Medical Xpress

Glyburide associated with more risk of adverse events than insulin in newborns

March 30 2015

The medication glyburide, which has been increasingly used to treat gestational diabetes in pregnant women, was associated with higher risk for newborns to be admitted to a neonatal intensive care unit, have respiratory distress, hypoglycemia (low blood glucose), birth injury and be large for gestational age compared with infants born to women treated with insulin, according to an article published online by *JAMA Pediatrics*.

The prevalence of gestational diabetes mellitus (GDM) in the United States has more than doubled during the last 20 years. Given the widespread and rapid use of glyburide in the last decade more evaluation of the comparative safety and effectiveness of the drug is needed. Previous literature on the association between treatment with glyburide and adverse neonatal outcomes is limited, according to background in the study.

Wendy Camelo Castillo, Ph.D., of the University of Maryland, Baltimore, and Michele Jonsson Funk, Ph.D., of the University of North Carolina at Chapel Hill, and coauthors estimated the risk of adverse maternal and neonatal outcomes in women with GDM treated with glyburide vs. insulin using data from a nationwide employer-based insurance claims database from 2000 through 2011. The authors excluded women with type 1 or 2 diabetes as well as those younger than 15 and older than 45.

Among 110,879 women with GDM, 9,173 women (8.3 percent) were

treated with glyburide (4,982 women) or insulin (4,191 women). Use of glyburide rose and the proportion of the group treated with glyburide increased from 8.5 percent in 2000 to 64.4 percent in 2011.

The authors found that among newborns whose mothers were treated with glyburide there was a 41 percent higher risk of neonatal intensive care unit admission, 63 percent higher risk of respiratory distress, 40 percent higher risk of hypoglycemia (low blood glucose), 35 percent higher risk of birth injury and 43 percent higher risk of being large for gestational age compared with newborns of women treated with insulin.

The difference in risk per 100 women associated with glyburide compared with insulin was 2.97 percent for neonatal intensive care unit admission, 1.41 percent for large for gestational age and 1.1 percent for respiratory distress.

Women treated with glyburide, as compared with insulin, were not at increased risk for obstetric trauma, preterm birth or jaundice. The risk of cesarean delivery was 3 percent lower in the glyburide group, according to the results.

"Given the widespread use of glyburide, further investigation of these differences in pregnancy outcomes is a public health priority," the study concludes.

In a related editorial, Richard I.G. Holt, Ph.D., F.R.C.P., of the University of Southampton, England, writes: "The major limitation with the current evidence has been the lack of power to demonstrate differences between insulin and glyburide, and this is particularly relevant for rare adverse events. The article by Camelo Castillo et al in this issue of *JAMA Pediatrics* is therefore a welcome addition to the debate."

"The main limitation of this and other observational analyses is that the results may be affected by important confounding factors. While the authors have adjusted for important medical conditions, they have not adjusted for all relevant sociodemographic features," Holt continues.

"This latest study heightens residual concerns about the use of glyburide to treat GDM that need to be resolved before this drug should be recommended for continued use in pregnancy. As the authors rightly conclude, the "higher risk of neonatal outcomes associated with glyburide-treated women demands further attention" and more attention is needed to determine which women are most likely to benefit from glyburide or perhaps more importantly not be harmed. It is time for a pause for thought," Holt concludes.

More information: *JAMA Pediatr.* Published online March 30, 2015. DOI: 10.1001/jamapediatrics.2015.74
JAMA Pediatr. Published online March 30, 2015. DOI: 10.1001/jamapediatrics.2015.144

Provided by The JAMA Network Journals