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A1 PROTEINURIA IN PREGNANCY: A KEY FACTOR IN CHRONIC HYPERTENSION MANAGEMENT

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Purpose: This study aims to determine whether new-onset proteinuria is a clinically significant predictor of adverse maternal and fetal outcomes in pregnancies complicated by chronic hypertension.

Methods: This retrospective cohort study was conducted at a single center that included five birthing hospitals in the Metropolitan Detroit area, conducted between 2015 and 2022. The primary outcome measure was the development of superimposed preeclampsia with severe features. Secondary maternal outcomes included the development of preeclampsia without severe features, preterm delivery, and gestational age at delivery. Secondary fetal outcomes included fetal growth restriction and admission to the neonatal intensive care unit.

Covariates analyzed included age, race, obesity, and presence of pregestational or gestational diabetes. All patients were treated with antihypertensive agents, specifically nifedipine or labetalol. Exclusion criteria included absence of baseline proteinuria assessment, absence of hypertension, multifetal gestation, or missing covariate data. Only the first pregnancy was included for patients with multiple pregnancies within the cohort.

Descriptive statistics were reported as mean ± standard deviation for continuous variables and as frequencies with percentages for categorical variables. The normality of continuous variables was assessed using the Shapiro-Wilk test. Group comparisons based on new-onset proteinuria were conducted using a two-sample t-test for continuous variables and a Chi-square test for categorical variables. If the assumptions were not met, the Wilcoxon rank-sum test or Fisher's exact test was applied. Poisson regression with robust error variances was used to calculate risk ratios (RR) and 95% confidence intervals (CI) for binary outcomes, while linear regression was used for continuous outcomes. Both unadjusted and adjusted models were analyzed, accounting for potential confounders. Statistical significance was defined as $p < 0.05$.

Results: Among the 3815 patients with chronic hypertension included in the study, 890 exhibited a normal baseline urine protein-to-creatinine ratio. During pregnancy, 248 (27.9%) developed new-onset proteinuria, while 642 remained without proteinuria. The incidence of new-onset proteinuria was significantly higher among Black patients. Those who developed new-onset proteinuria were more likely to experience adverse maternal and neonatal outcomes, including a significantly higher likelihood of developing preeclampsia with severe features (11.3% vs. 4.0%, p<0.001), preterm delivery (51.6% vs. 22.3%, p<0.001), and neonatal ICU admission (49.5% vs. 17.1%, p<0.001). However, no significant association was found between new-onset proteinuria and preeclampsia without severe features (3.2% vs. 2.0%, p=0.33) or fetal growth restriction (15.7% vs. 18.1%, p=0.41).

In both unadjusted and adjusted models, new-onset proteinuria remained significantly associated with increased risks of preeclampsia with severe features (RR 2.80, 95% CI 1.68–4.68; p<0.001), preterm delivery (RR 2.17, 95% CI 1.80–2.63; p<0.001), and neonatal ICU admission (RR 1.99, 95% CI 1.59–2.49; p<0.001). Additionally, new-onset proteinuria was associated with a reduction in gestational age at delivery by 1.78 weeks (mean difference -1.78 weeks, 95% CI -2.25 to -1.30; p<0.001).

Conclusion: New-onset proteinuria in pregnancies complicated by chronic hypertension is significantly associated with an increased risk of superimposed preeclampsia with severe features, preterm delivery, and neonatal ICU admission. However, it is not associated with an increased risk of preeclampsia without severe features or fetal growth restriction. Additionally, new-onset proteinuria was linked to a reduction in gestational age at delivery. These findings underscore the clinical significance of proteinuria as a marker for severe maternal and neonatal outcomes in chronic hypertension. Further research is needed to better understand its role in informing management and risk stratification in this population.

A2 POSTPARTUM DEPRESSION FOLLOWING A SUBSTANCE-EXPOSED PREGNANCY: THE ROLES OF AGE, RACE/ETHNICITY, AND MENTAL HEALTH HISTORY

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Purpose: To explore the impact of age, race/ethnicity, and mental health history on the prevalence of postpartum depression (PPD) among individuals who are pregnant and using substances.

Background: Associations exist between substance use during pregnancy and PPD, however it remains unclear how this varies among different age groups, racial/ethnic groups, or how mental health history influences these outcomes. PPD is one of the most prevalent morbidities related to pregnancy, affecting 13% to 19% of women who give birth. There is significant research highlighting the risks associated with PPD emphasizing the prevalence and negative outcomes for both the mother and child

Methods: This study involved a retrospective review of electronic medical charts from two academic pediatric practices in the Midwestern U.S. The study included a racially, culturally, and geographically diverse sample of patients, designed to oversample those who used tobacco, marijuana, and/or opioids during pregnancy. Participants were limited to maternal-child dyads involving children born since July 2016 with pediatric medical records available through age 3, and with linked maternal prenatal and delivery records also available.

All data collection for this study was performed via manual review of medical records for an extensive set of study variables for the parent study including maternal medical and background factors, and child outcomes. Patient dyads were included in the parent study if prenatal records were available for the mother, delivery records were available for both the mother and the child, and fewer than three well check appointments were missing up to one year of life for the child. For the current study, only women who used substances during pregnancy were included.

The primary outcome was the development of postpartum depression in the mother. Postpartum depression was determined by maternal responses on the Edinburgh Postpartum Depression Scale (EPDS), which was administered to mothers at all pediatric well child checks up to 12 months of age at our participating practices, as well as maternal report of an outside diagnosis or treatment for PPD. A mother was considered positive for PPD if at least one EPDS score was 10 or greater, or if she reported she had been diagnosed or treated for PPD elsewhere.

Primary predictors were maternal race/ethnicity, age, and mental health history, all of which were extracted from the medical records. Additional demographic and medical information were extracted for the purposes of describing the study sample and exploring additional predictors of PPD. Descriptive analyses were utilized to describe the sample, and chi-square and t-test analysis was used to examine bivariate relationships between PPD and the other study variables. To determine which variables were most predictive of PPD, logistic regression analyses was used with dichotomous PPD as the outcome, and simultaneous entry of potential predictors including maternal age, race/ethnicity, marital status, medical insurance status (income dependent vs private, a marker of SES), adequacy of prenatal care utilization, self-report and biochemically confirmed pregnancy substance use (tobacco, marijuana, and opioids), and having been diagnosed with a mental health condition prior to pregnancy.

Results: The study sample contained all cases that were part of the larger Maternal-Child EMR project that involved substance use during pregnancy. Of those 185 cases, 173 had complete data on the primary predictor and outcome variables and were retained for the current report. One quarter of this sample (25.2%) was positive for PPD. In bivariate analyses, compared to those who did not experience PPD, those who did were significantly more likely to have private insurance. Overall, logistic regression analysis showed the predictors explained nearly a third of the variance in the experience of PPD ($R2 = .30$, $p= .036$). Two factors specifically were significant independent predictors of PPD, with those who had private medical insurance more than four times more likely than those with income dependent insurance to develop PPD, and those who used marijuana in pregnancy nearly three times more likely to develop PPD than those who did. After accounting for marijuana use and type of insurance and the other factors in the model, while having a prior mental health issue more than doubled the likelihood of developing PPD, this relationship was not statistically significant.

Conclusions: This study underscores the multifaceted nature of postpartum depression (PPD) among pregnant individuals who use substances, revealing that marijuana use and private insurance status are significant independent predictors of PPD risk. In contrast, while age, race/ethnicity, and preexisting mental health conditions were associated with higher PPD rates, these factors did not reach statistical significance in the final model, reflecting complex interrelationships among income, mental health history, and substance use. The unexpectedly higher PPD incidence among women with private insurance may highlight potential barriers to diagnosis or treatment for low-income women in underserved areas, warranting further investigation.

A3 ADDITION OF MISOPROSTOL TO DOUBLE-BALLOON CATHETER FOR CERVICAL RIPENING ASSOCIATED WITH IMPROVED OBSTETRIC OUTCOMES

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Introduction: Induction of labor (IOL) may be recommended in the setting of pregnancy complications, gestational age, maternal comorbidities, or electively after 39 weeks gestational age. If IOL is indicated but the cervix is determined to be unfavorable, cervical ripening agents like mechanical dilators and synthetic prostaglandin E1 medications can be used to promote cervical dilation, softening, and thinning to mimic the physiologic processes of spontaneous labor. The objective of this study was to compare labor outcomes of women who underwent cervical ripening with a double-balloon catheter alone or with the addition of concurrent misoprostol. We hypothesized that concomitant use of misoprostol and cervical ripening balloon (CRB) was associated with increased vaginal delivery rates compared to CRB use alone.

Methods: This study was a retrospective cohort analysis. The Epic medical record system was used to identify all patients who underwent IOL at Eskenazi Hospital during the study period (January 1, 2021- December 31, 2023). Patients were included if they underwent induction that included the use of a balloon catheter for cervical ripening, with or without additional medications. Exclusion criteria included placenta previa, history of prior cesarean delivery, gestational age less than 34 weeks, or contraindications to vaginal delivery. Data was extracted from the electronic medical record by study investigators and entered into the password-protected REDCap data collection system. Broadly, data collected included patient demographics (e.g., AMA, gestational age, ethnicity, nulliparity, indication for IOL), labor characteristics (e.g., cervical exam at time of balloon placement and removal, fetal presentation at admission, medication use in relation to balloon placement and removal), and maternal and fetal outcomes (e.g., terbutaline use, delivery mode, estimated blood loss, 5-minute Apgar score, NICU admission).

Descriptive statistics were calculated using Chi-Square for categorical variables and t-test for continuous variables. Unadjusted and adjusted logistic regression models were used to calculate odds ratios with 95% confidence intervals. All statistics were performed using SAS V9.4 (SAS Institute, Cary, NC).

Results: Of 1714 patients identified during the study period, 327 charts were reviewed with 323 meeting criteria for analysis. All 323 patients underwent IOL with a double-balloon catheter; 204 (63.2%) received concurrent misoprostol, while 119 (36.8%) received no additional pharmacologic agents. Baseline characteristics including mean maternal age, number of patients of advanced maternal age (AMA), ethnicity, and indication for induction were similar between groups. Individuals who received misoprostol in addition to the double-balloon catheter tended to have a greater mean gestational age (38.4±1.56 vs. 37.9±1.86 weeks; $p = 0.009$) and were less likely to be nulliparous (43.6 vs. 59.7%; $p = 0.005$) compared to those without additional pharmacologic intervention.

Patients who received concurrent misoprostol were significantly more likely to achieve vaginal delivery compared to those who received balloon catheter alone (84.3% vs. 60.5%, $p < 0.0001$). An unadjusted logistic regression demonstrated that treatment with balloon catheter and concurrent misoprostol was associated with reduced odds of cesarean delivery (OR 0.29, 95% CI: 0.17–0.48). This association remained significant after adjusting for nulliparity, indication for induction, birth weight, and AMA status (adjusted OR 0.32, 95% CI: 0.18–0.56).

Patients who underwent cesarean delivery were more likely to be nulliparous (OR 3.69, 95% CI: 1.95-7.02), be AMA (OR 2.96, 95% CI: 1.37-6.40), have gestational or chronic hypertension (OR 1.99, 95% CI: 1.00-3.95), and deliver infants with higher birth weights (OR 2.22, 95% CI: 1.25-3.97). These risk factors for cesarean delivery have also been demonstrated in prior research.

When stratified by delivery mode, there were no significant differences in rates of tachysystole (p = 0.68 for vaginal, p = 0.16 for cesarean), maternal complications (p = 0.82, p = 0.07), estimated blood loss (p = 0.14, p = 0.54), NICU admission (p = 0.15, p = 0.64), or low 5-minute Apgar scores (p = 0.52, p = 0.35) between patients who received both misoprostol and balloon catheter and those who received a balloon catheter alone.

Discussion: Concurrent use of misoprostol and CRB during IOL was associated with increased vaginal delivery rate without a significant difference in NICU admission or obstetric complication rates. Patients who underwent cesarean delivery were more likely to be nulliparous, be AMA, have infants with higher birth weights, and have gestational or chronic hypertension, regardless of ripening technique used. Potential impacts of this study include providing evidence-based recommendations on cervical ripening practices as well as informing best practices for future studies on induction of labor.

A4 INFANT FEEDING PRACTICES AND MATERNAL SLEEP OUTCOMES IN EARLY POSTPARTUM

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Background: Postpartum sleep disturbance is nearly universal, yet little is known about how infant feeding strategies influence the quantity or quality of sleep in the early postpartum period. Our objective was to examine whether supplementing with formula—often introduced to support shared caregiving or maternal rest—was associated with improved sleep quality or quantity in the early postpartum period.

Study Design and Methods: The Postpartum Study (PPS) enrolled 317 pregnant individuals in their third trimester who completed telephone surveys on infant feeding practices and maternal sleep at one week, six weeks, and three months postpartum. Feeding was categorized as exclusive formula feeding versus breastmilk feeding (with or without formula supplementation). Additionally, participants were categorized by whether breastmilk was delivered directly at the breast exclusively or via bottle (exclusively or to supplement direct breastfeeding). Both variables were coded as binary indicators, with exclusive formula feeding and bottle feeding as reference groups. Sleep quality was measured using the Pittsburgh Sleep Quality Index (coded as good/very good vs. not good/poor), and nightly sleep hours were self-reported. Associations at each wave were estimated using logistic regression for sleep quality and linear regression for sleep quantity. Models were run unadjusted and adjusted for maternal age, race/ethnicity, parity, hypertensive disorders of pregnancy (yes/no), partnered status, and education. A secondary complete-case analysis was conducted among participants with data at all three time points. All analyses were conducted in R v4.3.1; two-sided $p < 0.05$ denoted statistical significance. Missing covariate data were <3% and addressed through complete-case analysis.

Results: A total of 272 participants who completed at least two surveys were included in the analysis: 139 at Week 1, 110 at Week 6, and 105 at Month 3. Exclusive formula feeding was reported by 7.2% at Week 1, 22.7% at Week 6, and 32.4% at Month 3. Breastmilk feeding (with or without formula supplementation) was reported by 70.5% at Week 1, 49.1% at Week 6, and 41% at Month 3. Average nightly sleep increased over time (5.5 ± 1.6 hours at Week 1, 5.69 ± 1.5 hours at Week 6, and 6.2 ± 1.3 hours at Month 3). At Week 1, participants who breastfed (vs. formula fed) reported 1.49 fewer hours of sleep per night (adjusted β = -1.49 h, 95% CI -2.51 to -0.48, p = 0.004), but sleep quality did not significantly differ (adjusted OR = 0.33, 95% CI 0.05 to 1.52, p = 0.20). These differences attenuated at Week 6 and Month 3. Compared to feeding expressed breastmilk by bottle, direct breastfeeding was associated with lower sleep quality at Week 6 (adjusted OR = 0.35, 95% CI 0.13 to 0.91, p = 0.03), though sleep quantity remained similar at all time-points.

Forty-eight participants completed all three time-points for secondary analysis. The sample was racially diverse (45.8% White, 20.8% Black, 22.9% Hispanic/Latino, 68.8% multiracial/other), with a mean maternal age of 33 ± 4.4 years. No significant differences in maternal sleep quality or quantity were observed at any timepoint when comparing direct breastfeeding to bottle-feeding expressed milk. Similarly, no significant differences were seen between breastmilk feeding (with or without supplementation) and exclusive formula feeding. At Month 3, breastmilk feeders slept 0.84 fewer hours per night than formula feeders (crude β = -0.84 h, 95% CI -1.56 to -0.12, p = 0.02), though this difference was attenuated after adjustment (adjusted β = -0.69 h, 95% CI -1.47 to 0.09, p = 0.08).

