1-2023

Racial & ethnic disparities in prenatal care & pregnancy outcomes - an ongoing challenge

Mariam Ayyash

Megan McNitt

Madison E. Miller

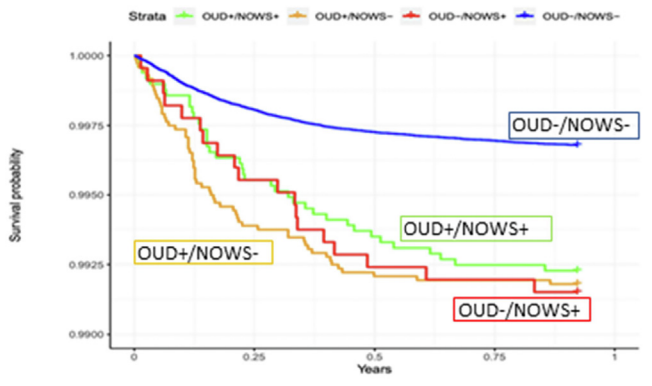
Monique Swain

STUDY DESIGN: We conducted a retrospective cohort study of mother-infant dyads enrolled in Tennessee Medicaid having live births between 2007-2018. We defined baseline characteristics and infant mortality using administrative claims linked to birth and death certificates. The primary exposure was NOWS diagnosis after birth or maternal OUD diagnosis, categorized as maternal OUD with NOWS (OUD+/NOWS+); maternal OUD without NOWS (OUD+/NOWS-); no documented maternal OUD with NOWS (OUD-/NOWS+); and no maternal OUD or NOWS (OUD-/NOWS-). We defined NOWS using diagnosis codes and maternal OUD using both diagnosis codes or maintenance medication prescription fills. The outcome was post-neonatal infant death between days 29-365 after birth. We used Cox proportional hazards models adjusting for baseline maternal and infant characteristics to estimate adjusted hazard ratios (aHR) and 95% confidence intervals (CIs).

RESULTS: Of 390,075 infants, 4,922 (1.26%) met our definition for OUD+/NOWS+; 7,196 (1.84%) for OUD+/NOWS-; and 2,239 (0.57%) for OUD-/NOWS+. Survival was significantly decreased for all exposure groups, relative to the unexposed (OUD-/NOWS-) (Figure 1). After adjusting for relevant confounders, the risk of post-neonatal death was elevated for all exposure groups compared to OUD-/NOWS-: OUD+/NOWS+ aHR: 1.54 (CI: 1.07, 2.21), OUD+/NOWS- aHR: 1.62 (CI: 1.21, 2.17), OUD-/NOWS+ aHR: 1.64 (CI: 1.02, 2.65).

CONCLUSION: NOWS diagnosis after birth or maternal history of OUD is associated with increased risk for post-neonatal mortality. Future work is necessary to understand how improving the diagnosis, treatment, and support for pregnant women with OUD can reduce the risk of infant mortality.

Figure 1. Kaplan Meier survival curve for infant death



1081 A cross-sectional survey of prenatal care providers' knowledge, barriers, and confidence in prenatal genetic counseling

Margaret Thorsen[1], Rose Mahoney[1], Franklin Enemuo[1], Huda B. Al-Kouatly[2], Melissa L. Russo[1]

[1]Alpert Medical School of Brown University and Women & Infants Hospital of Rhode Island, Providence, RI, [2]Thomas Jefferson University, Philadelphia, PA

OBJECTIVE: With a national shortage of genetic counselors, prenatal care providers deliver the majority of patient counseling on genetic testing options in pregnancy. Standardized counseling is a challenge for providers with limited time, deficient knowledge regarding testing options, and lack of patient educational tools considerate of low health literacy. Previous literature on providers' barriers to giving prenatal genetic counseling is limited and potentially outdated, as it has not accounted for rapid advancements in technology.

STUDY DESIGN: An anonymous cross-sectional REDCap survey was emailed to prenatal care providers at an academic institution regarding: knowledge of prenatal genetic aneuploidy testing, confidence in counseling skills, and barriers to adequate counseling. Thematic analysis of qualitative responses to "What would be your hope/wishes for an educational tool for patients surrounding prenatal genetic testing?" was performed.

RESULTS: 35 prenatal providers completed the survey (response rate 59%). Respondents were advanced practice providers (9%), general Ob/Gyn attendings (20%), Maternal Fetal Medicine specialists (23%), and Ob/Gyn residents (49%). Median reported minutes spent counseling was 4.5 min with 80% answering they felt they spent too little time on genetic counseling. 63% of respondents could not correctly identify ACOG recommendations, yet 48% expressed "feeling confident" or "extremely confident" in their answers. The barriers to counseling included time constraints, health literacy, lack of a visual aid, and language barriers (Table 1). Notable gaps in provider knowledge included cost of testing and privacy of genetic results. Qualitative responses highlighted a desire for a visual aid in multiple languages (Table 2).

