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Is caffeine use during pregnancy really unsafe?

Courtney D. Lynch, PhD, MPH,

Division of Epidemiology, The Ohio State University College of Public Health, B218 Starling-Loving Hall, 320 W. 10th Ave. Columbus, OH 43210, clynch@cph.osu.edu

Mark A. Klebanoff, MD, MPH, and

Epidemiology Branch, Division of Epidemiology, Statistics and Prevention Research, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, Rockville, MD

Germaine M. B. Louis, PhD, MS

Epidemiology Branch, Division of Epidemiology, Statistics and Prevention Research, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, Rockville, MD

To The Editors

In the March 2008 issue of the *Journal*, the article by Weng et al suggested that "...it may be prudent to stop or reduce caffeine intake during pregnancy."¹ Although the authors state that their work overcomes the deficiencies of many previous studies looking at the impact of caffeine consumption on the risk of miscarriage, we respectfully disagree. In fact, their study suffers from many of the same problems that have plagued other work in this area.

Although the authors repeatedly refer to their study as a prospective cohort study, reporting of caffeine consumption from LMP to interview was retrospective. Further, 59% of the women who miscarried were interviewed after their miscarriage, raising concerns of recall bias. Although the authors state in the *Discussion* that they performed a stratified analysis looking at the results among women who miscarried before the interview vs after and there were no differences, these data are quite important and should have been reported among the main results of the study.

There is some confusion with regard to the selection of "confounders" included in the final models. Although variables such as Jacuzzi use and magnetic field exposure were available in the overall dataset, their relation to caffeine consumption and therefore status as true confounders in this analysis is unclear. We are particularly concerned about the inclusion of history of previous miscarriage as a confounder in the model; something that should have been addressed using more sophisticated techniques such as hierarchical modeling.²

We also question why the authors stratified by a change in caffeine intake during pregnancy and controlled for nausea and vomiting in the final adjusted models. There is a substantial body of literature that suggests that the presence of nausea and vomiting is indicative of a healthy pregnancy³; therefore, controlling for this factor may in effect be controlling for the very outcome being studied, rendering such control uninterpretable.

It is worth noting that Savitz et al⁴ recently published an article on this same topic. They found little evidence of an association between caffeine consumption before or early in

pregnancy and the risk of miscarriage. Their study also involved retrospective reporting, with some of the interviews occurring after the miscarriage. Indeed, in stratifying the results by time of interview, they found evidence of positive associations among those women whose interview occurred after the loss, while there were no associations among those who were interviewed before the loss occurred.

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