Conclusions: In this diverse postpartum cohort, infant feeding practices were not consistently associated with maternal sleep quality or quantity. While formula feeding only was linked to increase sleep duration in the first postpartum week, this difference disappeared by six weeks. Feeding expressed breastmilk in a bottle was associated with improved sleep quality at six weeks, but not at other time points. These findings suggest that early postpartum sleep disturbance is largely driven by the universal demands of infant care rather than feeding method alone. Reduced sleep quality or duration should not be viewed as a deterrent to breastfeeding, particularly given the well-established health benefits of breastfeeding for both infant and parent. Future research should explore within-person trends as parents change infant feeding practices over the postpartum period and identify interventions that support breastmilk feeding and maternal rest during the early postpartum period.

A5 EVALUATING SERIAL SERUM LEVELS OF ENDOCAN AND SYNDECAN IN INFANTS BORN TO WOMEN WITH HYPERTENSIVE DISORDERS OF PREGNANCY

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This retrospective analysis of prospectively collected data investigates whether the presence and severity of hypertensive disorders of pregnancy (HDP) are associated with alterations in endocan and syndecan, endothelial biomarkers, in preterm infants during the first 6 weeks of life to explore how maternal HDP may influence neonatal endothelial remodeling.

Endocan and syndecan are both markers of endothelial dysfunction; however, syndecan has not yet been studied in the neonatal population. Data was collected from preterm infants (< 33 weeks gestation) admitted to the neonatal intensive care unit (NICU) between November 2014 and February 2024. Endocan and syndecan levels were measured from blood samples obtained within the first 48 hours of life (Week 0) and then repeatedly at postnatal Weeks 1-6. Infants with a clinical history of chorioamnionitis were excluded given its potential confounding effect on systemic inflammation and endothelial function. Maternal data included maternal age, gravida, para, gestational age at delivery, ethnicity, BMI, route of delivery, and any hypertensive disorders of pregnancy, with their respective treatment if used. The specific hypertensive disorders included gestational hypertension, preeclampsia (with and without severe features), chronic hypertension, chronic hypertension with superimposed preeclampsia (with and without severe features), and HELLP syndrome. Infant data gathered included date of birth, sex, birthweight, head circumference, length, and Apgar scores at 1 and 5 minutes. Groups were compared at each time point by 2-tailed t-tests, corrected for multiple comparisons. Differences with $p < 0.05$ were considered significant.

Endocan and syndecan levels were analyzed across 7 postnatal time points in 269 preterm infants born to mothers with (n=115) and without (n=154) hypertensive disorders of pregnancy (HDP). In infants born to normotensive mothers, syndecan levels exhibited a marked and consistent decline over the first 6 postnatal weeks. Specifically, syndecan levels decreased from 194 ± 19 ng/mL at Week 0 to 73 ± 44 ng/mL at Week 6, suggesting a steady process of neonatal endothelial remodeling. In the HDP subgroups a similarly consistent decline was observed. For example, infants of mothers with preeclampsia with severe features showed a reduction of syndecan levels from 180 ± 86 ng/mL at Week 0 to 90 ± 32 ng/mL at Week 6. Comparable baseline and Week 6 values for the other hypertensive subtypes were also noted, underscoring that the consistent linear decrease in syndecan was evident across the entire HDP spectrum. In contrast, endocan levels were more variable. Infants born to normotensive mothers exhibited relatively stable endocan values over time (Week 0: 317 ± 260 pg/mL; Week 6: 325 ± 289 pg/mL), whereas infants born to mothers with severe preeclampsia showed a more pronounced decrease (Week 0: 266 ± 212 pg/mL; Week 4: 157 ± 151 pg/mL). Initial comparisons suggested lower endocan levels in the preeclampsia with severe features group at weeks 4 and 5 ($p<0.05$), but this did not reach statistical significance after correction for multiple comparisons. Moreover, no significant differences in biomarker trends were observed across HDP subtypes or between ethnic groups.

In this cohort of preterm infants, both endocan and syndecan levels declined after birth regardless of maternal hypertensive status, suggesting that neonatal endothelial adaptation may occur independently of in utero hypertensive exposure. The more linear and consistent decline in syndecan suggests it may serve as a more sensitive marker of neonatal endothelial remodeling. These findings represent the first known longitudinal analysis of these endothelial biomarkers in infants born to mothers with HDP. Future studies should explore associations between endocan and syndecan levels and additional maternal and neonatal factors to better understand contributors to endothelial function. Additional directions include examining the presence of fetal growth restriction, degree of prematurity, placental pathology, as well as investigating the role of additional maternal inflammatory conditions such as COVID-19. These findings may ultimately improve biomarker-driven risk stratification and obstetric management strategies in pregnancies complicated by HDP, potentially helping optimize both maternal and neonatal outcomes.

A6 EVALUATION OF THE ACCURACY OF FETAL WEIGHT PREDICTION TECHNOLOGY IN PREDICTING FETAL MACROSOMIA

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Background: Pregnancies complicated by the presence of fetal macrosomia, or birth weight > 4000g, are associated with increased risk of adverse neonatal and maternal outcomes. The ability to identify macrosomic fetuses prior to birth can help guide counseling regarding these complications and options for delivery. Current guidelines recommend shared decision-making regarding options for delivery planning in these pregnancies, including expectant management, induction of labor, and cesarean delivery. In June of 2024, the obstetrical ultrasound software used at the University of Louisville adopted the use of a fetal birth weight prediction technology, using parameters used in standard growth ultrasounds and extrapolating data to predict what a fetus's weight would be at 39 weeks gestation. The ability to predict a fetuses weight at 39 weeks earlier on in pregnancy would be a crucial tool for providers to start conversations with patients regarding delivery planning earlier. Prior research has focused on evaluating parameters such as estimated fetal weight or abdominal circumference on the day of the ultrasound, and evaluating whether or not this finding is associated with adverse outcomes such as fetal macrosomia. There is a lack of research examining the accuracy of fetal weight predictions compared with actual delivery weights or the association of these predicted weights with adverse outcomes.

Objective: To investigate the ability of sonographic fetal weight prediction technology to predict the presence of fetal macrosomia at birth.

Methods/Design: This was a retrospective chart review examining patients who had growth ultrasounds with predicted fetal weight at 39 weeks >4000g between 6/1/2024 and 12/31/2024. The primary outcome of the study was the discrepancy between predicted fetal weight at 39 weeks and actual birth weight. Secondary outcomes included gestational age at delivery, latency between ultrasound and delivery, maternal BMI, presence of maternal diabetes or

delivery complications such as shoulder dystocia, postpartum hemorrhage, or OASIS injury. Patients were also stratified by predicted birth weight (4000g– 4499g; 4500g-4999g; 5000g or greater) to assess differences in the ability of ultrasound to predict fetal macrosomia with different predicted fetal weights.

Results: Out of 155 patients included in the study, the average maternal age was 32.1 years (+/- 5.3 years). 35% of patients carried a diagnosis of diabetes, and average maternal BMI was 35.6 (+/- 7.1). The average gestational age at delivery was 38.1 weeks (+/- 1.3 weeks). Average latency between ultrasound date and delivery date was 22.8 days (+/- 13.5 days). 63% of patients in the entire cohort had Cesarean deliveries, with repeat Cesareans accounting for 35% of the cohort. 37% of the cohort had vaginal deliveries. The rate of shoulder dystocia among patients who had a vaginal delivery was 4%. The rate of OASIS injury among patients who had a vaginal delivery was 2%. The rate of PPH was 15%.

Out of the full cohort of patients, the average predicted EFW at 39 weeks was 4.35 kg (+/- 0.32 kg). The average actual birth weight was 3.79 kg (+/- 0.48 kg). The average over-prediction error for the full cohort was therefore 562g (+/- 421g). 32% of babies in the full cohort were born at or above 4000g.

When examining only patients who delivered between 38+0 and 40+0 (within one week of 39 weeks), out of 76 patients, the over-prediction error was smaller at 379g (+/- 331g). The average predicted birth weight at 39 weeks in this subgroup was 4.29kg (+/- 0.25kg) and the average actual birth weight in this subgroup was 3.91kg (+/- 0.37kg). 36% of babies in this sub-group were born macrosomic. When stratifying this subgroup further into predicted weights at 39 weeks of 4000-4499, 4500-4999, or over 5000g, the over-prediction error increased as the predicted weight category increased. The over-prediction error was 346g (+/- 317g) in the 4000-4499g subgroup; 465g (+/- 318g) in the 4500-4999g subgroup, and 1223g in the 5000+g subgroup, with a p-value of 0.021.

No significant differences in over-prediction error were seen when stratifying by maternal BMI, maternal age, or latency between ultrasound date and delivery date.

Conclusion: Among the entire cohort of patients, only 32% of babies that had a predicted EFW at 39 weeks above 4000g were born macrosomic. Among the subgroup who delivered within one week of 39 weeks, 36% of babies were born macrosomic. This is consistent with findings from another study examining third trimester ultrasounds showing EFW > 90th percentile which demonstrated a positive predictive value of 41% for the presence of fetal macrosomia at birth. This indicates that fetal birth weight prediction technology may be of similar accuracy to third trimester growth ultrasounds, and therefore that predictions from earlier ultrasounds may be used to guide counseling.

There was a statistically significant increase in the over-prediction error as the predicted birth weight at 39 weeks increased. There was no significant difference in over-prediction error seen when stratifying for maternal BMI, maternal age, or latency between ultrasound date and delivery date.

A7 NUTRITIONAL BARRIERS IN MATERNAL HEALTH: THE IMPACT OF FOOD INSECURITY ON GESTATIONAL DIABETES AND POLYHYDRAMNIOS

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Purpose: To explore associations between food insecurity (FI), gestational diabetes mellitus (GDM), and polyhydramnios in North Louisiana (LA) mothers, specifically in racially diverse and economically disadvantaged populations.

Methods: A cross-sectional study was conducted from 2018 to 2023 among pregnant women receiving care at multiple obstetric units in a large, academic tertiary care health system providing services to patients across North LA. The study included patients from both urban and rural regions, permitting for the sample to be generalizable to North LA. Data was extracted from the electronic medical records (Epic) and categorized based on diagnoses of interest as determined by ICD-10 codes and FI status, as determined by the validated, two-question Hunger Vital Sign questionnaire. Diagnoses of interest included GDM (ICD-O24) and polyhydramnios (ICD-O40). Analyses were performed in jamovi using Chi-squared (X2) tests and Odds Ratios (ORs) within a 95% confidence interval (CI) for maternal FI and diagnoses, with additional stratification by race and age. Age categories were defined as optimal reproductive age (18-34), advanced maternal age (AMA, 35-39), very AMA (40-44), and extreme AMA (45-50).

Results: The patient population (n=2,642) consisted of 58% African American (AA) women and 42% other, non-Black women.72% of patients were of optimal reproductive age, 19% of AMA, 7% of very AMA, and 2% of extreme AMA. Analysis revealed statistically significant associations in food-insecure mothers experiencing both GDM and polyhydramnios concurrently (OR=3.47, 95% CI, 1.46–8.21, p=0.003), with a diagnosis of polyhydramnios without GDM (OR=1.75, 95% CI, 1.05–2.90, p=0.027), and with a diagnosis of GDM without polyhydramnios (OR=1.29, 95% CI, 1.05–1.83, p=0.020). Stratifying by race and age, significant associations for food-insecure Black women with concurrent GDM and polyhydramnios were observed in those of optimal reproductive age (OR=4.39, 95% CI, 1.09–17.6, p=0.023). This association was not statistically significant in other races. No significant associations for GDM and polyhydramnios concurrently were observed in any race of AMA, very AMA, or extreme AMA. There were no cases of GDM and polyhydramnios in non-Black, extreme AMA

women; thus, associations in this group could not be evaluated.

Statistically significant associations were observed in food-insecure Black women with a diagnosis of polyhydramnios without concurrent GDM in those of optimal reproductive age (OR=0.377, 95% CI, 0.163–0.869, p=0.017); this association was not significant in other races. No significant associations were observed in Black women with polyhydramnios alone in those of AMA, very AMA, or extreme AMA. A significant association was observed in non-Black women of AMA with polyhydramnios alone (OR=6.38, 95% CI, 1.71–23.9, p=0.002), but not in non-Black, very AMA women. There were no cases in non-Black, extreme AMA women; as such, associations could not be evaluated.

Statistically significant associations were observed in food-insecure Black women with GDM without concurrent polyhydramnios in those of optimal reproductive age (OR=0.469, 95% CI, 0.309–0.710, p<0.001); this association was not significant in other races. Similarly, no statistically significant associations were observed in Black women with GDM alone in those of AMA, very AMA, or extreme AMA. However, significant associations were observed in non-Black women with GDM alone in those of AMA (OR=13.8, 95% CI, 4.75–40.2, p<0.001) and very AMA (OR=9.27, 95% CI, 1.15–74.5, p=0.011). No significant association was observed in non-Black, extreme AMA women.

Conclusion: Associations between FI, GDM, and polyhydramnios highlight a complex interplay influenced by race and age. The statistically significant association between FI and both GDM and polyhydramnios is reasonable, as GDM is a known risk factor for polyhydramnios. However, this association was only significant in Black women of optimal reproductive age, underscoring a need for further investigation. Findings of GDM and FI without concurrent polyhydramnios, stratified by race and age, further aligned with literature, as food-insecure Black women of optimal reproductive age were less likely to experience GDM alone, and food-insecure non-Black women of AMA or very AMA were more likely to experience GDM alone. The data also suggests that maternal FI could be a risk factor for polyhydramnios independent of GDM, with ORs implying that mothers experiencing FI are more likely to be diagnosed with polyhydramnios alone than GDM alone, independent of race and age. Considering race and age, significant associations persisted between FI and polyhydramnios without concurrent GDM in only Black women of optimal reproductive age and non-Black women of AMA. This suggests food-insecure Black women of optimal reproductive age are less likely to develop polyhydramnios alone, while food-insecure non-Black women of AMA are more likely. Differences in prevalence of GDM and polyhydramnios by race and age emphasize the importance of screening in appropriate patient populations and pique interest regarding topics for future study.

A8 AN ALTERNATIVE APPROACH TO VAGINAL EXPANSION-UTILIZING ESTROGEN COATED 3-D PRINTED VAGINAL EXPANSION SLEEVES

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Background: Vaginal atresia is characterized by an underdeveloped or absent vaginal canal from genetic disorders such as Mayer-Rokitansky-Kuster-Hauser. Current treatment methods utilize mechanical dilation, requiring patient compliance or reconstructive surgery, which is more invasive than mechanical dilation. Previous proof of concept studies in our lab suggested the use of a novel minimally-invasive vaginal expansion sleeve (VES) successfully lengthened the vaginal canal in Sprague Dawley rats. However, histological analysis demonstrated the thinning of the vaginal wall characterized by compression of the soft tissue and stretching of muscle fibers. A follow-up study utilizing treatment with adjunct GLP-2 showed successful lengthening with a decreased but still present mild to moderate inflammation. Estrogen is associated with antiinflammation through several pathways, including the generation of nitric oxide and the inhibition of tumor necrosis factor-α.

Purpose: In this project, we aim to investigate the effects of estrogen coating on the VES sleeve functionality. We hypothesize that estrogen contributes to expansion and thickening of the vaginal wall with decreased inflammation.

