more aggressive antihypertensive treatment. A healthcare professional should monitor you to ensure that a hypertension-related complication does not develop.

A more worrisome complication of chronic hypertension is the development of superimposed preeclampsia. Preeclampsia is a serious condition that can affect many organ systems and cause liver dysfunction, kidney failure, and an increase in bleeding tendency, and at times it can progress to eclampsia seizures. Superimposed preeclampsia is more likely to occur in women who have poorly controlled hypertension, underlying renal disease, and diabetes mellitus. At present, there is no treatment for preeclampsia except for delivery of the baby; therefore, babies of women who have this condition are frequently born prematurely. Another complication of chronic hypertension that may cause premature birth is placental abruption. An abruption is an early separation of the placenta from the wall of the uterus, usually leading to strong contractions, bleeding, and early delivery (Table 2).

How Does Chronic Hypertension in Pregnancy Affect the Fetus?

If, despite medications, blood pressure rises to a level that would put you at risk for a stroke or other organ complications, your doctor may recommend that your baby be delivered early. If you have developed superim-

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TABLE 1. Types of Hypertension in Pregnant Women

Chronic hypertension: hypertension predates pregnancy
Essential hypertension
Secondary hypertension
Hypertension induced by pregnancy: hypertension first becomes manifest during pregnancy

posed preeclampsia that is causing damage to organs in your body, your doctor may recommend early delivery. Early delivery is associated with prematurity. If an early delivery is planned, your body may not be ready to deliver the baby vaginally, so there is a greater chance that you might need a cesarean section. Hypertension may also affect the development of the placenta, which is important for the nourishment and growth of the fetus. Thus, some babies may be affected by low amniotic fluid levels and/or intrauterine growth restriction (Table 3).

Should I Take My Blood Pressure Medications During Pregnancy?

Some medications should not be taken during pregnancy, and your doctor may need to change your medications before you become pregnant. When you are not pregnant, your blood pressure medications affect only you, but when you are pregnant, these medications may cross the placenta and affect your fetus. We do not know definitively which blood pressure medications should be used in pregnancy, so we generally use the ones that have been used for the longest amount of time in many pregnant women without serious problems (Table 4).[1,3]

There are some medication classes that we do not use in pregnant women. Angiotensin-converting enzyme inhibitors are very commonly used to treat chronic hypertension. This drug class can cause problems in the fetus, including an increased risk of birth defects[4] and kidney failure. Angiotensin II receptor blockers also should be avoided in pregnancy because they have many effects similar to those of angiotensin-converting enzyme inhibitors and their use in pregnancy has been associated with renal failure in the fetus. Aldosterone receptor blockers should be avoided until more information is available. If you are on a medication in these classes, it is important that you see your doctor before becoming pregnant so that your medication can be changed.

TABLE 2. Complications of Chronic Hypertension in Pregnancy

Pregnancy-aggravated hypertension
Superimposed preeclampsia
Placental abruption

TABLE 3. Fetal and Neonatal Complications of Hypertension in Pregnancy

Prematurity
Placental insufficiency
Intrauterine growth restriction
Placental abruption

How Low Should My Blood Pressure Run in Pregnancy?

Outside of pregnancy, blood pressure goals for nondiabetic women are <140/90 mm Hg. This goal is chosen to help prevent the complications of hypertension such as heart attacks and strokes. In pregnancy, the goal for your blood pressure may be loosened because it is important for the fetus to receive enough blood flow. Furthermore, because pregnancy is only 9 months, concern at that time is less focused on the long-term complications of hypertension. Your doctor will discuss with you blood pressure goals for pregnancy.

TABLE 4. Blood Pressure Medications Commonly Used During Pregnancy

Alpha-methyldopa
Labetalol
Calcium channel blockers

Will My Obstetrician Monitor My Pregnancy Differently Because of My Hypertension?

It is likely that you will have a few more visits with your obstetrician during the third trimester of your pregnancy because your blood pressure will need to be monitored more frequently. Your doctor will be on the lookout for signs of bleeding, which may indicate placental abruption. In addition, you may have ultrasound monitoring of the baby to watch for problems such as intrauterine growth restriction and low amniotic fluid. Your urine will be tested at each visit to look for signs of protein loss, which can be a sign of developing complications. Your doctor may ask you to complete a 24-hour collection of urine to test more accurately for protein loss and may recommend blood tests to check your blood counts and your liver and kidney function.

What Signs and Symptoms Should I Watch for During Pregnancy?

It is a good idea to learn how to measure your blood pressure at home. If you notice that your blood pressure is running higher than usual, you should call your doctor. If you develop headaches, you should check your blood pressure and call your doctor. Many women develop edema (swelling) in their feet and ankles during normal pregnancy. If you notice swelling of your hands and face or if the edema is in your calves, you should call your doctor. It is also important to pay attention to the baby's movements, which should occur several times per hour in the third trimester of pregnancy. If you notice a decrease in these movements, you should call your doctor.

What Can I Do to Have a Healthy Pregnancy?

Women with chronic hypertension can and do have healthy babies. Before becoming pregnant, you should speak to your doctor about whether you should change your blood pressure medications. Your doctor may want to do some baseline tests of your kidney function. In

addition, women who are overweight are more likely to develop preeclampsia, so if you are overweight, it would make sense to lose weight before becoming pregnant. During pregnancy, you should monitor your blood pressure at the frequency your doctor recommends and be sure to keep all your doctor appointments. At your appointments, your doctor also will check your blood pressure.

Will I Be Able to Breast-Feed While Taking My Blood Pressure Medication?

Most blood pressure medications that are given during pregnancy are considered safe to take while breastfeeding.[3] This includes medications such as methyldopa, calcium channel blockers, and labetalol. Because there is limited information about medications such as angiotensin-converting enzyme inhibitors, angiotensin II receptor blockers, and diuretic drugs such as hydrochlorothiazide, you will need to discuss their use during breastfeeding with your doctor.

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Disclosures

None.

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