July 23, 2010

Public Health Institute Study Finds Link Between Early Pregnancy Complication and Heart Disease Death

OAKLAND, CA -- The earlier a pregnant woman develops the serious pregnancy complication known as preeclampsia, the higher her risk is of dying from cardiovascular disease later in her life, a prospective study conducted by Public Health Institute (PHI) researchers reports.

The study, published in the July issue of the journal Hypertension, is the first prospective research to identify this increased risk associated with preeclampsia early in a pregnancy, which the authors defined as occurring by the 34th week of pregnancy. Women followed for more than 30 years after their deliveries were 12 percent more likely to die of cardiovascular disease (CVD) if they had experienced early onset preeclampsia than if they had developed the condition closer to delivery, or late in pregnancy, which is more common.

“People have been wondering for years about this question and now this study has given us the clear answer – that preeclampsia prior to 34 weeks gestation has much more influence on cardiovascular death than when it occurs later,” said Gilman Grave, MD, an expert on maternal and child health research with the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) at the National Institute of Health. “This is a very important contribution to the literature of hypertension and cardiovascular disease.”

A number of previous studies have found an association between preeclampsia and CVD, but this study provides more conclusive evidence for the heightened risk when preeclampsia starts early in pregnancy.

“This tells us that there is likely considerable value to targeting women who had preeclampsia early in pregnancy for aggressive follow-up to prevent cardiovascular disease death,” said Piera Cirillo, one of three authors of the study, “Preeclampsia and Cardiovascular Disease Death: Prospective Evidence From the Child Health and Development Studies Cohort.”

The article draws on the unique research resource of the Child Health and Development Studies (CHDS). This continuing 50-year longitudinal study is regarded as a national treasure for research into the determinants of health and illness in mothers and their children. CHDS enrolled pregnant Kaiser Permanente Health Plan members from the East Bay from 1959 to 1967 and has followed many aspects of their health throughout their lifetimes.
The authors of the *Hypertension* article, Morgana Mongraw-Chaffin, Piera Cirillo and Barbara Cohn, completed this work as part of PHI’s Center for Research on Women’s and Children’s Health in Berkeley, which oversees the CHDS. Cohn is the center’s director.

Of the 15,000 pregnant women who participated in the CHDS, 481 developed preeclampsia and 266 of them died of cardiovascular disease at some time later, the authors found. Preeclampsia, a very dangerous complication, is one of the primary remaining causes for maternal mortality in the United States. It is marked by both the onset of hypertension and the spilling of protein in the urine, and commonly arises in the weeks just prior to delivery.

“This is a very exciting use of a longitudinal study that shows the benefit of following thousands of women for five decades to generate enough deaths to achieve statistical significance,” said Grave, who is acting director of the NICHD’s Center for Research for Mothers and Children. “The results are stunning, and show the immense value of following these people all this time.”

A longitudinal study that maintains records of women’s health history enhances the reliability of research findings derived from that data. For example, some women believe that because they had hypertension during pregnancy, they must have had preeclampsia, but hypertension by itself is not preeclampsia.

“Being able to take a prospective look is important because the women didn’t have to recall whether or not they had preeclampsia over 30 years ago,” Cirillo said. “We know from our records that they did and followed them forward to see what happened. This reduced classification mistakes that would result from faulty memories and strengthens the findings.”

In addition, this study uses the American College of Obstetricians and Gynecologists’ definition for preeclampsia, which makes the findings relevant and useful for currently practicing clinicians, Cirillo said.

The article is available at [http://hyper.ahajournals.org/cgi/content/full/56/1/166](http://hyper.ahajournals.org/cgi/content/full/56/1/166).

**About the Public Health Institute**

PHI, an independent nonprofit organization based in Oakland, California, is dedicated to promoting health, well-being and quality of life for people throughout California, across the nation and around the world. PHI's primary methods for achieving these goals include: sharing evidence developed through quality research and evaluation; providing training and technical assistance; and promoting successful prevention strategies to policymakers, communities and individuals.

**For more information contact:**

Jessica Tomlinson  
Special Advisor, Planning and Communications  
Public Health Institute