Heart Health Explained

Topic: Heart Failure and Pregnancy

A study published January 12, 2018 in the journal Circulation: Heart Failure found that pregnant women are at the highest risk of heart failure six weeks after giving birth.

It was reported April 11, 2018 by The Economic Times.

What’s the most important thing pregnant women or women trying to get pregnant should know about this study as it relates to their health?

Heart failure is a significant cause of death and complications during and following pregnancy.

What are common risk factors for heart failure in pregnant women? Are they different for women who are not pregnant?

Characteristics associated with increased risk of heart failure in this group of women include high blood pressure, kidney failure, diabetes, anemia, valvular heart disease, prior history of heart failure, and a history of depression.

The classic risk factors for heart failure in all women are high blood pressure, history of heart attack, and, to a lesser extent, diabetes and obesity.

What was this study seeking to determine? Has this been done before?

This study was seeking to describe the prevalence of heart failure as well as death in maternal outcomes. These were assessed in terms of where the women were in the course of pregnancy when presenting with heart failure — antepartum (before childbirth), peripartum (around the time of childbirth), or postpartum (after childbirth).

How were the data obtained for this study? How long were the subjects followed?

These data were obtained from a well-defined and comprehensive database with national and diverse representation. The study group included women from all phases of pregnancy. It was a registry review, so there was not necessarily longitudinal follow-up of an individual patient throughout the course of a pregnancy. The study period was 2001 to 2011.

Who were the subjects and how were they categorized?

The subjects were all pregnant women, characterized by standard demographics such as age, race, region, urban vs. nonurban, type of insurance, and household income.

What did the researchers measure, and how did they measure it? What was the primary outcome they looked for?

Measurements included prevalence of heart failure and outcomes such as death and cardiovascular complications. Demographic and behavioral characteristics were also described.
What were the results?
Over the study period the prevalence of heart failure remained constant among women during the antepartum period. However, there were significant increases during the peripartum and postpartum periods. The diagnosis of heart failure was most common during the postpartum period. The risk of death was significantly associated with a diagnosis of heart failure during the peripartum and postpartum periods.

Did the study reveal any differences concerning subgroups?
Yes. Women who were black, from urban neighborhoods, or in lower income groups were at higher risk for heart failure.

Did the researchers offer an explanation for the results?
The researchers suggest that the increasing prevalence of heart failure in pregnancy may be due to the prevalence of risk factors such as high blood pressure, prior history of heart failure, and diabetes. This implies an increasing prevalence of those risk factors over the course of a pregnancy, which we know is the case for high blood pressure and diabetes, both of which cause chronic disease of the heart muscle.

What conclusions, if any, can be made about cause and effect?
This retrospective study describes associations, not cause-and-effect relationships. It provides significant information to prompt additional study as well as stimulate trials of appropriate interventions to prevent adverse outcomes.

What were the strengths of this study’s design and execution?
This was a review of a well characterized national database using standard statistical methods. It appears to be a diverse and representative sample.

Were there any shortcomings in the study design and execution? What could have helped achieve more accurate or useful data?
Given the significance of the postpartum period to the overall prevalence of heart failure in pregnant women, an attempt to define the incidence of peripartum heart disease (most frequently diagnosed in the early postpartum period) would have been useful.

What, if anything, should people and health care professionals do differently in the face of these findings? What are the challenges to addressing this issue?
Women who are at high-risk must be identified early and supervised following discharge after delivery. In addition, it may be time to design clinical trials for specific interventions in high risk groups.