Methods: This study was conducted using an IACUC-approved protocol. The VES sleeve is a woven polyethylene terephthalate cylindrical sleeve with a 3D-printed biocompatible resin cap featuring suture holes for anchorage to the vaginal canal. Six Sprague Dawley rats were anesthetized with isoflurane. To ensure proper sedation, a toe pinch was used. Vaginal lengths were measured with a pediatric anal dilator using lubricating jelly. A VES was then cut to measure 30% larger than the of the measured rat vaginal canal. A dose of 0.005 mg of topical Premarin estrogen (0.625 mg/g) was inserted into the vagina using a Luer Lock syringe before VES implantation. The plunger of the syringe was removed, lubricating jelly was added, and the mixture was reinserted into the vagina to ensure all estrogen was applied. The VES was inserted with the resin cap positioned externally. Two non-absorbable silk sutures anchored to a surgical pledget were used to secure the device in place on each lateral side of the vaginal canal, ensuring a placement inferolateral to the urethra to avoid impaction of urinogenital tract. After surgery, the rats were left to expand the tissue for a week. Rats were observed daily for signs of infection, pain, and/or damage to the VES. If the VES was removed by the rat during the week, surgery was performed again to reinsert the device. No signs of infection were pre-

sent during the study period; however, the protocol indicates that antibiotic ointment should be placed on external sutures if signs of infection are present. Sleeves were serially replaced weekly and progressively increased in size of 30% of the vaginal canal to facilitate tissue expansion.

Following three consecutive sleeve replacements, the VES was removed for two weeks to allow for post-surgical contraction. Vaginal lengths were longitudinally measured through the five-week trial. Following completion of the expansion trial, vaginal tissues were harvested for histological analysis. Vaginal tissue of five control rats was obtained. Each of the vaginal canals were transected down the midline. The tissue was affixed around a wooden stick into a "Swiss-roll" conformation, ensuring the cervical side was internal. A pin was inserted through the tissue to hold its proper shape. Tissue was fixed in 3.7% formaldehyde for at least 24 hours before processing. Samples were embedded in paraffin before sectioning onto glass slides. Slides were stained using hematoxylin and eosin (H&E) and Masson's trichrome.

Results: Weekly estrogen-coated VES yielded an overall mean retained rat vaginal wall length of: 31.5 ± 01.0 mm (week 1), 34.7 ± 0.21 mm (week 2), 36.3 ± 3.8 mm (week 3), 34.5 ± 2.0 mm (week 4), and 34.8 ± 0.8 mm (week 5). The average control vaginal wall length was 29.3 ± 1.2 mm. An overall increase of 19.0% compared to controls was demonstrated ($p < 0.001$). Previous studies demonstrated an overall increase of 20.4% when used with no adjunct therapy and 35.0% when used with adjunct GLP-2. Despite similar expansion to VES-use only, estrogen-coated VES yielded significantly less expansion than GLP-2-coated VES. However, both previous studies noted moderate inflammation, thinning of the vaginal wall, and eosinophil infiltration.

Preliminary histological analysis appears to show that estrogen adjunct therapy increased the overall thickness of the vaginal wall, including the epithelial, elastic, and muscular layers. Particularly, the cellularity of the epithelial layer is increased demonstrating notable multicellular layers. Morphometric analysis is ongoing.

Conclusion: VES expansion with adjunct estrogen successfully lengthens vaginal canals, confirming that the estrogen coating did not affect the functionality of the device. Compared to previous VES studies which noted thinning of the vaginal canal, the addition of estrogen increased the thickness of the vaginal wall in the acquired post-mortem specimens. Further histological analysis will focus on the inflammatory response.

A9 IMPACT OF THE DOBBS DECISION ON DEPRESSION & ANXIETY RATES DURING PREGNANCY: AN EPIC COSMOS ANALYSIS

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Objective: This study analyzes the impact of the 2022 Dobbs decision on the mental health of pregnant individuals across the United States (US), focusing on rates of depression and anxiety diagnoses before and after the ruling

Study Design: A retrospective analysis was conducted using the Epic Cosmos database. Over 8.5 million pregnant patients accessing pregnancy care between 2018 to 2024 were included. As a control population, legal sex males aged 18–45 across the US during the same time periods were assessed. Rates of anxiety and depression were compared between two time periods: pre-Dobbs (January 2018 - February 2020) and post-Dobbs (September 2022 - July 2024), excluding the COVID-19 period (March 2020 - August 2022). The rates of depression and anxiety diagnoses were identified in the Cosmos database, using specific International Classification of Diseases-10 (ICD-10) diagnosis codes for depression and anxiety, as shown in the billing code and problem list. For depression, the codes included were F32.A (Depression, unspecified), F32.* (Major Depression), and F53.0 (Postpartum Depression). For anxiety, the codes utilized were F41.9 (Anxiety disorder, unspecified), F41.* (Generalized anxiety disorder and other anxiety-related conditions), and F43.22 (Adjustment disorder with anxiety). States were categorized based on their abortion policies using Guttmacher Institute criteria: restrictive, protective/restrictive (states with both protective and restrictive policies), or protective.

Results: Among 8,881,574 pregnant patients, significant increases in depression and anxiety rates were observed post-Dobbs. Depression diagnoses increased from 8.0% to 11.3% in restrictive states ($p<0.001$), from 8.2% to 10.8% in protective/restrictive-policy states ($p<0.001$), and from 8.6% to 11.1% in protective states ($p<0.001$). Anxiety rates rose from 8.7% to 14.2% in restrictive states ($p<0.001$), from 10.0% to 13.89% in protective/restrictive-policy states ($p<0.001$), and from 9.6% to 14.2% in protective states ($p<0.001$). Comparatively, for males aged 18-45, overall depression rates increased from 5.0% to 5.7% and overall anxiety rates increased from 7.2% to 8.7% ($p<0.001$).

Restrictive states demonstrated the largest increased rates of both conditions. Restrictive states Kentucky and Ohio showed the most pronounced rise in depression rates (Kentucky: 8.1% to 13.9%, $p<0.001$; Ohio: 11.3% to 16.6%, $p<0.001$). Similarly, anxiety rates increased sharply in restrictive state West Virginia (12.1% to 20.7%, $p<0.001$). Protective states exhibited more modest changes. For example, Rhode Island showed a non-significant decrease in anxiety diagnoses (9.2% to 8.2%, $p=0.137$).

Conclusions: Following the Dobbs decision, depression and anxiety rates among pregnant individuals significantly increased, with the largest impact observed in states with restrictive abortion policies. These findings highlight the differential impact of state-level abortion policies on mental health outcomes during pregnancy.

A10 A STRUCTURED INCORPORATION OF ACOG'S SURGICAL CURRICULUM IN OBSTETRICS AND GYNECOLOGY INTO DIDACTIC LEARNING AT A UNIVERSITY-BASED OB/GYN RESIDENCY PROGRAM

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Introduction: Simulation is an essential and proven training tool in medical education. The simulation environment provides opportunities for trainees to gain technical competency in a safe environment. Simulation in medical education spans a broad spectrum—from low-fidelity, unmonitored skills training to high-fidelity, technically advanced multidisciplinary drills—adapting to the resources and objectives of each setting. In the field of Ob/Gyn, residency programs are built around the core objective of cultivating surgical competence through comprehensive training. Although the versatility of simulation is one of its greatest strengths, this variability underscores the critical need for objective evaluation of its effectiveness and a systematic approach to training core skills in Ob/Gyn residency. The CREOG Surgical Skills Task Force created a standardized surgical skills curriculum, Surgical Curriculum in Obstetrics and Gynecology (SCOG), with 27 units targeting key surgical techniques.

Methods: Our Ob/Gyn residency—a mid-size, university-based training program—implemented a structured, two-year simulation curriculum under the direct supervision of a Simulation Director. We provided two hours of simulation training each month, comprising 20% of protected resident didactic learning time. The simulation curriculum incorporates both the SCOG units and modules originating within the program. We aimed to target both procedural and team-based communication skills. We collected data regarding resident knowledge with pre- and post-simulation testing from the SCOG units. Test scores were identified by residency training year to track differences in pre- and post-test scores according to level of training. We had access to space and resources of our university's multidisciplinary simulation center to support our curriculum.

Results: Over two years, our simulation curriculum trained residents using 15 out of 27 of the SCOG units and ten simulations created within our department or utilizing other educational materials. Our simulation curriculum contained 9 obstetric topics, 13 gynecology topics, and 3 non-technical skills topics. The Ob/Gyn residents consistently improved between pre-simulation and post-simulation tests. For each of the 15 SCOG units completed, 100% of residents participating had a post-simulation passing score of 80% or greater. For the SCOG units completed, pre-simulation test scores ranged from 56% to 97%, with a mean score of 72.6% ± 12.2%. Post-simulation test scores ranged from 88% to 100%, with a mean post-simulation test score of 94.2% ± 4.3%. Scores were divided by class to show differences in degree of improvement at different training levels.

Discussion: The differences in pre- and post-simulation test scores show improvement in clinical knowledge after implementation of the SCOG units. Our simulation program serves as a model for integrating a standardized simulation curriculum into resident training with objective measures of efficacy. In addition, topics not covered by the SCOG units can be incorporated into the simulation curriculum, using the same principles of effective simulation and assessment. Strengths of our program include a dedicated Simulation Director, a systematic approach to curriculum design, and use of low cost, low fidelity models. Moving forward, our program aims to incorporate objective evaluation of learner skills in addition to the measures of clinical knowledge. Future goals also include measuring resident feedback of the simulations to demonstrate learner satisfaction and identify areas for improvement.

A11 OBESITY AND PREECLAMPSIA: EARLY PREGNANCY BMI AS A KEY PREDICTOR IN THE HOOSIER MOMS COHORT

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Objective: To evaluate the association between early pregnancy body mass index (BMI) and the development of preeclampsia.

Methods: This was a secondary analysis of data from the Hoosier Moms Cohort (HMC), a prospective observational study designed to evaluate predictors of adverse maternal and neonatal outcomes across Indiana. Participants were recruited prior to 20 weeks gestation and followed longitudinally through pregnancy and postpartum. For this analysis, we included individuals without pre-existing hypertension who had complete data on BMI, blood pressure, pregnancy outcomes, and relevant covariates.

Pregnancy outcomes were categorized into normotensive (n=259), preeclampsia (n=53), and gestational hypertension (GH) (n=74). BMI was calculated using measured height and weight obtained at the first prenatal visit (Visit 1, 8+0 to 19+6 weeks' gestation) and was categorized as obese (BMI ⩾30 kg/m^2) or non-obese.

Covariates included maternal age, self-identified race/ethnicity, educational attainment, parity, diastolic blood pressure at enrolment, and recent smoking status. Perceived stress was assessed using the Perceived Stress Scale (PSS) and included in the multivariable model to adjust for potential physiological stress effects.

Group differences were assessed using chi-square tests and one-way ANOVA. A generalized logit model was constructed with normotensive pregnancies as the reference group to estimate adjusted odds ratios (aORs) and 95% con-

fidence intervals (CIs) for preeclampsia and GH. Model variables were selected based on clinical relevance and univariate significance (p<0.10).

Results: Among the 386 participants, the mean BMI was significantly higher in the preeclampsia group compared to normotensive pregnancies (30.4 vs. 26.5 kg/m², p<0.0001). Nearly half of those who developed preeclampsia were classified as obese (47.2%), compared to 19.7% in the normotensive group. Obesity was also more prevalent in participants with GH (38.9%, p<0.0001). African American and nulliparous individuals were disproportionately represented in the preeclampsia group (35.9% vs. 11.2% in normotensive pregnancies, p=0.0002, 60.4% vs. 39.1%, p=0.008, respectively).

In the multivariable model, adjusting for parity, race, education, diastolic blood pressure, maternal age, and perceived stress, obesity remained independently associated with increased odds of preeclampsia (aOR 2.60; 95% CI, 1.26–5.37) and GH (aOR 2.47; 95% CI, 1.30–4.73). Nulliparity (aOR 4.17; 95% CI, 1.94–8.98), African American race (aOR 3.10; 95% CI, 1.32–7.28), lower education (high school or less: aOR 2.90; 95% CI, 1.09–7.68), and higher diastolic blood pressure (aOR per mmHg: 1.11; 95% CI, 1.06–1.16) were also significant preeclampsia predictors. Perceived stress showed a modest association with preeclampsia (aOR 1.06 per one-point increase; 95% CI, 1.00–1.11), but did not substantively change the association between obesity and preeclampsia.

Conclusion: Obesity in early pregnancy was a strong and independent predictor of preeclampsia in this prospective cohort, conferring more than double the risk even after adjusting for clinical and demographic variables. These findings reinforce the critical importance of early BMI assessment during prenatal care and highlight obesity as a modifiable risk factor for preeclampsia. Addressing maternal weight before and during pregnancy may be a key strategy in reducing the burden of hypertensive disorders and improving maternal outcomes.

A12 PROGESTERONE IN OIL: A RETROSPECTIVE STUDY OF THE PREVALENCE OF PROGESTERONE HYPERSENSITIVITY IN MEDICATED FROZEN EMBRYO TRANSFER CYCLES AND ITS IMPACT ON REPRODUCTIVE OUTCOMES

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Background: In medicated frozen embryo transfer (FET) cycles, exogenous progesterone is essential during the luteal phase to support implantation and early pregnancy due to the absence of the corpus luteum. Among the variable forms of exogenous progesterone, intramuscular (IM) progesterone in oil (P-in-oil) is generally considered the most effective. However, some patients experience hypersensitivity reactions, raising concerns about their potential impact on implantation success and early pregnancy development. Progesterone plays a central role in the dynamic immune balance necessary to establish and maintain a successful pregnancy. Progesterone hypersensitivity reaction could disrupt this delicate balance, potentially leading to adverse reproductive outcomes and affecting future fertility care. Although hypersensitivity reactions to P-in-oil are rare, they warrant attention due to their potential implications for clinical management and patient outcomes. Notably, data on reproductive outcomes in patients experiencing hypersensitivity to exogenous progesterone, particularly P-in-oil, remains limited.

Objectives: This study aims to evaluate the prevalence of progesterone hypersensitivity in women undergoing medicated FET cycles utilizing P-in-oil and to investigate the clinical implications of such reactions on reproductive outcomes.

Methods: A retrospective cohort study was conducted including 814 medicated FET cycles at a private assisted reproductive technology program between April 2022 to August 2023. All patients received exogenous IM P-in-oil for luteal phase support. We excluded cycles involving donor oocytes or embryos, as well as those using gestational carriers, to ensure a homogeneous study population. Cycles that involved alternative or combined progesterone regimens were also excluded to isolate the effects of IM P-in-oil. Statistical analysis included Chi-squared tests for categorical variables and T-tests for continuous variables. Relative risks (RR) and 95% confidence intervals (CI) were calculated using multivariate logistic regression to adjust for potential confounders. A p-value of < 0.05 was considered statistically significant throughout the analysis. This study was approved by the Institutional Review Board of Indiana University.

Results: A total of 673 patients who underwent medicated FET cycles were analyzed within the cohort. Approximately 10.3% (n=69) of patients using P-in-oil supplementation reported experiencing a reaction during one of their treatment cycles, resulting in an overall reaction rate per cycle of 8.5%. Symptoms of progesterone hypersensitivity (PH) varied widely and included dermatitis, urticaria, edema, fever, nausea, and dyspnea. Dermatologic manifestations were the most frequently reported symptoms, occurring in 95.5% of patients who experienced adverse reactions. In contrast, systemic adverse reactions were uncommon, reported in less than 5% of cases. The live birth rate was significantly higher in patients who experienced a reaction (68.1%, n=47) compared to those without a reaction (47.7%, n=355) (p = 0.001; RR 2.19, CI 1.35-3.56). No significant difference was found in the miscarriage rate between patients with and without reported reactions (8.7%,

n=6 vs. 8.7%, n=65, respectively) (p = 0.99; RR 1.00, CI 0.45 – 2.22).

