

Study shows extreme form of pregnancy-related morning sickness could be genetic

Pregnant women whose sisters had condition are 17 times more likely to have it

By **Enrique Rivero** November 04, 2010

Approximately 60,000 pregnant women are hospitalized each year due to hyperemesis gravidarum (HG), an extreme form of nausea and vomiting that endangers their lives and often forces them to reluctantly terminate their pregnancies.

And for women with sisters, mothers and grandmothers on either side of the family who have experienced extreme morning sickness during pregnancy, the risk of HG may be heightened, according to a new study led by researchers from UCLA and the University of Southern California.

Researchers traced both the maternal and paternal family histories of women with HG and found not only that the condition could be genetic but that women with sisters who had HG could have a more than 17-fold risk of experiencing the debilitating condition too.

The findings are published online in the American Journal of Obstetrics and Gynecology.

"Pregnant women with a family history of extreme nausea in pregnancy should be aware that they may have it too, and health care providers should take a family history of nausea in pregnancy at the first visit with an obstetrician," said lead author Marlena Fejzo, an assistant professor of hematology–oncology at the David Geffen School of Medicine at UCLA and an assistant professor of maternal and fetal medicine at Keck School of Medicine of USC. "The high familial prevalence strongly suggests a genetic component to this condition."

Researchers surveyed about 650 participants for the joint study on the genetics and epidemiology of HG. Women who had been diagnosed with HG and treated with IV fluids were asked to recruit, as a control, a friend who had at least two pregnancies lasting more than 27 weeks and who had not had HG. The researchers then compared the family histories of extreme nausea in the women with HG with those of the controls. Of the 650 participants, 207 women with HG and 110 controls had at least one sister who had been pregnant.

The researchers found that women with HG were more than five times as likely as the controls to report having a sister with severe morning sickness or HG. When including sisters who had experienced HG — and excluding sisters with just severe morning sickness — study participants with HG had 17.3 times the odds of also having the condition. In addition, 33 percent of the women with HG reported having an affected mother, compared with only 8 percent of the controls.

Among the women who had information regarding their grandmothers' pregnancies, 18 percent of those with HG had a maternal grandmother with HG, and 23 percent had a paternal grandmother affected by the condition, suggesting that it can be passed on through the women's fathers.

The authors noted that their findings could be limited by factors such as having used the Internet to survey the participants and the fact that the family histories were based on self-reports, which can lead to misclassification.

"Because the incidence of hyperemesis gravidarum is most commonly reported to be 0.5 percent in the population, and the sisters of cases have as much as an 18-fold increased familial risk for HG compared to controls, this study provides strong evidence for a genetic component to extreme nausea and vomiting in pregnancy," the authors conclude.

Previous studies have used hospitalization, clinical and other records to examine the prevalence of this mysterious condition among various population sets. One looked at pregnancy nausea medication in identical twins, compared with fraternal twins, and another focused on mother-to-daughter recurrence. Overall, the prior studies also suggested that genetics are involved.

This study was funded by the Hyperemesis Education and Research Foundation (www.helper.org), the Intramural Research Program of the National Institute of Child Health and Human Development, the National Institutes of Health, and the U.S. Department of Health and Human Services.

Other researchers on this study were Yafeng Zhang and Rita M. Cantor of UCLA; Thomas M. Goodwin and Patrick Mullin of USC; Kimber MacGibbon of the Hyperemesis Education and Research Foundation; and Roberto Romero of the National Institute of Child Health and Human Development.

For more information about participating in the genetic and epidemiology of hyperemesis gravidarum study, contact Dr. Fejzo at nvpstudy@usc.edu.

The Keck School of Medicine of USC, located on USC's Health Sciences Campus, is home to the doctors of USC — nationally recognized physicians practicing in a multitude of clinical specialties. They practice in private clinics on campus and at the recently acquired private hospitals, USC University Hospital and USC Norris Cancer Hospital. They also work at the LAC+USC Medical Center (one of the largest teaching hospitals in the United States), Children's Hospital Los Angeles and elsewhere around the greater Los Angeles area. The Keck School of Medicine also is home to several research institutes. Established in 1885, the Keck School is the oldest medical school in Southern California.

The David Geffen School of Medicine at UCLA ranks among the nation's elite medical schools, producing doctors and researchers whose contributions have led to major breakthroughs in health care. With more than 2,000 full-time faculty members, nearly 1,300 residents, more than 750 medical students and almost 400 Ph.D. candidates, the medical school is ranked seventh in the country in research funding from the National Institutes of Health and third in the United States in research dollars from all sources.

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