CONCLUSION: There are knowledge gaps and barriers to providing prenatal genetic counseling among prenatal care providers. Future directions include development and assessment of prenatal genetics educational tools to supplement counseling.

Table 1: Barriers to Prenatal Genetic Counseling as Identified by Prenatal Care Providers

Cited barriers to counseling	N of respondents endorsing barrier (%)
Time constraints	32 (91%)
Health literacy	31 (88.6%)
Lack of a visual aid	24 (68.6%)
Language barriers	23 (65.7%)

Table 2: Qualitative Responses to Prenatal Care Provider Needs Assessment
"What would be your hope/wishes for an educational tool for patients surrounding prenatal genetic testing?"

Theme	Representative Participant Responses
Accessible Care for Lower Literacy and Different Languages	"understandable to patients with limited health literacy…to show their family members or review again at a later time" "accessible to patients of all literacy levels and languages"
Visual and Audio Educational Tool	"a short video that pt. could download on phone would be so helpful" "something that encompasses multiple learning methods (visual and audio)" "short video, available in multiple languages"

1082 Racial & ethnic disparities in prenatal care & pregnancy outcomes - an ongoing challenge

Mariam Ayyash[1], Megan McNitt[1], Madison E. Miller[2], Monique Swain[1]

[1]Henry Ford Health System, Detroit, MI, [2]Henry Ford Health, Detroit, MI

OBJECTIVE: The aim of this study is to compare adequacy of prenatal care among various races and ethnicities in the state of Michigan and associated pregnancy and birth outcomes.

STUDY DESIGN: A population-based retrospective cohort study was performed using the state of Michigan's birth registry data for the years 2019-2020. Inclusion was made for all women who delivered

after 20 weeks of gestation. Pregnancy and birth outcomes were compared by race and ethnicity.

RESULTS: A total of 211,801 births took place in Michigan between 2019 and 2020. The cohort included 143,400 (67.7%) who identified as non-hispanic White, 39,139 (18.5%) who identified as non-hispanic Black, 14,704 (6.9%) who identified as hispanic, and 14,557 (6.9%) who identified as others. Adequate prenatal care received, defined by the Kessner Index, was highest among non-hispanic White women at 71.9% (n=103,127), followed by hispanic women at 61.2% (n=9,006), followed by non-hispanic Black women at 56.1% (n=21,969), p< 0.0001. The incidence of preterm birth was highest among non-hispanic Black women at 16.7% (n=6,525), followed by non-hispanic White women and hispanic women at 10.0% (n=14,358) and 10.8% (n=1,582) respectively, p< 0.0001. The incidence of preeclampsia was also highest among non-hispanic Black women at 9.1% (n=3,550), followed by hispanic women and non-hispanic White women at 6.4% (n=948) and 1.3% (n=1,858) respectively, p< 0.0001. The incidence of maternal ICU admission was 39% higher among non-hispanic Black women compared to non-hispanic White women (0.17% vs 0.12%). The incidence of neonatal ICU admission was 62% higher among non-hispanic Black women compared to non-hispanic White women (11.4% vs 7.0%).

CONCLUSION: Disparities in prenatal care, pregnancy complications, and birth outcomes remain prevalent to our current day where non-hispanic Black women are receiving the least adequate prenatal care and having the most significant adverse pregnancy outcomes. More efforts should focus on access to care for Black women, as a modifiable step towards improving health outcomes for this population.

1083 Pharmacokinetics of oral misoprostol for induction of labor in pregnancies complicated by obesity

Marika Toscano[1], Charlotte Orzolek[2], Rachel Yull[3], Mikayla Satchell[3], Megan Betancourt[3], Kevin Welle[2], Curtis Haas[2], Monique Ho[2]

[1]Johns Hopkins University, Baltimore, MD, [2]University of Rochester Medical Center, Rochester, NY, [3]University of Rochester School of Medicine and Dentistry, Rochester, NY

OBJECTIVE: Birthing parents with obesity have increased risk of medical and obstetric complications during pregnancy, often leading to a recommendation for induction of labor (IOL). Misoprostol is commonly used for IOL, however there is limited data on whether it's pharmacokinetics (PK) are altered by body size. The objective of this study is to evaluate PK parameters of oral misoprostol in pregnancies complicated by obesity.