Conclusions: Hypersensitivity to P-in-oil presents a unique and underrecognized challenge in management of patients undergoing medicated FET cycles. This is the largest cohort analyzing progesterone hypersensitivity in patients using P-in-oil. Our data suggests that this rare occurrence has a minimal negative impact on reproductive outcomes. Notably, patients who experienced hypersensitivity reactions during P-in-oil use were more than twice as likely to achieve a live birth compared to those without reactions. Patients who experience hypersensitivity reactions while using P-in-oil can be reassured that their medication regimen is unlikely to negatively impact their success rates. However, given the complex immune-hormonal interactions involved in early pregnancy, larger prospective studies are warranted to validate these findings and better understand their clinical implications.

A13 THE EFFECT OF CALCIUM CARBONATE ON LABOR INDUCTION: A PILOT STUDY

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Purpose: Since 1976, cesarean deliveries in the United States have increased approximately 30%. While sometimes lifesaving, cesarean deliveries are associated with greater maternal risks than vaginal deliveries. The most common indication for cesarean delivery is labor dystocia. Calcium carbonate (CaCO3), brand name TUMS, has gained popularity for off-label use to prevent labor dystocia based only on anecdotal evidence, as no human trials have been conducted. Pharmacologically, calcium may improve uterine muscle contractility, and carbonate may decrease lactic acid buildup. This led us to investigate the potential for CaCO3 to prevent labor dystocia caused by poor uterine contractility during labor inductions and decrease cesarean delivery rates. We conducted a pilot study to explore the use of CaCO3 to augment labor induction by assessing (1) induction duration with oxytocin administration, (2) rate of labor dystocia, (3) rate of cesarean delivery, (4) maternal/neonatal outcomes, and (5) GI side effects.

Methods: We conducted a quasi-experimental pilot study, inclusive of a prospective treatment group and a retrospective control group, among English and Spanish-speaking pregnant adults who presented for labor induction at an urban, teaching hospital in southeastern Wisconsin. The prospective treatment group (CaCO3 group, n=50) was consented between June 2024 and September 2024. After cervical ripening, the prospective treatment group received CaCO3 per standard treatment protocol (500mg orally every 4 hours), along with standard-dose oxytocin. After birth, participants completed a validated gastrointestinal (GI) effect survey. A randomly selected retrospective control group (control group, n=200) who presented for induction and received standard-dose oxytocin without CaCO3 between 2020-2022 was also identified. The primary outcomes assessed were (1) induction duration with oxytocin administration, excluding cervical ripening, and (2) rate of labor dystocia. Secondary outcomes assessed were the rate of cesarean delivery, amount of oxytocin used, blood loss, postpartum hemorrhage rate, neonatal outcomes, and GI side effects. All data were collected from the electronic medical record or GI side effects survey (scale 1-5 [no problem-very severe problem]) and were stored in REDCap. Means, medians, or percentages were reported as appropriate. Given that the goal of this pilot study was to inform sample size and explore any side effects or protocol concerns for a future randomized control trial, sample size estimates were not completed. Differences between groups were assessed using Pearson chi-squared test of independence, Fisher's exact test, or Wilcoxon's rank sum test, as appropriate. Multivariable Gamma and logistic regression models were used to carry out adjusted analysis. Two tailed $p < 0.05$ was considered statistically significant.

Results: Baseline characteristics, including maternal age, body mass index, gestational age, parity, and starting Bishop score, were similar between groups. However, the groups were significantly different on race (e.g., African Americans were 38% in CaCO3 group vs. 62.5% in control group, p<0.01). After adjusting for this difference, mean induction duration with oxytocin was longer but not significantly between groups (879.3 minutes CaCO3vs. 759.5 minutes control group, $\beta = 0.142$, 95% CI: −0.05 to 0.33, $p = 0.14$). Despite this, there was a non-statistically significant but clinically relevant decrease in the rate of labor dystocia in CaCO3 group (4% vs. 11%, p=0.12). For our secondary outcomes, there was a clinically relevant, but non-statistically significant lower cesarean delivery rate in the CaCO3 group (14% vs. 22%, p=0.34). In a subgroup analysis of those who had cesarean delivery (n=50), dystocia as an indication was less likely, although not statistically significant, in the CaCO3 group (14% vs 44%, p=0.21). Use of CaCO3, when compared to the control group, did not lead to a significant difference in the total amount of oxytocin used (median 4799mU vs. 3707mU, p=0.76), blood loss (150 mL vs. 200mL, p=0.69), or postpartum hemorrhage ⩾ 1000mL (4% vs. 5.5%, p=0.91). Favorably, there were no identifiable differences in neonatal outcomes such as 5-minute Apgar (median 9 vs. 9 control group, p=0.36), respiratory support (4% vs. 14% control group, p=0.19), and Neonatal Intensive Care Unit admission (6% vs. 7.5% control group, p=0.61). The GI side effects survey revealed that most patients reported few negative GI symptoms, reporting "no" for: burping/belching (84%), heartburn (72%), bloating (96%), passing gas (70%), sour taste (96%), nausea (56%), bad breath (98%), diarrhea (100%), constipation (96%), and vomiting (82%).

Conclusion: Although there was a non-statistically significant longer induction time within the CaCO3 group, there were potentially clinically relevant decreases in labor dystocia and cesarean delivery rate. We did not identify dif-

ferences in maternal and neonatal adverse outcomes, and our GI survey revealed overall maternal tolerability. As this was a pilot, we were not powered to detect statistically significant differences. However, our study will be useful for estimating sample size for future studies, as further information is needed to detect meaningful differences regarding CaCO3 use in labor inductions.

A14 ELUCIDATING RISK FACTORS FOR CRANIOSYNOSTOSIS

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Introduction: Cranial sutures are fibrous joints between skull bones that remain flexible during infancy, allowing for further brain growth and development. Craniosynostosis, a congenital abnormality involving premature closure of cranial sutures, leads to abnormal skull shape and may result in developmental delays, sensory deficits, and neurological or respiratory dysfunction if left untreated. The prevalence of craniosynostosis is 1 in 2000 to 2500 live births and is trending upwards, although its exact cause is unknown. This study aims to elucidate risk factors associated with craniosynostosis to better understand the disorder and identify potential preventative measures.

Methods: A case-control study was designed to identify potential predisposing risk factors for developing craniosynostosis. An electronic medical records review was conducted at our University of Missouri Medical Center, a Level 1 Trauma and Regional Perinatal Center located in central Missouri, on those who received prenatal care and delivered at our facility between 6/1/22-11/1/24. Extracted data included maternal demographics, pregnancy and delivery course, perinatal ultrasound number and findings, neonatal demographics, type of craniosynostosis and course postdelivery. A 2:1 case to control methodology was utilized, with controls matched by date of birth. One male and one female infant delivered as close to the delivery time of the craniosynostosis case, with the same data extracted from our EMR, served as controls. Data were maintained in a deidentified secure RedCap databank. Comparisons between groups were made using Chi-square, Fisher's exact testing, and Mann-Whitney U testing as appropriate. Results are presented as percent, or mean +/- standard deviation as appropriate, with odds ratios and 95% confidence intervals. A $P < 0.05$ was considered statistically significant. Statistical analysis was completed using VassarStats and SPSS. IRB approval was received prior to initiation of this study.

Results: Forty-two patients were identified with nonsyndromic craniosynostosis, indicating isolated cranial suture involvement. 38.1% involved the sagittal suture, 33.3% metopic suture, 31.0% coronal suture, and 4.8% lambdoid suture. Compared to controls, patients with craniosynostosis were more likely to be born preterm (OR 2.58, 95% CI = 1.09, 6.09), and to non-white mothers (OR 6.29, 95% CI = 2.20, 17.97). Twinning was also associated with a higher risk for craniosynostosis in one of the twins although the 95% CI was very wide (OR 15.09, 95% CI = 1.75, 130.22).

There were no differences between groups with respect to patient race (cases = 65.85% white versus controls = 79.76%; P = 0.14), patient ethnicity (cases = 7.50% Hispanic or Latino versus controls = 3.61%; P = 0.39), infant sex (cases = 64.29% males versus controls = 50%; P = 0.18), primigravida versus multigravida (cases = 20.83% born to primigravida mothers versus controls = 43.37%; P = 0.08), cesarean versus vaginal delivery (cases = 55% delivered via cesarean section versus controls = 37.35%; P = 0.10), BMI greater than or equal to 30 (cases = 75% versus controls = 31.65%; P = 0.76), and/or maternal age greater than or equal to 35 years (cases = 14.29% versus controls = 14.29%; P = 1.00). Additionally, there were no differences between groups when comparing pregnancy complications including preeclampsia (cases = 21.43% versus controls = 14.29%; P = 0.45), hypertension (cases = 16.67% versus controls = 9.52%; P = 0.38), diabetes (cases = 11.90% versus controls =13.10%; P = 0.92), thyroid disease (cases = 4.76% versus controls = 10.71%; P = 0.33), polyhydramnios (cases = 7.14% versus controls = 7.14%; P = 1.00), oligohydramnios (cases = 4.76% versus controls = 1.19%; P = 0.55), tobacco use (cases = 7.14% versus controls = 10.71%; P = 0.75), and/or substance use (cases = 20.59% versus controls = 8.11% of cases; P = 0.13).

No differences were identified between groups when comparing average maternal BMI (cases = 37.27 (9.98) versus controls = 34.40 (6.95); P = 0.15), maternal age (cases = 27.32 (5.64) versus controls = 28.60 (5.98); P = 0.36), birth weight in kilograms (cases = 2.75 (1.03) versus controls = 3.16. (0.64); P = 0.15), and/or birth head circumference in centimeters (cases = 31.62 (4.95) versus controls = 33.81 (1.98); P = 0.08).

Conclusion: The study results indicate that craniosynostosis patients were more likely to be born from nonwhite mothers, have a preterm delivery, and be a member of a multiple gestation. These findings contribute to a better understanding of the risk factors associated with craniosynostosis, which may be used to assist with early diagnosis and effective intervention for affected patients. Due to the rarity of craniosynostosis, further studies with larger sample sizes are needed to more fully elucidate the risk factors for this condition and potential interventions for prevention.

A15 GESTATIONAL DIABETES AND NEONATAL HYPOGLYCEMIA RISK POST-BETAMETHASONE IN THE LATE PRETERM POPULATION: A SECONDARY ANALYSIS OF THE ALPS TRIAL

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Background: Neonatal hypoglycemia is a significant clinical concern, particularly in infants born to mothers with gestational diabetes mellitus (GDM). Betamethasone, administered antenatally to enhance fetal lung maturity in late preterm pregnancies, induces transient maternal hyperglycemia, potentially exacerbating the neonatal insulin response and subsequent risk of hypoglycemia. Corticosteroids increase maternal blood glucose levels by increasing hepatic gluconeogenesis, inhibiting glucose uptake in adipose tissue, and antagonizing insulin synthesis (Schäcke et al., Pharmacology & Therapeutics 2002). Elevated maternal blood glucose stimulates fetal pancreatic insulin secretion, predisposing neonates to hypoglycemia after birth (Arimitsu et al., Endocrine Journal 2023). The original Antenatal Late Preterm Steroids (ALPS) Trial reported reduced neonatal respiratory morbidity but noted increased neonatal hypoglycemia incidence with antenatal betamethasone administration. However, whether gestational diabetes specifically modifies this hypoglycemia risk after betamethasone exposure remains uncertain.

Objective: To determine whether gestational diabetes is associated with increased incidence of neonatal hypoglycemia following antenatal betamethasone administration during the late preterm period.

Methods: This is a secondary analysis of the ALPS Trial, a randomized, multicenter study examining neonatal outcomes following antenatal betamethasone administration between 34 weeks 0 days and 36 weeks 5 days' gestation. Inclusion criteria were limited to participants from the active treatment arm randomized to receive two betamethasone doses, 24 hours apart (initial N = 1,428). Participants lacking essential data, including prepregnancy weight (n = 36), neonatal hypoglycemia status (n = 2), maternal ethnicity (n = 3), and second dose administration status (n = 1), were excluded, leaving a final analyzed cohort of N = 1,386.

The primary outcome was neonatal hypoglycemia, defined as blood glucose levels below 40 mg/dL at any time after birth. Information about GDM diagnostic criteria or treatment was not available. Notably, patients with GDM were originally excluded from the ALPS Trial due to concerns about the potential for unblinding with corticosteroids. Eligibility criteria were later amended to enroll patients with gestational diabetes after the trial was underway. Pre-gestational diabetes was an original exclusion criterion of the trial and remained so for the duration.

Baseline clinical and maternal characteristics were compared using chi-square tests for categorical variables. Logistic regression was performed to account for confounding factors on univariate analysis: mode of delivery, race or ethnicity, primary source of medical payment for prenatal care, and indication for trial entry. The interval between randomization and delivery was analyzed to determine if subgroup analyses for betamethasone doses were warranted. Analyses for both the ALPS Trial and this secondary analysis followed intention-to-treat principles. Subgroup analysis of participants who received 1 or 2 doses of betamethasone was performed as-treated. Relative risks (RRs) with 95% confidence intervals (CIs) were calculated for unadjusted group comparisons. Adjusted odds ratios (aORs), accounting for statistically significant baseline differences ($p < 0.05$), are reported for outcomes of interest.

Results: Hypoglycemia occurred in 28.7% of neonates born to mothers with GDM and 23.4% of those born to mothers without GDM (p = 0.1422). Compared to euglycemic patients, those with GDM were more likely to have prepregnancy obesity, be Hispanic or Asian, be aged 35 or older, and have late preterm delivery due to rupture of membranes, preeclampsia or gestational hypertension, or other indications. Notably, in the parent trial, only 60.5% (n = 839) of participants received the prespecified two doses of betamethasone. Unadjusted subgroup analysis revealed nearly equal odds of hypoglycemia among neonates born to mothers with GDM who received two doses. However, women with GDM receiving only one dose of betamethasone had 82% increased odds of having a hypoglycemic neonate (OR 1.82; 95% CI: 1.06–3.14; p = 0.0303). This significant result may relate to timing, with 43% delivering the same day as randomization and 96% delivering within one day, corresponding closely with peak maternal hyperglycemia post-betamethasone (Itoh et al. Endocrine Journal 2016).

Multiple logistic regression analyses showed the adjusted odds ratio (aOR) for neonatal hypoglycemia among infants born to mothers with GDM randomized to two doses was 1.132 (95% CI: 0.75–1.68). Among infants whose mothers received a single dose, the aOR was 1.540 but was not statistically significant (95% CI: 0.83–2.79). A larger trial may be needed to detect a true effect. Conversely, mothers who received both doses had similar odds for neonatal hypoglycemia (aOR 0.8658; 95% CI: 0.48–1.50).

Conclusion: Among women receiving antenatal corticosteroids in the late preterm period, maternal GDM was not associated with an increased risk for neonatal hypoglycemia compared with euglycemic patients. These results support the practice of administering antenatal steroids in late preterm pregnancies complicated by GDM. A large randomized clinical trial is warranted to determine whether GDM patients receiving antenatal late preterm steroids are at increased risk for neonatal hypoglycemia.

A16 MATERNAL PERCEPTIONS REGARDING THE RESPIRATORY SYNCYTIAL VIRUS (RSV) VACCINE FOLLOWING FDA APPROVAL OF ABRYSVO®

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Background: Respiratory syncytial virus (RSV) is the leading cause of hospitalization in the US for infants. Pfizer's Abrysvo® RSV vaccine was approved in August 2023 for pregnant patients reaching 32-36 weeks gestational age (GA) between September and January to prevent RSV-related infant morbidity. The American College of Obstetrics and Gynecology (ACOG) published a practice advisory recommending seasonal Abrysvo® vaccination for all pregnant patients. Data on 2023 vaccination rates are available, but there is no information on how/why patients decide to obtain or refuse the Abrysvo® vaccine. Provider recommendation is a known major contributor to improve vaccine uptake in pregnant patients. However, CDC surveys assessing other vaccine acceptability rates indicate the presence of additional factors influence patient's decisions for vaccine adherence including: perceived safety or the need for the vaccine, socioeconomic status and education level. Still, these factors are unpredictably related, as vaccines differ in the way they are perceived, and we anticipate that Abrysvo® will have a unique acceptability profile. The ACOG practice advisory briefly mentions the need for personalized considerations to ensure each patient has access to Abrysvo® and includes suggested counseling techniques to fully inform patients of the importance of this vaccine. However, there are no specific guidelines to assist providers.

