

Perinatal and maternal outcomes in singleton preterm births of african american versus caucasian women with hypertensive disorders

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Abstract

PURPOSE: To determine if African American Women with hypertensive disorders have increased risk of preterm birth with poorer perinatal and/or maternal outcomes compared to Caucasian women with hypertensive disorders.

METHODS: This is a retrospective cohort chart review study conducted from January 2017 - June 2021. Women who delivered preterm singleton pregnancies complicated by pregnancy related hypertensive disorders were selected. Maternal inclusion criteria consisted of African American vs. Caucasian race and singleton pregnancy. Maternal and neonatal charts were reviewed for the antepartum, delivery, and postpartum courses, as well as neonatal outcomes. The neonatal outcomes included: NICU admission, birth weight, APGARS, and cord pH. Maternal outcomes that were studied included: number of antepartum admissions, length of inpatient stay, number of intravenous and or oral antihypertensives administered, post-delivery hypertensive complications, delivery modality, and readmission rates. Women who identified other than African American and Caucasian and or had multiple gestations were excluded. Neonates with genetic and or anatomical disorders and fetal growth restriction secondary to infectious causes were excluded.

RESULTS: One hundred and seventy-five patients met inclusion criteria including 90 African American women and 85 Caucasian women. There was no difference between the groups in maternal age, gestational age at delivery, or BMI. There was also no difference between the type of hypertensive disorders, additional comorbidities, or medical complications due to hypertensive disorders. Outcomes for both racial populations were analyzed. The post hoc analysis revealed greater than 90 percent power. Therefore, the few differences detected between the two groups were deemed significant. Both groups had similar number of admissions to antepartum and length of stay in the postpartum unit. African American women were more likely to require multiple antihypertensives to control their blood pressure during their delivery admission compared to Caucasian women ($p=0.005$). Likewise, African American patients were more likely to receive magnesium sulfate for seizure prophylaxis in the postpartum period ($p=0.0001$). There was no difference in hospital readmissions.

Caucasian women with hypertensive disorders were more likely to be delivered by cesarean section ($p=0.011$) with no difference in umbilical cord pH or admissions to the NICU. There was no difference in neonatal birthweight. African American neonates were more likely to have a 5-minute APGAR less than 5 ($p=0.047$), though there was no difference in low 1-minute APGAR scores.

CONCLUSION: In this study, African American women were more likely to need more treatment for their hypertensive disorder compared to Caucasian women. However, this difference did not increase overall neonatal course and outcomes.

Furthermore, while our population delivered at near term, more information is needed to review the effect of maternal hypertensive disorders on extremely preterm delivery courses. There was no statistical significance between maternal/neonatal outcomes of African American and Caucasian women with co-morbidities and different hypertensive disorders. In spite of this, there is some literature that reports African American women with hypertensive disorders, specifically chronic hypertension, are more likely to develop worse maternal and or perinatal outcomes. The absence of statistically significant results in this retrospective analysis may lead one to presume that the obstetrical care delivered at this medical institution does not vary amongst this population. This remains inconclusive given the lack of consistent reporting of race. During analysis, approximately 41% of subjects were excluded because of undocumented race, despite meeting all other initial criteria. To overcome this barrier and improve statistical significance, a larger cohort study could be conducted across multiple hospital systems in the United States to draw more accurate conclusions. This would better serve in bridging the gap in obstetrical racial disparity that is well known in the American population, in order to improve maternal and neonatal outcomes.