

Risk of Severe Maternal Morbidity among Pregnancies complicated by Pregestational Diabetes

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Introduction: Severe Maternal Morbidity (SMM) is an indicator of pregnancies at risk of mortality and is an important indicator of the health of a population. High-risk pregnancies with pregestational diabetes (PGDM) are also at risk of adverse pregnancy outcomes, however there is a paucity of data on its relationship with severe maternal complications, SMM.

Methods: Retrospective population-based cohort study of all US live births using vital statistics birth certificate records, 2014-2019. Demographic, medical, and pregnancy factors were compared between mothers with PGDM and those without. The primary outcome was composite SMM, defined as maternal ICU admission, eclampsia, blood transfusion, unplanned hysterectomy, or ruptured uterus. Multivariate logistic regression estimated the relative influence of risk factors associated with SMM in pregnancies complicated by PGDM.

Results: Of 23,839,716 live births in the US during the study period, 439,895 (1.8%) had pregnancies complicated by PGDM. The overall rate of the primary outcome in the population, composite SMM was 0.71% in pregnancies with no diabetes, and significantly higher (2.2%) among those with PGDM, adjRR 2.13 (95%CI 2.07, 2.20). PGDM was also associated with significantly increased risk of all individual measures of SMM, even after adjustment for the confounding influences of advanced maternal age, Non-Hispanic Black race, chronic hypertension, and obesity, see figure.

Conclusions: Pregestational diabetes is associated with over 2-fold increased risk for severe maternal morbidity even after accounting for the influence of co-existing risk factors. These findings highlight the importance of individualizing care among pregnancies with PGDM and consider delivery at higher level maternity centers with capacity to provide care to the most complex pregnancies, especially when co-existing risk factors are present.

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