Study Purpose: We aimed to fill a knowledge gap that exists in the early stages of Abrysvo® implementation. These data will inform providers how to counsel patients and improve patient education regarding Abrysvo® more effectively.

Methods: This study was approved by the local Institutional Review Board (# 24-612). To assess our patient's perception of Abrysvo®, a pre-education survey was administered at prenatal visits between 28w0d to 31w6d GA. At subsequent prenatal visits, each provider counseled patients and answered questions regarding Abrysvo®. All patient discussions about Abrysvo® and vaccination status were documented in the electronic medical record (EMR). Once vaccination season ended, a follow-up postpartum survey was administered to assess potential changes in perception after education and barriers to obtaining the vaccine.

Results: A total of 49 patients completed the pre-education survey. The majority of patients were 21-25 years old (38%), followed by ages 26-30 (30%), 31-35 (16%), ⩽ 20 (10%) and 6% were between 36-40 years of age. The racial distribution of our patient population was 71.4% White, 20.4% Black, 4.1% mixed race/other and 4.1% declined to answer. Only 2.1% of patients reported Hispanic ethnicity. Most of these patients have a low socioeconomic status, indicated by a high percentage (81.6%) of Medicaid-insured patients and a low level of education, with most patients completing high school or less (40%) followed by some college courses (26%), college graduates (20%), trade school (10%) and master/doctorate (2%). Specific to RSV, 80% of the surveyed patients indicated they were previously aware of RSV, and 72% knew of the existence of the RSV vaccine for pregnant women. The majority reported hearing about Abrysvo® from healthcare providers (83.3%), with some reporting they learned about it through social media and/or the news (33.3%). When asked if they would receive Abrysvo® in pregnancy upon provider recommendation, 60% indicated they would receive the vaccine, with 22% not willing to get Abrysvo® and 18% unsure. Most patients indicated that the most important factors to consider in their decision to receive Abrysvo® were potential RSV-related health consequences to their infant (91.3%) and/or to themselves (45.7%). Those not planning to receive Abrysvo® were primarily concerned about possible side effects/safety (31.8%) and/or indicated a lack of information provided (15.9%). Patient's preferred educational method to learn more about Abrysvo® was direct provider discussion (40.4%) and/or information with links to reputable websites (25.5%), with a lower number preferring self-education (12.8%), brochures (4.3%) or videos (4.3%). In particular, 12.8% indicated they did not think that any further education would help them. At the end of the season, only 19% of the surveilled patients were documented as having received Abrysvo®. The follow-up survey identified the inconvenience of obtaining the vaccine in a timely manner as the primary barrier to Abrysvo® vaccination. Interestingly, there was a discrepancy between the vaccination status reported in the survey vs. that documented in the EMR. Indeed, 54% of the patients who reported having received Abrysvo® had no documented evidence of receiving it, suggesting this patient population has a low level of health literacy and involvement in their own health status and treatments received.

Conclusions: While 60% of the surveyed patients indicated a willingness to receive Abrysvo® upon provider recommendation and ~20% were unsure, overall, only 19% received Abrysvo® by the end of the season, suggesting the existence of additional barriers (other than low acceptability) affecting vaccination rates. Our results also indicate that the standard education delivered to these patients fell short in raising awareness regarding RSV prevention and highlight the need for personalized education strategies tailored to our vulnerable population.

A17 TRIMESTERS OF CHANGE: PELVIC FLOOR AND SEXUAL HEALTH IN COMMUNITY HOSPITAL PREGNANCY CARE

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Introduction: Pelvic floor disorders can negatively impact an individual's quality of life with disruptive signs and

symptoms, such as urinary incontinence, fecal incontinence, pelvic organ prolapse, and pelvic pain. Approximately 25% of women in the United States have at least one pelvic floor disorder, which contributes to high healthcare expenditure. Pregnancy has been associated with physical changes to the pelvic floor and may contribute to the development of pelvic floor disorders. The purpose of this study was to evaluate the perception of pelvic floor and sexual function during pregnancy using validated questionnaires with a focus on how these domains relate to one another and differ across trimesters.

Methods: This study was a cross-sectional survey that was approved by the Institutional Review Board of an academic tertiary care center in the southern United States and followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. Pregnant individuals between the ages of 18 and 45 years who presented to a community hospital for a prenatal visit were asked to complete a survey composed of demographic questions and validated questionnaires targeting pelvic floor and sexual function – the Pelvic Floor Distress Inventory-20 (PFDI-20), the Pelvic Floor Impact Questionnaire-7 (PFIQ-7), and the Female Sexual Function Index-6 (FSFI-6). Individuals who were unable to provide informed consent, incarcerated at the time of the visit, or non-English speaking were excluded. The surveys were distributed from February 25, 2025 until March 21, 2025 to achieve a target sample size of 200, which was determined a priori to provide adequate statistical power. The data were entered into the secure web application called Research Electronic Data Capture (REDCap) with no missing data noted. Statistical analysis was performed using R software version 4.3.1 and included descriptive statistics, analysis of variance (ANOVA), Pearson correlation, and multiple linear regression. A p-value of less than 0.05 was used to define statistical significance.

Results: Two hundred eligible individuals completed the survey and were included in the analysis. Most participants were between 20 and 29 years old, obese [Body mass index (BMI) >30 kg/m2], in the third trimester, multigravida (pregnant previously), multiparous (delivered previously), high school graduates, unemployed, Black, unmarried, in the lowest household income category (<$25,000), and not smokers. One-way ANOVA and Tukey post-hoc tests showed that pelvic floor function did not differ significantly across trimesters as measured by the PFDI-20 and PFIQ-7 ($p > 0.05$), whereas sexual function differed significantly across trimesters as measured by the FSFI-6 [$F(2, 197) = 4.25$, $p = 0.016$]. Furthermore, sexual function scores were significantly lower in the third trimester compared to the second (mean difference = -2.22; 95% CI: -4.38 to -0.06; $p = 0.042$). Sexual function scores were also lower in the third trimester compared to the first but not significantly (mean difference = -2.98; 95% CI: -6.02 to 0.06; $p = 0.056$), and there was no significant difference in sexual function scores between the first and second trimesters (mean difference = -0.76; 95% CI: -3.87 to 2.34; $p = 0.830$). Pearson correlation analysis demonstrated no statistically significant association between pelvic floor function and sexual function. However, the correlation between pelvic floor quality of life as measured by the PFIQ-7 and sexual function as measured by the FSFI-6 was slightly stronger ($r = -0.13$, $p = 0.06$) than the correlation between pelvic floor distress as measured by the PFDI-20 and sexual function as measured by the FSFI-6 ($r = -0.08$, $p = 0.24$). Multiple linear regression models were used to determine if there were any associations between demographic and clinical information and pelvic floor and sexual function. Overall, the models were not statistically significant for pelvic floor quality of life [$F(23, 175) = 0.95$, $p = 0.53$] and pelvic floor distress [$F(23, 175) = 1.23$, $p = 0.23$], but the model was statistically significant for sexual function [$F(23, 175) = 2.36$, $p = 0.0009$]. Being in the third trimester had a statistically significant association with lower FSFI-6 scores ($\beta = -3.72$, 95% CI: -6.16 to -1.11, $p = 0.00397$), whereas identifying as White had a statistically significant association with higher FSFI-6 scores ($\beta = 2.21$, 95% CI: 0.19 to 4.20, $p = 0.030$).

Conclusion: This study offers valuable insight on an underserved population by focusing on individuals who receive prenatal care at a resource-limited facility. Sexual function scores were lower in later pregnancy, whereas pelvic floor function scores did not change significantly across pregnancy. Notably, identifying as White was associated with higher sexual function scores than other race/ethnicity categories. Future research should involve a longitudinal approach for a detailed understanding of pelvic floor and sexual function throughout the perinatal period and the development of prevention and management strategies.

A18 WORSENING MATERNAL LABORATORY ABNORMALITIES IN PREECLAMPSIA AS PREDICTORS OF ADVERSE NEONATAL OUTCOMES

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Purpose: This study assesses neonatal outcomes among pregnant patients with preeclampsia by comparing groups based on severity of laboratory abnormalities.

Methods: A retrospective chart review was conducted on all neonates born to women with preeclampsia at a tertiary care center between 2015–2020. Preeclampsia was diagnosed according to the guidelines of the American College of Obstetricians and Gynecologists. Data from mother-infant groups were collected retrospectively from the electronic medical record (EMR) and included maternal demographics, laboratory values, delivery details, and neonatal outcomes. Maternal laboratory values assessed included liver enzymes (LE), lactate dehydrogenase (LDH),

and creatinine (Cr), which were categorized based on severity: liver enzymes were classified as >2 times the upper limit of normal (>2x ULN) vs. ⩽2x ULN, creatinine as >1.1 mg/dL vs. ⩽1.1 mg/dL, and lactate dehydrogenase as >600 U/L vs. ⩽600 U/L. Neonatal outcomes and delivery variables included gestational age (GA), birth weight, length of neonatal intensive care unit (NICU) stay, overall length of hospital stay (LOS), presence of respiratory distress syndrome (RDS), transient tachypnea of the newborn (TTN), sepsis, infant death (including stillbirths), and mode of delivery (cesarean section, vaginal, or assisted vaginal). Statistical analyses were performed to compare outcomes between groups based on maternal laboratory values, with Chi-square tests to assess differences in the incidence of RDS, TTN, sepsis, death, and mode of delivery. Independent t-tests were performed to compare GA, birth weight, and LOS between groups. These statistical analyses allowed for the evaluation of associations between maternal laboratory abnormalities and neonatal and delivery outcomes.

Results: A total of 630 mother-infant groups were included in the study, consisting of 581 singletons, 48 twin pregnancies, and one triplet pregnancy. Compared to patients with liver enzyme (LE) levels ⩽2x ULN (n = 563), neonates born to mothers with LE >2x ULN (n = 60) had significantly poorer outcomes. These neonates were born at significantly earlier gestational ages (33.9 vs. 35.8 weeks, $p < 0.0001$), had lower birth weights on average (2088.2 vs. 2533.4 grams, $p < 0.0001$), experienced longer neonatal intensive care unit (NICU) stays overall (24.8 vs. 16.0 days, $p = 0.0097$), and had a higher incidence of RDS (43% vs. 30%, $p = 0.038$). Similar trends were observed in neonates born to mothers with creatinine (Cr) levels >1.1 mg/dL (n = 58) compared to those with Cr ⩽1.1 mg/dL (n = 572). These neonates were also born at earlier gestational ages than their counterparts (33.8 vs. 35.8 weeks, $p < 0.0001$), had lower birth weights (2161.8 vs. 2525.7 grams, $p = 0.0008$), stayed in the NICU for a longer duration (23.1 vs. 16.2 days, $p = 0.045$), and had a higher incidence of RDS (45% vs. 31%, $p = 0.022$). The most pronounced differences were observed in neonates born to mothers with lactate dehydrogenase (LDH) levels >600 U/L (n = 10) compared to those with LDH ⩽600 U/L (n = 552). These neonates had the lowest gestational ages at birth (32.7 vs. 35.4 weeks, $p = 0.0085$), the lowest birth weights (1736.4 vs. 2480.0 grams, $p = 0.0035$), the longest NICU stays (40.3 vs. 16.8 days, $p = 0.0045$), and the highest incidence of RDS (73% vs. 32%, $p = 0.0039$).

Conclusions: Our study suggests that neonates born to preeclamptic mothers with worsening laboratory parameters are at increased risk of adverse neonatal outcomes, including earlier gestational age at delivery, lower birth weights, longer NICU stays, and increased incidence of RDS. Our study confirms that worsening laboratory criteria, which is a marker for preeclampsia with severe features, might be a predictor of those patients who are not candidates for expectant management, leading to worse neonatal outcomes, mostly driven by gestational age at delivery.

A19 EVALUATING THE IMPACT OF ROBOTIC-ASSISTED LAPAROSCOPIC SURGERY ON HEALTH-RELATED QUALITY OF LIFE (HRQOL) IN ENDOMETRIOSIS PATIENTS USING THE ENDOMETRIOSIS HEALTH PROFILE (EHP-30)

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Introduction: Endometriosis is a chronic gynecological condition that significantly impacts the health-related quality of life (HRQoL) of affected individuals. Characterized by the presence of endometrial-like tissue outside the uterus, endometriosis often results in debilitating pain, infertility, and a reduced quality of life. Surgical intervention, particularly robotic-assisted laparoscopic excision, has emerged as a pivotal treatment modality aimed at alleviating symptoms and improving HRQoL. However, the extent of its impact on various dimensions of patients' lives remains to be thoroughly evaluated.

This study employs the Endometriosis Health Profile (EHP-30), a validated instrument specifically designed to assess the multifaceted effects of endometriosis on HRQoL. By examining EHP-30 scores pre-operatively, at 2 weeks, and at 12-20 weeks or more post-operatively, this research aims to clarify the short- and long-term benefits of surgical intervention.

Additionally, the study investigates differences in outcomes between patients with superficial endometriosis (SE) and those with deep infiltrating endometriosis (DIE), providing a comprehensive understanding of how these subtypes respond to surgical treatment.

Materials and Methods: This prospective observational study assesses the impact of robotic-assisted laparoscopic surgery on HRQoL in women with histopathologically-confirmed endometriosis. Conducted from April 27, 2023, to the present, the study involved four major hospitals known for their expertise in managing endometriosis. Women aged 18 and older with suspected pelvic endometriosis were included, contingent on histopathological confirmation post-surgery. Exclusion criteria eliminated those without confirmed endometriosis or severe systemic diseases. The study cohort consisted of 55 women with a mean age of 33.9 years and a mean BMI of 30.38. Participants were predominantly White (67.3%), with Hispanic (18.2%) and Asian (12.7%) representation. Most were employed (80.0%), non-smokers (96.4%), and nulliparous (83.6%), with 63.6% reporting light-moderate alcohol use and 29.1% using marijuana. Chronic pelvic pain was the most common symptom (70.9%), followed by dysmenorrhea (69.1%) and dyspareunia (41.8%).

The primary outcome was the change in EHP-30 scores, which assess five domains: pain, control and powerlessness,

emotional well-being, social support, and self-image. Scores were collected pre-operatively, at 2 weeks post-op, and between 12 to 20 weeks post-op. To minimize variability, a single minimally invasive gynecologic surgeon performed all surgeries, following a standardized protocol to ensure consistency in surgical technique and outcomes. Patients were classified into SE and DIE groups based on surgical findings and histopathological reports. Power analysis using G*Power 3.1.9.6 determined a sample size of 54 for matched pairs with 95% power.

Results: A total of 90 patients were recruited, with 55 completing the study. Exclusions included 12 patients without endometriosis on pathology, 1 with an ovarian tumor, 3 with endosalpingiosis only, 4 due to surgery cancellations, and 3 who withdrew. The analysis included 28 SE and 27 DIE patients. The EHP-30 scores showed statistically significant reductions in total and individual scores at 2 weeks and 12-20 weeks post-operation ($P < 0.05$ for social support dimension at 2 weeks in the DIE subgroup, all other $P < 0.001$). A significant difference in pain was noted between DIE and SE subgroups at 12-20 weeks post-surgery ($P < 0.05$), with DIE patients experiencing higher pain levels. No significant differences were observed between subgroups in other categories or total scores at any time point.

