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“SGA neonatal outcomes in anemic gravid patients: does treatment in pregnancy improve neonatal birthweight?”

Objective: Small for gestational age (SGA) neonatal outcomes are associated with increased risks of stillbirth, preterm delivery, neonatal morbidity/mortality, and cognitive delay in childhood. Preventable etiologies of SGA, such as anemia, can be addressed with adequate prenatal care and identifying disparities in social determinants of health. In the first part of our study, we aim (1) to define the prevalence of anemia in all patients delivering at our community hospital (2) to understand the likelihood of SGA outcomes in anemic patients and (3) to determine if treatment of anemia during pregnancy improves the rate of appropriate neonatal birthweight.

Methods: A retrospective cohort study was initiated for deliveries at Touro Infirmary from 2018-2021. Hemoglobin and hematocrit values were recorded upon intake into prenatal care and on admission for delivery. Patients were classified as anemic if they had a hemoglobin of ≤ 11 g/dL. SGA was defined by neonatal birth weight $< 10\%$ for gestational age. Social determinants of health were defined by age, race, insurance status, parity, and late prenatal care. Descriptive statistical analyses were performed thus far on this initial cohort of patients selected for our pilot study.

Results: Of the 393 charts randomly selected from 2018-2021, 365 patients had hemoglobin (Hgb) levels available for both prenatal care in the first trimester and at the time of delivery. Overall, the average hemoglobin upon intake into prenatal care versus time of delivery was stable (11.9 vs 11.2g/dL, respectively). Seventeen percent of patients (n=63) within this cohort did have anemia and were more likely to have SGA neonatal outcomes as compared to patients without anemia (9.5% versus 6.6%). Interestingly, those patients with treated anemia (initially anemic at the onset of pregnancy but with improvement of Hgb > 1.5 g/dL by the time of delivery) had SGA outcomes similar to those patients without anemia at the beginning of pregnancy (6.7% vs 6.6%). Lastly, those patients with inadequate treatment of their anemia were more likely to be older, have higher parity and government issued insurance as compared to those with treated anemia [Age: 34yo vs. 32yo; Parity: 4.6 vs 3.4, Government insurance: 86.6% vs 75.9%].

Conclusion: Our initial assessment of SGA outcomes in anemic patients delivering at Touro Infirmary revealed that adequate treatment could potentially improve neonatal birthweights. Additional steps will be taken to gather data from all deliveries within this time frame and to identify barriers to receiving appropriate treatment of anemia in pregnancy.