Selected papers: 82nd Annual Meeting
CENTRAL ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS
Next annual meeting Las Vegas, Nevada, October 26–29, 2016

Racial disparity in previable birth

Emily A. DeFranco, DO, MS; Eric S. Hall, PhD; Louis J. Muglia, MD, PhD

Background

Extremely preterm birth of a live newborn before the limit of viability is rare but contributes uniformly to the infant mortality rate because essentially all cases result in neonatal death.

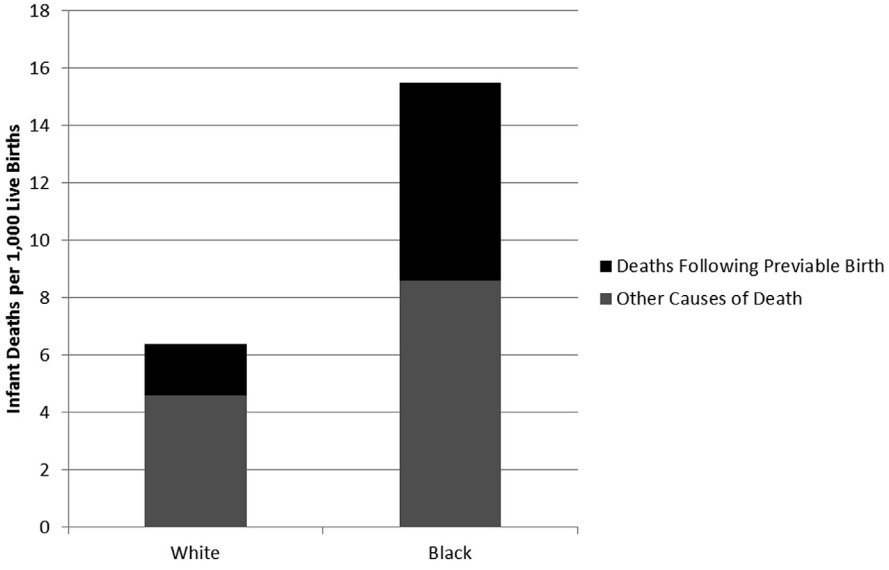
Objective

The objective of the study was to quantify racial differences in previable birth and their contribution to infant mortality and to estimate the relative influence of factors associated with live birth occurring before the threshold of viability.

Study Design

This was a population-based retrospective cohort of all live births in Ohio over a 7 year period, 2006–2012. Demographic, pregnancy, and delivery characteristics of previable live births at 16 0/7 to 22 6/7 weeks of gestation were compared with a referent group of live births at 37 0/7 to 42 6/7 weeks. Rates of birth at each week of gestation were compared between black and white mothers, and relative risk ratios were calculated. Logistic regression estimated the relative risk of factors associated with previable birth, with adjustment for concomitant risk factors.

FIGURE
Contribution of previable preterm birth to infant mortality



Contribution of previable preterm birth to infant mortality in Ohio in black and white mothers (2006–2012).

DeFranco et al. Racial disparity of previable birth. Am J Obstet Gynecol 2016.

Results

Of 1,034,552 live births in Ohio during the study period, 2607 (0.25% of all live births) occurred during the previable period of 16–22 weeks. There is a significant racial disparity in the rate and relative risk of previable birth, with a 3- to 6-fold relative risk increase in black mothers at each week of previable gestational age. The incidence of previable birth for white mothers was 1.8 per 1000 and for black mothers, 6.9 per 1000. Factors most strongly associated with previable birth, presented as adjusted relative risk ratio (95% confidence interval [CI]), were maternal characteristics of black race adjusted relative risk 2.9 (95% CI, 2.6–3.2), age ≥ 35 years 1.3 (95% CI, 1.1–1.6), and unmarried 2.1 (95% CI, 1.8–2.3); fetal characteristics including congenital anomaly, 5.4 (95% CI, 3.4–8.1) and genetic disorder, 5.1 (95% CI, 2.5–10.1); and pregnancy characteristics including prior preterm birth 4.4 (95% CI, 3.7–5.2) and multifetal gestation, twin, 16.9 (95% CI, 14.4–19.8) or triplet, 65.4 (95% CI, 32.9–130.2). The majority, 80%, of previable births (16–22 weeks) were spontaneous in nature, compared with 73% in early preterm births (23–33 weeks), 72%

Cite this article as: DeFranco EA, Hall ES, Muglia LJ. Racial disparity in previable birth. Am J Obstet Gynecol 2016;214:394.e1-7.