Conclusion: The findings underscore the significant role of robotic-assisted laparoscopic excision in enhancing HRQoL for endometriosis patients. The marked improvement in EHP-30 scores post-operatively highlights the effectiveness of surgical intervention in alleviating symptoms and improving overall well-being. Data reveal that patients with DIE experience substantial relief, which is particularly significant given the often-severe symptomatology associated with this subtype. This suggests that surgical excision can effectively address the more invasive manifestations of endometriosis, offering hope for those who previously faced limited options.

Robotic-assisted laparoscopic excision significantly improves HRQoL in endometriosis patients, as measured by EHP-30, regardless of whether they have DIE or SE. Sustained improvement observed in both the short- and long-term post-operative periods indicates that the benefits of surgery are not only immediate but also persistent. This long-lasting impact is crucial, as it suggests that surgical intervention can provide a stable solution for symptom management, reducing the need for ongoing medical therapy and its associated side effects. These findings advocate for considering surgical intervention as a primary treatment option in appropriate cases, particularly for those patients who have not achieved adequate relief through medical management alone. However, pain may recur long-term, particularly in DIE patients. Continued recruitment of SE and DIE patients is necessary to further this ongoing study.

A20 MISSED CONVERSATIONS: EDUCATIONAL OPPORTUNITIES IN PELVIC FLOOR COUNSELING DURING OBSTETRIC CARE FOR MINORITY MOTHERS IN URBAN AND SUBURBAN COMMUNITIES

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Background: Pelvic floor health is a foundational component of women's reproductive well-being, particularly in the context of pregnancy, delivery, and postpartum recovery. Disorders such as urinary incontinence, pelvic organ prolapse, and peripartum musculoskeletal dysfunction are prevalent, with far-reaching implications for maternal quality of life and long-term gynecologic health. Despite the clinical importance of pelvic floor conditions, structured education regarding risk factors, prevention, and management remains conspicuously absent from routine obstetric care.

This gap in knowledge is even more pronounced among African American and minority women, who experience higher rates of adverse maternal outcomes and face systemic barriers to equitable healthcare. Prior studies have linked disparities in health education access to limited provider communication, cultural stigma, and structural inequities in care delivery. However, few investigations have focused specifically on pelvic floor health literacy within these populations.

This study aimed to address these gaps by examining pelvic floor knowledge among women of various backgrounds in both urban and suburban clinical settings.

Objectives: The primary objective of this study was to assess the level of pelvic floor health knowledge among African American and minority women of reproductive age. Secondary aims included evaluating whether demographic variables such as race/ethnicity, educational attainment, and geographic setting (urban vs. suburban) were associated with differing levels of awareness; determining whether increased formal education correlated with improved knowledge of pelvic floor risks and resources; and identifying common deficits in provider-patient communication regarding pelvic floor health. The study further sought to explore how these disparities may influence peripartum outcomes and contribute to broader patterns of inequity in maternal healthcare access and education.

Methods: A cross-sectional survey study was conducted between January and March 2024 in multiple outpatient obstetrics and gynecology clinics in both urban and suburban regions of North Louisiana. Women aged 18–49 presenting for routine or prenatal visits were invited to participate. The survey instrument included demographic questions and a 15-item awareness-based and knowledge

assessment focused on patient understanding of pelvic floor function, risk factors, and access to care.

Survey responses were anonymized and analyzed using descriptive statistics, frequency distributions, and cross-tabulations to examine associations between demographic variables and knowledge outcomes.

Results: Fifty participants completed the survey. Forty-two percent self-identified as African American, and more than 90% identified as part of a racial or ethnic minority group. Education levels ranged from less than high school to postgraduate degrees, with a majority reporting some college education.

Survey data suggested significant gaps in pelvic floor health awareness across the entire sample. Seventy-four percent of respondents were unaware of the existence or role of pelvic floor physical therapy. Similarly, 72% had not identified childbirth as a risk factor for pelvic floor dysfunction, and 60% had little to no understanding of general pelvic floor risks, including those associated with prolonged labor or assisted delivery.

Importantly, no statistically significant difference in knowledge scores was observed between urban and suburban participants, suggesting that suburban residence does not confer a protective effect in terms of pelvic health education. Furthermore, while 46% of respondents had completed some college education and 28% had a high school diploma or less, knowledge levels remained uniformly low. Even among those with higher education, understanding of pelvic floor anatomy and available treatment options was limited, indicating that formal education alone does not predict awareness of this topic.

Notably, respondents across all educational levels and locations reported minimal provider engagement and discussion of pelvic floor health during prenatal or postpartum care. Several participants indicated they had only learned about pelvic floor dysfunction informally, through social media or peer conversations, rather than from medical professionals. This trend reflects missed clinical opportunities for early intervention, especially in populations already at risk for obstetric complications. Additionally, cultural stigmas and taboos surrounding topics such as incontinence and gynecologic dysfunction may inhibit open discussion, both within clinical encounters and among peer networks.

Conclusion: This study identifies a critical and persistent deficit in pelvic floor health knowledge among African American and minority women, irrespective of geographic setting or education level. The findings challenge assumptions that suburban residence or higher educational attainment may compensate for systemic deficiencies in reproductive health education. The absence of standardized pelvic floor education in clinical encounters represents a structural failure with measurable implications for peripartum outcomes.

A21 BRIDGING THE DIVIDE: A MULTI-INSTITUTIONAL CURRICULUM TO INTEGRATE PRIVATE PRACTICE PHYSICIANS INTO ACADEMIC HEALTH SYSTEMS

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Introduction: Academic Health Systems (AHSs) face ongoing workforce shortages, and integrating physicians from private practice has emerged as a viable solution. These individuals bring a wealth of clinical experience and practice management insight that can enrich patient care, education, and research. However, few structured processes exist to facilitate this transition, and no comprehensive curriculum has been established to support onboarding and retention. A clear gap remains in the literature and in practice regarding faculty development tailored to this unique population. This project identifies the struggles and strengths of private practice physicians entering academia and presents a novel onboarding and faculty development curriculum to support a seamless, sustainable transition into AHSs.

Methods: We employed a mixed-methods approach that included an integrative literature review and a qualitative survey distributed at two geographically distinct AHSs. The literature review sought to identify evidence-based strategies for adult learning, physician onboarding, faculty development, mentorship, and academic transitions. Sources were screened based on relevance to mid- or late-career physicians, particularly those without prior academic affiliation. Key themes extracted from the literature included mentorship models, time management strategies, institutional navigation, and cultural assimilation into academia.

Simultaneously, we developed a 16-question open-ended survey to assess the lived experiences of physicians transitioning from private practice to academia. The survey was distributed to 45 participants (20 from private practice, 25 academic physicians) and designed to elicit responses around common barriers and facilitators. Questions focused on perceptions of teaching, expectations of academic roles, barriers to productivity, and unmet institutional support needs.

Survey data were analyzed using thematic content analysis. Themes from both the literature and the qualitative survey informed the development of two complementary curricula: one targeted to academic leadership and faculty, and the other directed at private physicians entering academia.

Results: Survey findings revealed several high-frequency challenges reported by private practice physicians. The most prevalent concerns were time management difficulties, unclear institutional expectations, diminished clinical efficiency due to teaching obligations, unfamiliarity

with academic promotion criteria, and lack of mentorship. These respondents consistently emphasized the need for practical guidance, structured support, and clarity around faculty roles and expectations. Based on the results, two constructs were devised. The first was an Onboarding Curriculum for Private Physicians and another Faculty Development Curriculum for Academic Mentors targets existing faculty and leaders.

The dual-construct ensures that both parties in the integration process are supported, with content aligned to their respective roles and responsibilities. The curricula also incorporate assessment tools and feedback loops to allow for adaptation over time.

Conclusion: This project presents a comprehensive framework to integrate private practice physicians into academic settings, addressing both logistical barriers (such as compensation, time, onboarding systems) and cultural challenges (such as role clarity, mentorship, academic identity). By supporting both private physicians and academic mentors through parallel curricula, this model fosters mutual understanding, collaboration, and long-term engagement.

The framework is positioned to enhance faculty satisfaction, reduce burnout during the transition period, and strengthen institutional missions by unlocking the contributions of this underutilized workforce. Its implementation may further serve to diversify academic pathways and promote a more inclusive definition of scholarly contribution.

Although this work synthesizes best practices with firsthand perspectives, its primary limitation is that the curriculum has not yet been piloted. Future research should focus on deploying this framework across multiple institutions and measuring its impact on faculty retention, academic productivity, and learner outcomes. Institutional investment in structured onboarding and faculty development for private physicians is not only timely—it is essential to sustaining and growing the academic healthcare workforce.

A22 MANAGEMENT AND OUTCOMES OF MATERNAL ANEMIA IN THE THIRD TRIMESTER: A RETROSPECTIVE COHORT STUDY

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This single center retrospective cohort study of obstetrical patients sought to investigate the potential improvement in maternal and/or fetal outcomes based on management of maternal anemia in the third trimester with intravenous versus oral iron supplementation. The primary endpoint was the rate of preterm delivery with secondary outpoints being fetal growth restriction (FGR) and postpartum Apgar scores. A higher 1-minute Apgar score among the oral iron group relative to the intravenous iron group (7.94 vs. 7.23, p = 0.033) was found to be statistically significant. Additionally, 12.1% of patients with an oral iron prescription were found to have FGR relative to the 6.2% of patients without an oral iron prescription (p = 0.009). Overall, this retrospective cohort study was underpowered in the intravenous iron arm. Future studies will be needed to build off this body of data in order to fully and adequately investigate the effects of the route of iron supplementation on maternal and/or fetal outcomes in pregnancy.

Introduction: Maternal anemia affects approximately one in three pregnant mothers in the United States and is known to be associated with significant maternal complications as well as fetal morbidities including premature delivery and fetal growth. Multiple studies have established these associations but few studies evaluate the effects on the rates of both maternal and fetal complications with treatment via antepartum intravenous iron infusions. This study seeks to analyze the effect of antepartum treatment of significant maternal anemia with intravenous iron on the rate of premature delivery.

Methods: A retrospective cohort study was undertaken by evaluating the electronic medical records for obstetrical patients at Ochsner LSU Shreveport St. Mary's Campus who delivered between January 1, 2021 through June 30, 2024; specifically, those patients who had established with an obstetrical provider at Ochsner LSU Shreveport and were found to have a hemoglobin of ⩽10 between 27 0/7 - 31 6/7 weeks. Other inclusion criteria include age ⩾18 years old and ⩽50 years old with a singleton pregnancy with well-established gestational dating per ACOG guidelines.

Patients were excluded from the study included those with prior history of cesarean delivery, those with diagnoses of Sickle Cell Disease or Congestive Heart Failure, those patients with known or suspected fetal anomalies, and those who were diagnosed with FGR prior to 27 0/7 weeks.

Retrospective chart review was used to analyze the electronic medical records of those patients who met study criteria to evaluate treatment of significant maternal anemia with oral versus intravenous iron supplementation. Treatment strategies were then analyzed against resultant delivery sequelae, with the primary endpoint being differences in rates of all cause preterm delivery. Secondary endpoints included indication for preterm delivery, rates of FGR, postpartum Apgar scores, need for maternal postpartum blood transfusion, and NICU admission/duration of admission. Chi-squared testing was employed for evaluation of categorical data, while two-sided independent-samples t-testing was used to evaluate the numerical data.

Results: An independent-samples t-test was conducted to compare the 1-, 5-, and 10-minute Apgar scores at time of delivery for both the IV iron and PO iron groups. There was no significant difference for the 5-minute Apgar scores between IV iron (M = 8.69, SD = 0.832) and PO iron (M = 8.85, SD = 0.650; t (386) = -1.104, p = 0.276, two-tailed). The magnitude of the differences in the means (mean difference

–0.160, 95% CI: -0.453 to 0.133) was very small. There were no 10-minute Apgar scores for patients who had received IV iron, so direct comparison of the 10-minute Apgar between groups was not possible. There was, however, a significantly higher 1-minute Apgar score in the PO iron group (M = 7.94, SD = 1.214) relative to the IV iron group (M = 7.23, SD 1.864; t (386) = -2.212, p = 0.033, two-sided).

A chi-square test of independence was performed to examine the relation between having been prescribed PO iron and FGR. The relation between these variables was significant, X2 (2, N = 386) = 9.342, p = 0.009. This demonstrates a higher rate of FGR in those patients with a PO iron prescription relative to those without.

Discussion/Conclusion: Although based on our current data analysis there was no significant positive value to IV iron relative to PO, this retrospective cohort study was overall underpowered in the intravenous iron arm. Based on an a priori g-power analysis, this study would require 19 additional patients in the IV iron arm in order to achieve 80% power.

The significance of the increased rate of FGR in those patients with a PO iron prescription relative to those without was not fully evaluated based on severity of maternal anemia or presence of anemia prior to the third trimester. As well as the addition of more patients to the IV iron group, further study is needed to delineate the effects of profound anemia in the organogenesis relative to what could merely represent a dilutional anemia of the third trimester. Further analysis is already underway into whether rates of delivery secondary to equivocal fetal testing were significantly different with IV versus PO iron.

A23 NAVIGATING DUAL OBSTETRIC RISKS: INTRAUTERINE TRANSFUSION FOR RH D ALLOIMMUNIZATION IN THE SETTING OF PPROM

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Purpose: To describe the successful use of percutaneous umbilical blood sampling (PUBS) and intrauterine transfusion (IUT) for fetal anemia in a Rh D-alloimmunized pregnancy complicated by preterm premature rupture of membranes (PPROM), highlighting a rare but feasible therapeutic intervention in a high-risk obstetric setting.

Introduction: Hemolytic disease of the fetus and newborn, primarily due to Rh D alloimmunization, remains a significant cause of fetal anemia and perinatal morbidity. Management typically includes close fetal surveillance with middle cerebral artery peak systolic velocity (MCA-PSV) Doppler measurements, and, when indicated, intrauterine transfusion. While IUT is well-established, its use in pregnancies complicated by PPROM is exceedingly rare due to increased risks of infection, preterm labor, and procedural complications. This case represents the only known reported instance of successful PUBS and IUT in a pregnancy affected by both Rh alloimmunization and PPROM, allowing for safe prolongation of gestation.

Methods: Case Report.

Results: A 38-year-old G10P2162 woman presented at 29 3/7 weeks gestation with confirmed PPROM. Her pregnancy was complicated by Rh D alloimmunization, with an Anti-D antibody titer of 1:64 and serial MCA-PSV Dopplers demonstrating progressive elevation, reaching 1.7 MoM. A diagnosis of fetal anemia was suspected. The patient was counseled extensively by the Maternal-Fetal Medicine team regarding the risks and benefits of intervention and consented to undergo PUBS and IUT at 30 5/7 weeks.

Under spinal anesthesia and continuous ultrasonographic guidance, a 20-gauge needle was inserted into an accessible portion of the umbilical vein. Fetal blood sampling confirmed anemia (hematocrit 30%, macrocytic indices). A total of 30 mL of O Rh-negative, CMV-negative, Kell-negative, buffy coat-poor packed red blood cells was transfused without complication. Streaming of transfused blood into the umbilical circulation was confirmed via color Doppler.

Postprocedural evaluation was reassuring and a normalization of the MCA doppler value was encountered within the week at 1.02 MOM. Throughout the rest of her pregnancy course, the patient was monitored daily and received frequent fetal assessments. The MCA doppler values never exceeded critical values (1.55 MoM) prior to the spontaneous onset of labor.

