Pregnant women with CVD need specialized care before, during and postpartum

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Women with cardiovascular conditions should be cared for during pregnancy by a cardio-obstetrics team or health care providers experienced in high-risk pregnancies to provide specialized maternity care for the mother and fetus, according to a new American Heart Association scientific statement, Cardiovascular Considerations in

Caring for Pregnant Patients, published today in the Association's flagship journal *Circulation*.

"Cardiovascular diseases are the leading cause of pregnancy-related death and are increasing, possibly because women are having babies at older ages and are more likely to have preexisting heart disease or heart disease risk factors," said Laxmi Mehta, M.D., writing group chair for the statement, and professor of medicine and director of preventive cardiology and women's cardiovascular health at The Ohio State University Wexner Medical Center in Columbus, Ohio.

Advanced maternal age—defined as age 35 or above—is associated with a higher risk of premature birth, chronic hypertension, preeclampsia (pregnancy-related high blood pressure) and/or gestational diabetes.

Women who are planning to become pregnant and who have preexisting cardiovascular conditions, such as chronic high blood pressure, a history of preeclampsia, heart muscle disease (cardiomyopathies), diabetes, high cholesterol, previous heart attacks, heart valve disorders, aortic dilatation and/or congenital heart disease should receive preconception counseling by a cardio-obstetrics team or health care providers experienced in high-risk pregnancies.

"For each of these cardiac conditions, pregnancy can impact treatment as there are limitations in medication management and invasive procedures given the potential fetal risks. For example, statin medications should not be used to lower cholesterol during pregnancy because these drugs could cause fetal abnormalities, according to the most recent cholesterol guidelines. Women should understand fetal risks and the risks to their own health posed by heart conditions before becoming pregnant," said Mehta. "If a woman is taking statin drugs, they should be discontinued one to two months before pregnancy is attempted."

Blood pressure changes are normal during pregnancy, however, blood pressure should be monitored closely. The most common cardiovascular events during pregnancy are related to high blood pressure disorders such as preeclampsia, defined as systolic blood pressure >140 mmHg or diastolic blood pressure > 90 mmHg in women after 20 weeks of gestation who had normal blood pressure before pregnancy. It can lead to serious complications including liver or kidney dysfunction, headaches, vision changes and/or fluid overload in the lungs and is also a leading factor for premature birth and cesarean delivery.

Women with a history of preeclampsia have a 71% greater risk of dying from heart disease or stroke over their lifetime compared to women who have never had preeclampsia, according to the statement. There are effective treatments to prevent or manage preeclampsia; however, treatment must be carefully individualized.

The statement reports that several studies have proposed that regular exercise during pregnancy may improve the way blood vessels function and may even prevent preeclampsia; additional studies need to be conducted to verify these findings.

"The role of a healthy lifestyle during pregnancy—whether or not a woman has a cardiovascular condition—cannot be emphasized enough. Healthy diet, moderate exercise including walking, smoking cessation and other healthy behaviors are important tools for a healthy pregnancy for both mother and child," said Mehta.

Pregnant women who have valvular heart disease, which increases their risk of having an ischemic stroke (caused by blood clots), and women who are at high risk for ischemic stroke for other reasons may benefit from treatment with vitamin K antagonists or other blood thinners after the first trimester to help reduce blood clotting.

Arrhythmias—heart rhythm disorders—have been increasing among pregnant women. Data gathered between 2000-2012 on 57 million pregnancies in the U.S. shows a rise in the number of pregnancy-related hospitalizations for arrhythmias. This finding may be associated with the increasing number of women becoming pregnant at advanced maternal ages. While most arrythmias are benign and do not require treatment, more complex arrhythmias can lead to a cardiac arrest or stroke and require a cardio-obstetrics team for optimal care during pregnancy. Management strategies may include anti-arrhythmic medication therapy and/or consideration of performing a surgical procedure—radiofrequency ablation—that can stabilize the heart rhythm during pregnancy.

In addition to carefully managing their pregnancy, women with cardiovascular disease should have an individualized delivery plan. Vaginal birth is recommended most often because there are additional risks associated with cesarean delivery. However, there are individual situations where a cesarean section (where a baby is delivered surgically through an incision) is appropriate.

Ideally, a woman with preexisting cardiovascular disease should be cared for by a multidisciplinary cardio-obstetrics team, including an obstetrician, cardiologist, anesthesiologist, maternal-fetal medicine specialist and nurses. Women who don't have access to a cardio-obstetrics team can receive optimal care from health care providers experienced with high-risk pregnancies. In either scenario, the health care providers develop a comprehensive, individualized strategy for managing a woman's cardiovascular health during pregnancy, delivery and the postpartum period of at least one year. A comprehensive care plan that meets the needs of each individual patient and involves shared decision-making are essential to improving cardiovascular outcomes during and after pregnancy.

Additionally, women who have had adverse pregnancy outcomes—such as preeclampsia and/or gestational diabetes—are at increased lifetime risk of cardiovascular disease and should be closely monitored for development of cardiac risk factors and conditions. Between 1987 and 2015, pregnancy-related deaths have risen from 7.2 to 17.2 deaths per 100,000 live births in the United States, according to the statement.

Before becoming pregnant, the authors say all women should discuss their nutrition, weight, exercise and cardiac risks with their doctor. "For women with existing heart disease, proper medical care and a healthy lifestyle are essential for these women to have a healthy pregnancy," said Mehta.

More information: Laxmi S. Mehta et al, Cardiovascular Considerations in Caring for Pregnant Patients: A Scientific Statement From the American Heart Association, *Circulation* (2020). DOI: 10.1161/CIR.0000000000000772

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