Pilot Study: Placental Weight Ratio in Diabetic Women with Preeclampsia
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Pilot Study: Placental Weight Ratio in Diabetic Women with Preeclampsia

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Abstract

Birth weight, a simple measure of birth outcome, has a key role in assessing infant health. A primary determinant of birth weight is a well grown, efficient placenta. Placental weight ratio (PWR) reflects the growth of the baby and placenta and is calculated by dividing the placental weight by fetal weight and is a proven useful health indicator. Preeclampsia (PE) is defined as new-onset hypertension and proteinuria during pregnancy and it is a major cause of maternal and fetal death worldwide. PE is associated with large placentae and small-for-gestational-age (SGA) infants; the PWR is expected to be increased in this condition. Another condition known to increase risk in pregnancy is type 2 diabetes mellitus (T2DM). T2DM is associated with large placentae and large-for-gestational-age (LGA) infants; the PWR is expected to be decreased. There is a paucity of information regarding the placental weight ratio when both PE and T2DM are present, particularly in American Indians (AI) and Hispanics, two groups known to be at increased risk for T2DM.

We hypothesize that AI and Hispanic mothers with PE and dysglycemia (T2DM, gestational diabetes), will have larger placentae and infants and PWR will be decreased.

We report data from samples collected in an ongoing study of the effects of dysglycemia on PE. Our findings demonstrate no significant differences in PWR between dysglycemic pregnancies and dysglycemic pregnancies with accompanying PE ($p=0.29$). This observation suggests that using the PWR to assess infant health outcome provides no additional benefit when applied to dysglycemic pregnancies with PE.

Keywords

Preeclampsia; Type 2 Diabetes Mellitus; Placental Weight Ratio

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ABSTRACT

Birth weight, a simple measure of birth outcome, has a key role in assessing infant health. A primary determinant of birth weight is a well grown, efficient placenta. Placental weight ratio (PWR) reflects the growth of the baby and placenta and is calculated by dividing the placental weight by fetal weight and is a proven useful health indicator. Preeclampsia (PE) is defined as new-onset hypertension and proteinuria during pregnancy and it is a major cause of maternal and fetal death worldwide. PE is associated with large placentae and small-for-gestational-age (SGA) infants; the PWR is expected to be increased in this condition. Another condition known to increase risk in pregnancy is type 2 diabetes mellitus (T2DM). T2DM is associated with large placentae and large-for-gestational-age (LGA) infants; the PWR is expected to be decreased. There is a paucity of information regarding the placental weight ratio when both PE and T2DM are present, particularly in American Indians (AI) and Hispanics, two groups known to be at increased risk for T2DM.

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