0002-9378/free

http://dx.doi.org/10.1016/j.ajog.2015.12.034

ajog.org Read this article in full at **ajog.org**

in late preterm births (34–36 weeks), and 65% of term births (37–42 weeks) ($P < .001$). Previable births constituted approximately 28% of total infant mortalities in white newborns and 45% of infant mortalities in black infants in Ohio during the study period (Figure).

Conclusion

There is a significant racial disparity in previable preterm births, with black mothers incurring a 3- to 6-fold increased relative risk compared with white mothers, most of which are spontaneous in nature. This may explain much of the racial disparity in infant mortality because all live-born previable preterm births result in death. Focused efforts on the prevention of spontaneous previable preterm birth may help to reduce the racial disparity in infant mortality. ■

Author and article information

From the Center for Prevention of Preterm Birth, Perinatal Institute, Cincinnati Children's Hospital Medical Center (Drs DeFranco, Hall, and Muglia), and Division of Maternal-Fetal Medicine, Department of Obstetrics and Gynecology, University of Cincinnati College of Medicine (Drs DeFranco and Muglia), Cincinnati, OH.

This study was supported by the Perinatal Institute, Cincinnati Children's Hospital Medical Center (Cincinnati, OH), and March of Dimes Grant 22-FY14-470.

The authors report no conflict of interest.

This study was an oral presentation at the 82nd annual meeting of the Central Association of Obstetricians and Gynecologists, Oct. 21–24, 2015, Charleston, SC.

The impact of fetal growth restriction on latency in the setting of expectant management of preeclampsia

David McKinney, MD; Heather Boyd, MD; Amanda Langager, MD; Michael Oswald, BS; Abbey Pfister, BS; Carri R. Warshak, MD

Background

Fetal growth restriction is a common complication of preeclampsia. Expectant management for qualifying patients has been found to have acceptable maternal safety while improving neonatal outcomes. Whether fetal growth restriction influences the duration of latency during expectant management of preeclampsia is unknown.

Objective

The objective of the study was to determine whether fetal growth restriction is associated with a reduced interval to delivery in women with preeclampsia being expectantly managed prior to 34 weeks.

Study Design

We performed a retrospective cohort of singleton, live-born, non-anomalous deliveries at the University of Cincinnati Medical Center between 2008 and 2013. Patients were included in our analysis if they were diagnosed with preeclampsia prior to 34 completed weeks and if the initial management plan was to pursue expectant management beyond administration of steroids for fetal lung maturity. Two study groups were determined based on the presence or absence of fetal growth restriction. Patients were delivered when they developed persistent neurological symptoms, severe hypertension refractory to medical therapy, renal insufficiency, nonreassuring fetal status, pulmonary edema, or hemolysis elevated liver low platelet syndrome or when they reached 37 weeks if they remained stable without any other indication for delivery. Our primary outcome was the interval from diagnosis of preeclampsia to delivery, measured in days. Secondary outcomes included indications for delivery, rates of induction and cesarean delivery, development of severe morbidities of preeclampsia, and select neonatal outcomes. We performed a multivariate logistic regression analysis comparing those with fetal growth restriction with those with normally grown fetuses to determine whether there is an association between fetal growth restriction and a shortened interval to delivery, neonatal intensive care unit admission, prolonged neonatal stay, and neonatal mortality.

Results

A total of 851 patients met the criteria for preeclampsia, of which 199 met inclusion criteria, 139 (69%) with normal growth, and 60 (31%) with fetal growth restriction. Interval to delivery was significantly shorter in women with fetal growth restriction, median (interquartile range)

Cite this article as: McKinney D, Boyd H, Langager A, et al. The impact of fetal growth restriction on latency in the setting of expectant management of preeclampsia. Am J Obstet Gynecol 2016;214:395.e1-7.

0002-9378/free

http://dx.doi.org/10.1016/j.ajog.2015.12.050

ajog.org Read this article in full at **ajog.org**

Supporting material appears on the next page