The patient subsequently delivered at 33 2/7 weeks via repeat cesarean section with bilateral tubal ligation due to preterm labor and malpresentation. Neonatal Apgar scores were 4 at 1 minute, 6 at 5 minutes, and 8 at 10 minutes with initial neonatal hemoglobin/hematocrit of 12.7/39.2. The patient's surgery was uncomplicated, and neonate subsequently was admitted to the Neonatal Intensive Care Unit (NICU). The neonate remained in the NICU for 12 days prior to discharge during which time her total bilirubin was frequently trended. Total bilirubin peaked at 16.4 on postpartum day 5, but was adequately treated with phototherapy. The neonate did not require transfusion but did receive a single dose of IVIG. She was discharged from the NICU 12 days after delivery with no significant sequelae. Postoperatively, the patient remained stable and received routine postpartum care throughout her admission prior to being discharged on postpartum day 4.

Conclusion: This case demonstrates that intrauterine transfusion via PUBS is technically feasible and clinically effective even in the setting of PPROM. It reinforces the importance of vigilant fetal surveillance in alloimmunized pregnancies and the value of timely intervention to mitigate the risks of severe anemia. The decision to proceed with transfusion must be individualized, balancing the risk of preterm labor or infection against the morbidity and mortality of untreated fetal anemia. A multidisciplinary approach, including MFM, neonatology, anesthesiology, and

transfusion services, is essential for optimizing maternal and fetal outcomes in such complex scenarios. This case also provides novel clinical insights into a scarcely reported situation and supports the role of PUBS/IUT in prolonging gestation and improving neonatal outcomes, even under compromised membrane conditions.

A24 THE RELATIONSHIP BETWEEN BASELINE DEPRESSION, PERCEIVED STRESS AND PREGNANCY EXPERIENCES: THE ROLE OF PHYSICAL ACTIVITY

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Objective: To evaluate whether perceived stress and baseline depression predict the intensity and frequency of pregnancy-specific experiences, and to assess whether physical activity moderate these relationships. The study also explores the role of demographic factors—particularly age and education—in shaping maternal mental health outcomes.

Study Design: This study is a secondary analysis using data from Hoosier Mom Cohort (HMC), a pregnancy cohort of individuals with singleton gestation enrolled at < 20 weeks. A total of 411 participants were recruited, and data from 391 participants were included in this analysis. Baseline depression was assessed by Edinburgh Postnatal Depression Scale (EPDS) at Visit 1 (<20 weeks gestation), and perceived stress was measured at Visit 1 and Visit 2 using Perceived Stress Scale (PSS), prior to delivery. Pregnancy experiences, the main outcome was collected at Visit 2 using Pregnancy Experiences Scale (PES), which provided hassles-to-uplift ratios for both intensity and frequency. Physical activity was measured at Visit 1 and Visit 2 and converted into metabolic equivalents (METs). MET values were dichotomized at recommendation levels (⩾150 min/week = active). Linear regression models analyzed the associations between EPDS, PSS and PES outcomes. An interaction term was included to explore the moderation effect of physical activity.

Results: Participants with high perceived stress scores (PSS ⩾14) at Visit 1 were significantly younger (28.7 vs 30.2 years, $p = 0.006$), more likely to have lower educational attainment (high school or less, $p < 0.0001$) and reported more intense negative pregnancy experiences (PES intensity ratio: 0.81 vs 0.62, $p < 0.0001$). Although the frequency ratio of negative pregnancy experiences seemed higher in high-stress group (0.86 vs 0.67), the differences were not statistically significant (p=0.35). Participants with high stress levels at Visit 1 were also more likely to meet physical activity guidelines ($p = 0.03$). Similarly, participants with high depression scores (EPDS ⩾10) at Visit 1 were significantly younger (28.2 vs 29.8 years, $p = 0.03$), less likely to have a college degree ($p = 0.0001$) and reported more intense ($p < 0.0001$) and frequent ($p = 0.009$) negative pregnancy experiences. No significant differences in activity level were found between EPDS groups.

In adjusted regression models, perceived stress at Visit 2 remained associated with negative pregnancy experiences (intensity ratio: $\beta = 0.010$, $p = 0.003$; frequency ratio: $\beta = -0.017$, $p = 0.0001$).

A significant interaction effect was observed between perceived stress and physical activity at Visit 2. Individuals reporting higher physical activity who also reported high stress experienced significantly more intense ($\beta = 0.029$, $p = 0.0007$) and frequent ($\beta = 0.040$, $p = 0.006$) negative experiences during pregnancy, compared to those with lower physical activity (intensity: $\beta = 0.013$, $p < 0.0001$; frequency: $\beta = 0.017$, $p < 0.0001$). This relationship was visualized in an interaction plot, where the slope of perceived stress predicting PES outcomes was steeper in the physically activity group (0.029 vs 0.013, p=0.04)—highlighting that under high stress, physical activity may amplify rather than buffer the intensity and frequency of negative pregnancy-related experiences.

Conclusion: Perceived stress is a robust and consistent predictor of pregnancy-specific hassles and uplifts. While physical activity is typically considered as a benefit to overall health, our findings suggest that under high stress conditions, it may amplify perceived hassles during pregnancy. These results underline the need to integrate targeted stress management strategies to enhance maternal mental health outcomes during pregnancy.

A25 ASSESSING THE FEASIBILITY OF IDENTIFYING EARLY-ONSET PRE-ECLAMPSIA SAMPLES USING A CENTRALIZED BIOBANK DIRECTORY

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Objective: The Collaborative Online Perinatal & Pediatric Repository (COPPER), supported by the NICHD Maternal and Pediatric Precision in Therapeutics (MPRINT) initiative, functions as a centralized directory of pregnancy and pediatric biobanks. Biobanks in the directory include a wide range of sample types and data, enabling a broad spectrum of research inquiries. This feasibility exercise aimed to evaluate whether a hypothetical study to evaluate biomarkers for early-onset preeclampsia with severe features could be facilitated by the COPPER database. The objective was to use the database to identify the number of qualifying biospecimens across COPPER-linked repositories.

Study Design: We contacted coordinators of the 17 current COPPER biobanks and requested information on avail-

able biospecimens from participants who (1) had plasma or serum collected before 16 weeks' gestation and (2) were diagnosed and/or delivered by 32 weeks with preeclampsia with severe features. They were instructed to exclude anyone with chronic hypertension at baseline. No physical specimens or participant specific information were requested, only information on the number of samples that could be available and basic cohort characteristics.

Results: Of the 17 biobanks contacted, 10 did not meet eligibility criteria based on specimen type or clinical characteristics. Among the remaining 7, five (71%) provided data. One biobank reported limited sample availability due to prior use in another project.

In total, up to 112 cases of early-onset preeclampsia with early gestation biospecimens were identified across the five responding biobanks. Nearly equal amounts of plasma and serum samples could be available. Only one of the responding biobanks was NIH funded and in the NICHD Data and Specimen Hub (DASH).

Conclusion: Our feasibility assessment demonstrated that most qualifying biobanks within the COPPER directory were responsive and willing to share biospecimen data. If researchers were in need of biospecimens, the COPPER resource can provide an additional source for specimens, in addition to other data and specimen repositories such as DASH. For uncommon conditions, single studies are often not sufficient to obtain enough early pregnancy biospecimens, necessitating collaborative ways to obtain enough samples to have meaningful power. In this exploration, the identification of up to 112 potential cases of early-onset preeclampsia with severe features #could substantially enhance the statistical power of biomarker prediction studies targeting this high-risk but relatively uncommon condition. While COPPER does not store or broker biospecimens, it offers a streamlined way for researchers to locate relevant biospecimen sources for maternal and child health studies. These results support COPPER's value in connecting researchers to biospecimens and data as a tool for accelerating perinatal and pediatric translational research.

A26 DOES MATERNAL SMOKING AFFECT THE EFFICACY OF ANTENATAL BETAMETHASONE IN REDUCING RESPIRATORY DISTRESS SYNDROME? A SECONDARY ANALYSIS OF THE ANTENATAL LATE PRETERM STEROIDS (ALPS) TRIAL

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Background: The Antenatal Late Preterm Steroids (ALPS) Trial demonstrated that antenatal betamethasone reduces respiratory morbidity among infants delivered between 34 0/7 and 36 5/7 weeks of gestation. Maternal smoking is a known risk factor for adverse neonatal outcomes; paradoxically, some studies report lower rates of respiratory distress syndrome (RDS) among very preterm infants born to smokers, possibly due to accelerated fetal lung maturation (Curet et al. AJOG 1983). Proposed mechanisms include increased cortisol in amniotic fluid promoting surfactant production, nicotine-induced structural and functional lung changes via nicotinic acetylcholine receptors, and enhanced surfactant gene expression (Rehan et al. Lung 2009). The EPIPAGE study noted reduced antenatal steroid benefits among smokers delivering between 27–32 weeks' gestation (Burguet et al. ADC Fetal Neonatal Ed 2005). Late preterm infants inherently have lower RDS rates compared to very preterm infants, with gestational age remaining the primary predictor of respiratory outcomes (Lorenzo et al. Neonatology 2021). Whether maternal smoking modifies the respiratory benefit of betamethasone in late preterm newborns remains unclear.

Objective: To determine whether maternal smoking during pregnancy affects the efficacy of antenatal betamethasone in reducing a composite of respiratory distress syndrome (RDS), transient tachypnea of the newborn (TTN), and apnea in late preterm infants.

Methods: This secondary analysis was limited to participants randomized to the active treatment arm (N=1,428) of the ALPS Trial. Seven participants were excluded due to missing data on neonatal resuscitation (N=1,421). All participants were assigned to receive two intramuscular injections containing 12mg of betamethasone 24 hours apart. Analyses for both the ALPS Trial and this secondary analysis were performed according to the intention-to-treat principle. Maternal smoking status was determined at enrollment and defined as any cigarette use during pregnancy; frequency and amount were not recorded.

The primary respiratory outcome was a composite of neonatal respiratory morbidity: RDS, TTN, and apnea. RDS was defined as the presence of clinical signs of respiratory distress (tachypnea, retractions, flaring, grunting, or cyanosis), with a requirement for supplemental oxygen with a FiO_2>0.21 and a chest radiograph showing hypoaeration and reticulogranular infiltrates. TTN was diagnosed when tachypnea occurred in the absence of chest radiography or with a radiograph that was normal or showed signs of increased perihilar interstitial markings and resolved within 72 hours.

Secondary outcomes included a composite of CPAP or high-flow nasal cannula (HFNC) use for ⩾2 hours, inspired oxygen ⩾30% for ⩾4 hours, mechanical ventilation (MV), or extracorporeal membrane oxygenation (ECMO) within 72 hours after birth; and the need for neonatal resuscitation within the first 30 minutes of life, defined as the use of blow-by oxygen, cannula, oxyhood, mask, bag-mask ventilation, CPAP, intubation, chest compressions, or administration of cardiac medications.

Baseline clinical and maternal characteristics were compared using chi-square tests for categorical variables. Logistic regression was performed to account for confounding factors identified on univariate analysis: mode of delivery,

maternal age, race or ethnicity, marital status, and primary source of medical payment for prenatal care. Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated for unadjusted group comparisons. Adjusted odds ratios (aORs) were derived using multiple logistic regression.

Results: Compared to non-smokers, smokers were more likely to deliver via cesarean, be Caucasian or African American, under age 35, unmarried or not living with a partner, and use government-assisted health insurance. The primary composite respiratory outcome occurred in 14.4% of neonates born to smokers and 13.9% of those born to non-smokers. After adjusting for potential confounders, smoking was not associated with increased rates of RDS, TTN, or apnea in late preterm infants (aOR 1.04; 95% CI:0.65–1.62).

The secondary outcome of a composite of CPAP or high-flow nasal cannula (HFNC) use for ⩾2 hours, inspired oxygen ⩾30% for ⩾4 hours, mechanical ventilation (MV), or extracorporeal membrane oxygenation (ECMO) within 72 hours after birth occurred in 10.4% of neonates born to smokers and 11.8% of those born to non-smokers. After logistic regression, maternal smoking did not increase these risks (aOR 0.82; 95% CI:0.47–1.35). Resuscitation within the first 30 minutes of life occurred in 22.3% of neonates born to smokers and 21.4% of those born to non-smokers. Similarly, maternal smoking was not significantly associated with receiving any resuscitative intervention within 30 minutes of birth, including blow-by oxygen, oxygen by cannula/oxyhood/mask, bag-mask ventilation, CPAP, intubation, chest compressions, or cardiac medications (aOR 1.00; 95% CI:0.68–1.45).

Conclusion: In this secondary analysis of the ALPS Trial, maternal smoking during pregnancy was not significantly associated with a composite of neonatal morbidity, including RDS, TTN, apnea, or the need for neonatal resuscitation after antenatal betamethasone. Although prior studies suggest smoking may accelerate fetal lung maturation, it did not appear to alter the protective effect of corticosteroids in this late preterm infant population.

A27 OUTCOMES IN EXPECTANT MANAGEMENT FOR PATIENTS WITH PREECLAMPSIA WITH SEVERE FEATURES

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Purpose: This study aims to evaluate the outcomes of expectant management of preeclampsia with severe features compared to immediate delivery.

Methods: Immediate delivery included anyone at or before steroid benefit (<48 hours) and those managed expectantly (> 48 hours). Retrospective chart review was conducted to identify patients diagnosed with preeclampsia with severe features at a large urban medical center from 2014 to 2020. Patients diagnosed after 34 weeks gestational age were excluded, as ACOG guidelines universally recommend delivery over expectant management for those individuals. Demographic data was collected including age, race, parity, marital status, and insurance type. Preeclampsia labs on admission were also collected. Hospital stays were reviewed to determine maximum blood pressures between admission and delivery, days between diagnosis and delivery, gestational age, and whether patients were delivered vaginally or by cesarean. Postpartum blood pressure values were collected at discharge, one week, six weeks, and one year postpartum. Documentation of antihypertensive prescriptions at discharge and follow-up visits was also reviewed.

Chi-squared or Fisher's exact test was used to compare categorical variables while t test was used for continuous variables. Data were log transformed to meet parametric assumptions and geometric mean (GM) was reported. A two-sided p-value<0.05 was used for the term of statistically significant. SAS 9.4 (SAS Institute Inc., Cary, NC) was used for all the data analysis.

Results: A total of 149 patients met the inclusion criteria, with 48.3% (n=72) delivering within 48 hours, and the remaining 51.7% (n=77) delivering beyond 48 hours. Mean duration of expectant management was 9.96 days (range 3 - 77 days). There was a significant difference between groups with regard to parity, with nulliparous patients more likely to be in the expectant management group compared to multiparous patients (58.4% vs 41.7%, p=0.045). Additionally, patients delivered within 48 hours had a higher ALT (GM 25.81) and AST (GM 33.13) on admission when compared to others in expectant management group (with GM ALT 17.75 and AST 24.76). The differences were significant with p=0.019 and 0.025, respectively.

There was no significant difference between groups with regard to race (p=0.63), maternal age (p=0.69), marital status (p=0.66), or insurance type (p=0.49). Gestational age at delivery and mode of delivery were also comparable between groups (p=0.14 and p=0.42, respectively). Postpartum blood pressure assessments at one week, six weeks, and one year showed no significant differences between groups. Similarly, readmission rates were not significantly different between the two groups (6.94% vs 5.19% for expectant management, p=0.74).

Conclusion: Expectant management of preeclampsia with severe features lasted on average 8.95 days longer than immediate delivery. Despite this, there were not differences in mode of delivery, postpartum blood pressures, or adverse maternal outcomes. Notably, demographic factors such as race, age, marital status, and insurance type did not influence clinical outcomes, indicating that expectant management can be feasible across diverse patient populations. Given that delaying delivery did not result in worse long-term maternal outcomes, these findings support the potential for individualized management strategies in patients with severe preeclampsia. Further research is needed to refine expectant management protocols and assess neonatal outcomes to ensure optimal care for both mother and baby.

