

Poster #16

Research Study

Title: “Association Between Maternal Race/Ethnicity and Incidence of Respiratory Distress Syndrome in Preterm Infants Born to Mothers who Received Prophylactic Antenatal Corticosteroids in the United States: Secondary Analysis of the CDC NCHS 2019 Natality Database”

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Introduction and Objective. Neonatal Respiratory Distress Syndrome (RDS) is a serious morbidity facing premature infants, leading to respiratory failure. The use of antenatal corticosteroids (ACS) in mothers at risk of preterm birth decreases incidence and severity of RDS. Haas et al. (2010) found that non-Hispanic black neonates had significantly lower rates of RDS than non-Hispanic Caucasian infants, yet a similar rate of RDS-related mortality when all received ACS. Our study aimed to explore whether maternal race/ethnicity is associated with neonatal RDS as healthcare availability and access has advanced.

Methods. Our historical cohort study was conducted via secondary data analysis of the CDC NCHS 2019 Natality Database. Inclusion criteria included being singleton neonates born between 28-36 weeks gestation. Exclusion criteria included genetic abnormalities. Control variables included sociodemographic factors. Incidence of RDS was compared with maternal race and ethnicity. The exposure was defined as reported maternal race/ethnicity and categorized; the outcome was incidence of neonatal RDS. Data was analyzed using both unadjusted and adjusted (binary logistic regression) OR and 95% CI.

Results. Our final population was 73,242 births. The incidence of RDS among preterm infants whose mothers received ACS was highest among non-Hispanic whites (6.1%), followed by non-Hispanics blacks (5.2%), Hispanics (4.6%) and Asians and other women of color (4.4%) ($p < 0.001$). Even prior to adjustment, as compared to infants born to white non-Hispanic mothers, the odds for developing RDS were lower for all other considered race/ethnicity groups: non-Hispanic black women, 15% lower (OR 0.85 (0.78-0.92)); Hispanic women, 28% lower (OR 0.73 (0.67-0.80)) and women of other color 30% lower (OR 0.71 (0.63-0.80))

Conclusions-Implications. Our findings suggest that, with prophylaxis with ACS, maternal race and ethnicity is associated with the incidence of neonatal RDS among preterm infants. Currently, there are no studies that contradict the differences in incidence according to race that both our study and Haas found. Future studies can look into differences in severity of RDS and what effects the differences in prenatal care seen among each maternal race group.