STUDY DESIGN: Pilot, single-center, observational study of non-fasting, term, singleton pregnancies with body mass index (BMI) > 30.0 kg/m^2 at time of IOL with 50 mcg oral misoprostol. Plasma concentrations of active metabolite misoprostol acid (MPA) were measured at four time points using liquid chromatography mass spectrometry. Plasma MPA-time data analyzed using a non-compartmental PK model to derive the area under the curve from the first time point to the last measured concentration (AUC_{0-t}) using the trapezoidal rule. Terminal slope (λ_z) used to extrapolate plasma concentration to infinity ($AUC_{0-\infty}$). Maximum serum concentration (C_{max}) and time to maximum plasma concentration (T_{max}) also described.

RESULTS: 26 plasma observations from 7 subjects were included (Table 1). Observed plasma concentrations over time (Figure 1) demonstrate median(range) C_{max} 26.63 (7.18-56.24) pg/mL, AUC_{0-t} 10.93 (2.43-24.64) pg-h/mL, λ_z 2.68 (2.00-3.07) h^{-1}, $AUC_{0-\infty}$ 22.67 (12.09-30.60) pg-h/mL. T_{max} observed at 0.25 hours. Prior study evaluating 50 mcg oral misoprostol in 12 subjects with normal BMI (mean 28.6 kg/m^2) reports mean±SD C_{max} 53.97±23.79 pg/mL, AUC_{0-t} 55.02±28.80 pg-h/mL, λ_z 1.05±0.86 h^{-1}, $AUC_{0-\infty}$ 66.63±33.22 pg-h/mL, T_{max} 0.23±0.14 hours.

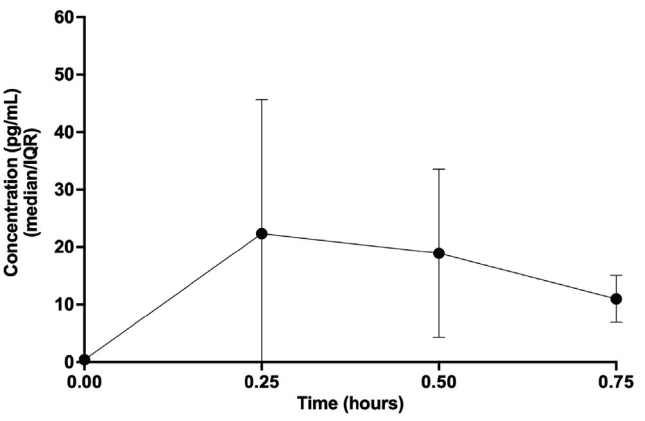
CONCLUSION: To our knowledge, this study is the first examination of 50 mcg oral misoprostol PK parameters among parturients with obesity undergoing term IOL. Data show decreases in PK parameters in this population, however some results are still within reported margin of error and there is marked variance between subjects. A future, powered, comparative trial is necessary to confirm these findings as well as further investigate clinically relevant outcomes.

Table 1. Clinical characteristics of the investigated parturients (n=7)

Characteristic variable	Result
Self-described race	
White	6 (85.7)
Black	1 (14.3)
Self-described Hispanic ethnicity	1 (14.3)
Age (years)	25.25 (29.0 – 31.0)
Parity	1.5 (1.0 - 4.5)
Gestational age (weeks)	39.0 (37.0 – 39.5)
Body Mass Index (kg/m^2)	36.2 (35.2 – 42.3)
Creatinine (mg/dL)	0.58 (0.50 – 0.83)
AST (U/L)	14.5 (10.25 -18.75)
ALT (U/L)	21.0 (11.75 – 28.0)
Initial cervical dilation (cm)	0 (0 – 2)
Length of induction (days)	2 (1-2.5)
Cesarean section	2 (28.6)

* All data displayed as either median (interquartile range) or N (%)

Figure 1. Misoprostol acid plasma concentration versus time in healthy parturients (n = 7) after the first dose of misoprostol 50 mcg administered orally



1084 A pilot randomized trial of an intervention to prevent postpartum depression in hospitalized antepartum patients

Marika Toscano[1], Rebecca Hartman[2], Amanda Rubano[3], Ponnila S. Marinescu[4], Ellen Poleshuck[2]

[1]Johns Hopkins University, Baltimore, MD, [2]University of Rochester Medical Center, Rochester, NY, [3]University of Rochester School of Medicine and Dentistry, Rochester, NY, [4]University of Rochester, Rochester, NY

OBJECTIVE: To explore the utility of a low-cost, low-resource, interpersonal therapy and psychoeducation-based intervention to prevent postpartum depression in a population of antenatal patients admitted for prolonged hospitalization for Obstetric complications.