A28 ASSESSMENT OF A 'MEDS-TO-BEDS' APPROACH TO IMPROVE HYPERTENSIVE CONTROL IN THE POSTPARTUM PERIOD

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Background: Hypertensive disorders of pregnancy are one of the leading causes of maternal morbidity and mortality worldwide. They are also the leading cause of hospital readmission in the postpartum period. At the time of hospital discharge, various barriers prevent women from receiving anti-hypertensive medication. These include, but are not limited to, child-care needs and availability of transportation. The 'Meds-to-Beds' initiative helps overcome these barriers by ensuring that patients receive their prescription medications prior to leaving the hospital. Although Meds-to-Beds programs have been implemented to improve disease control and reduce readmission rates in other specialties, there is a lack of data regarding its use for postpartum discharge in obstetrics. We hypothesized that implementation of an educational intervention to train Obstetrics & Gynecology (Ob/Gyn) resident physicians in the utilization of a Meds-to Beds protocol to provide anti-hypertensive medications prior to discharge from labor and delivery (L & D) will lead to: 1) an increase Meds-to-Beds utilization and 2) fewer postpartum readmissions for poorly controlled hypertension.

Purpose Statement/Objective: Increase Meds-to-Beds utilization for anti-hypertensive medications at a university-affiliated hospital L&D unit and assess the impact of this intervention on postpartum hypertensive control.

Methods: This study was approved by the local Institutional Review Board under protocol IRB #23-396. In preparation for this study, the frequency of Meds-to-Beds utilization for anti-hypertensive medications at our L&D unit in the year 2022 was determined. Baseline demographic information was collected as well as the frequency of postpartum readmission and clinic follow up. The Department of Ob/Gyn residents were then informed about the Meds-to-Beds service during weekly educational conferences. Following resident education, post-intervention data was collected from 8/12/2024 – 02/10/2025. These data included the frequency of Meds-to-Beds utilization for anti-hypertensive medications, demographic information, postpartum readmission rates and the frequency of clinic follow-up. Inclusion criteria were those patients that delivered at our university-affiliated hospital who were prescribed a new anti-hypertensive medication or a new dose of anti-hypertensive medication upon hospital discharge. Those discharged from the hospital on a weekend or major holiday when the hospital's outpatient pharmacy is closed, as well as non-English speakers were excluded from the study. Continuous variables were summarized as means ± S.E.M. and categorical variables were reported as frequencies (percentages). The pre- and post-intervention categorical variables were compared using the chi-squared test.

Results: 435 patients met the study inclusion criteria. We excluded 131 patients who were discharged on weekends and holidays and 4 non-English speakers. Ultimately, 300 records were analyzed—213 baseline records from 2022 and 87 post-intervention records. When demographics were compared, type of insurance, age, parity and tobacco use were not significantly different before vs. after the educational intervention. The percent of new anti-hypertensive drugs prescribed with Meds-to-Beds was significantly higher post-intervention compared to pre-intervention (38% vs. 7%, respectively; p<.0001). The percent of new doses of existing anti-hypertensive drugs prescribed with Meds-to-Beds was significantly higher post-intervention compared to pre-intervention (42% vs. 12%, respectively; p<.0001). However, readmission within 30 days was not different between pre- and post-intervention (7% vs. 8%, respectively; p=0.762).

Conclusions: Ob/Gyn resident education resulted in a significant improvement in the utilization of Meds-to-Beds for new anti-hypertensive medications and new doses of existing anti-hypertensives. The 30-day readmission rate remained unchanged. Despite this improvement in Meds-to-Beds utilization (currently at 40%), further improvements can be made by making Meds-to-Beds the default route of prescribing any medications at the time of hospital discharge in the electronic medical record. In addition, increased patient awareness during the prenatal period and nursing education can further increase utilization. With continued Meds-to-Beds utilization, we hope to demonstrate improved postpartum hypertensive control through fewer readmissions and better medication adherence.

A29 FIRST TRIMESTER UTERINE ARTERY DOPPLER SCREENING FOR PREECLAMPSIA

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Background: Several screening strategies have been proposed to identify patients in early pregnancy at increased risk of preeclampsia who may benefit from low dose aspirin (LDA) to reduce their risk. One approach is risk-stratification based on patient-level risk factors that can be identified in the first trimester without assessment of biomarkers. This risk factor-based approach is the preferred approach in the US, with low dose aspirin 81 mg daily advised for those with identified risk factors prior to 16 weeks of gestation [Recommendation supported by American College of Ob-

stetricians and Gynecologists (ACOG), Society of Maternal-Fetal Medicine (SMFM) and United States Preventive Services Task Force (USPSTF); ACOG committee opinion #743]. In 2017 the Aspirin for Evidence-Based Preeclampsia Prevention (ASPRE) trial reported results utilizing a screening algorithm including first-trimester serum markers, such as placental growth factor and pregnancy-associated plasma protein-A, as well as uterine artery Doppler to identify high-risk patients. Subsequently, societies such as the Fetal Medicine Foundation (FMF) and International Society of Ultrasound in Obstetrics and Gynecology (ISUOG) endorsed a screening algorithm including serum and ultrasound biomarkers. As these laboratory screens have limited availability in the US, this combined screening approach utilizing serum and ultrasound-based biomarkers has not been adopted widely in the US. Further, the efficacy of utilizing uterine artery Doppler alone as an independent biomarker approach to identify preeclampsia risk is unclear.

Objective: To quantify the impact of utilizing first trimester uterine artery Doppler as a screening approach to identify patients at risk of preeclampsia.

Study Design: At the study institution, all patients underwent first trimester ultrasound at 11-14 weeks, which included uterine artery Doppler (utAD) as a preeclampsia screening approach. Mean pulsatility index of >90th percentile identified those at high-risk, and they were advised to consider LDA for preeclampsia prevention. Medical records were reviewed over one year, 4/1/2024-3/31/2025, to ascertain the proportion of those with abnormal utAD who received LDA (compliance). We performed a retrospective cohort study quantifying the proportion of those with abnormal utAD (U/S strategy) who would have been identified based on the ACOG recommended risk-factor based strategy (RF strategy). Based on these factors, the resultant number of patients identified by U/S strategy and cases of preeclampsia prevented utilizing U/S strategy over RF strategy were estimated.

Results: During the study period, a total of 2,426 patients underwent utAD screening during the first trimester. Of those, 221 (9.1%) had abnormal utAD. Of those with abnormal utAD, 153/221 (69%) received LDA and 68/172 (31%) did not, despite LDA being recommended in nearly all cases.

Over two-thirds of those with abnormal utAD, 156/221 (71%) had indications for LDA based on RF strategy, and would have been identified as at-risk without undergoing utAD. Of those, over three-quarters, 118/156 (76.3%), received LDA. Just over one quarter, 65/221 (29%), screened positive by U/S strategy (abnormal utAD) alone, and would not have screened positive based on RF strategy. Of those who screened positive by U/S strategy alone, only 35/65 (54%) received LDA.

In summary, use of a first trimester U/S screening approach rather than RF approach identified only an additional 35/2426 (1.4%) patients per year who received LDA.

Using assumptions from prior published studies that 4.3% of high-risk patients who screen positive with utAD and do not receive LDA will develop preeclampsia, 1.5 of the 35 patients identified by U/S screening alone in our cohort would go on to develop preeclampsia if LDA was not given. Assuming that LDA results in as high as 62% reduction in preeclampsia risk, less than one case of preeclampsia per year would be prevented with the universal U/S uterine artery Doppler screening strategy over a RF based approach.

Conclusion: A first trimester preeclampsia U/S screening strategy using uterine artery Doppler has minimal benefit over screening based on the ACOG recommended risk-factor based screening approach, identifying less than one preventable case of preeclampsia per year among a population of nearly 2,500 screened.

A30 PANDEMIC-RELATED INCREASES IN CHRONIC HYPERTENSION AND SUPERIMPOSED PREECLAMPSIA IN PREGNANCY

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Background: Pregnancy during the COVID-19 pandemic was associated with significant increases in psychosocial stress and mood disorders, which have been implicated in the pathway to hypertensive disorders of pregnancy (HDP). We investigated whether COVID-19 pandemic exposure was associated with an increased prevalence of HDP.

Study Design and Methods: This study was a secondary analysis of the Stress, Pregnancy, and Health (SPAH) prospective cohort trial. The SPAH study recruited participants from March 2018 through August 2022. Exposure to the COVID-19 pandemic was defined based on the timing of study participation and delivery relative to the onset of the pandemic in the United States. Unexposed participants completed the mid-pregnancy study survey and delivered before December 2019. Exposed participants completed the mid-pregnancy study survey and delivered on or after March 15, 2020, aligning with the initial peak in COVID-19 cases and related healthcare disruptions. HDP included chronic hypertension (HTN) with or without superimposed preeclampsia (PE), gestational HTN, and preeclampsia or eclampsia (PE). Infection during pregnancy with the SARS-COV-2 virus, indicated by a positive test result in the medical record, was also collected, and HDP prevalence was evaluated for this group. All models used logistic regression to model HDP prevalence as a function of pandemic or viral exposure, adjusted for age, race/ethnicity, socioeconomic disadvantage, and body mass index. Socioeconomic disadvantage was defined as a count (0–5) of five

indicators: low income (IPR < 2.0), limited savings, receipt of public assistance, low household education, and current unemployment, with higher values indicating greater disadvantage. All analyses were conducted in SAS, and $p < 0.05$ denoted statistical significance.

Results: The sample included 569 participants, with 214 (37.6%) unexposed and 355 (62.4%) exposed to the pandemic. The sample had a mean age of 33.2 years (SD 5.6), a BMI of 31.0 (SD 7.9), and was majority white race (65.4%), followed by Hispanic ethnicity (24.4%), then Black race (19.0%). 57 participants were identified as infected with the SARS-COV-2 virus during pregnancy. Overall, 97 participants (17.1%) were diagnosed with any form of HDP. Specifically, 49 had chronic HTN, 40 had gestational HTN, 57 had preeclampsia or eclampsia, and 20 had chronic HTN with superimposed PE.

The prevalence of any HDP in those exposed to the COVID-19 pandemic (n=64, 18.0%) was similar to the prevalence of any HDP in those unexposed (n=33, 15.4%). The results demonstrated no significant association between COVID-19 pandemic exposure and the occurrence of any HDP ($\chi^2 = 0.71$, df = 1, $p = 0.399$). However, we observed a significant association between pandemic exposure and chronic HTN ($\chi^2 = 5.16$, df = 1, $p = 0.023$). In the adjusted linear regression model, individuals exposed to the pandemic had 2.35 times greater odds of developing chronic HTN compared to those unexposed to the pandemic (95% CI: 1.07-5.15). Additionally, the prevalence of chronic HTN with superimposed PE was significantly associated with pandemic exposure ($\chi^2 = 6.73$, df = 1, $p = 0.010$). In the adjusted model, those exposed to the pandemic were 6.22 times more likely to develop chronic hypertension with superimposed preeclampsia (95% CI: 1.34–29.0).

No significant associations were found for gestational HTN ($\chi^2 = 0.00$, df = 1, $p = 0.969$) or preeclampsia ($\chi^2 = 0.98$, df = 1, $p = 0.323$). Infection with the SARS-COV-2 virus during pregnancy was not associated with higher odds of any HDP ($\chi^2 = 1.09$, df = 1, $p = 0.297$).

Conclusions: We found that the risk of chronic HTN and chronic hypertension with superimposed PE or eclampsia was significantly elevated in those pregnant during the COVID-19 pandemic compared to before the pandemic. The odds of chronic HTN were more than twice as high, and the odds of superimposed HDP six times greater in the pandemic-exposed group. However, there were no significant differences observed in rates of HDP when restricting the sample to those who were known to be infected with the SARS-COV-2 virus compared to those unexposed to the pandemic. These findings highlight the need for further research to explore the role of pandemic-related psychosocial factors in the diagnosis and development of these conditions.

A31 MINDFULNESS ON THE GO: A STUDY OF MOBILE APP USAGE AND MENTAL HEALTH IN PREGNANT PATIENTS

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Objective: Nearly 20% of pregnant individuals are diagnosed with an anxiety disorder or major depression during pregnancy, both of which have been associated with adverse outcomes such as preterm birth and low birth weight. Mindfulness meditation has been shown to effectively reduce symptoms of anxiety and depression in pregnancy. This study aims to assess the typical usage patterns of mobile applications offering mindfulness training and to identify characteristics of individuals who actively engage with these apps.

Methods: We conducted a prospective study evaluating the impact of the Expectful meditation app on mental health and sleep in pregnant patients. Participants were enrolled during pregnancy and granted access to the app. Surveys assessing depression (Edinburgh Postnatal Depression Scale [EPDS], Hospital Anxiety and Depression Scale [HADS]), perceived stress (Perceived Stress Scale [PSS]), and sleep disturbance (PROMIS Sleep Disturbance Scale) were administered at enrollment, 30 days post-enrollment, and postpartum. Hours of usage were obtained through the application. Patient demographic information and pregnancy outcomes were collected. Participation in the study was voluntary and of no cost to the patients.

Results: Forty-nine patients consented to the study, and 18% (n=9) of them used the meditation app at least once, with total usage ranging from 1 second to 107,713 seconds (approximately 29 hours). There were no significant differences in baseline demographics or pregnancy outcomes between app users and non-users. However, at baseline, app users reported significantly higher anxiety (HADS-anxiety score, p=0.011) and stress (PSS, p=0.025) compared to non-users. Baseline EPDS scores did not differ significantly between groups, with an average score of 9.33 among app users and 5.58 among non-users (p=0.0541). Postpartum, there was no difference in the rate of postpartum depression diagnoses between the groups. However, postpartum EPDS scores remained significantly higher among app users compared to non-users (7.67 vs. 3.38, p=0.023). Within-group comparisons of baseline and postpartum survey results showed no significant changes among app users. In a secondary analysis based on the presence of social determinants of health (SDoH), participants with reported SDoH (n=21) had significantly higher EPDS (p=0.0421), PSS (p=0.0495), and HADS-depression (p=0.0054) scores compared to those without SDoH (n=24).

Conclusion: This study suggests that despite free access to a mindfulness-based mobile application, patients may not fully engage with it. The preference for in-person set-

tings may stem from the structure they provide, including physical presence and dedicated time. While not statistically significant, patients affected by social determinants of health appeared to use the app more frequently than those without, possibly due to barriers limiting their participation in in-person programs. These findings highlight the potential value of mobile apps in offering accessible mindfulness resources, particularly for individuals facing social limitations.

A32 PHARMACOLOGIC MANAGEMENT OF DIABETES MELLITUS IN PREGNANCY: A NATIONWIDE SURVEY OF MATERNAL-FETAL MEDICINE PHYSICIANS

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Objective: Diabetes mellitus (DM) in pregnancy is a common perinatal complication. With rising levels of obesity in the United States, rates of DM in pregnancy are increasing. Insulin is recommended as the first line pharmacologic intervention. No medical society explicitly states a specific type of insulin as the first-line therapy in pregnancy. This study aims to examine the pharmacologic management of diabetes in pregnancy preferred by Maternal-Fetal Medicine specialists in the United States.

Study Design: An electronic survey was sent to a random sample of maternal fetal medicine (MFM) physicians via email and online MFM forums. All responses were anonymous and participation was voluntary. Survey questions include basic demographics, preference for insulin initiation and monitoring for glycemic control in pregnancy.

Results: The survey was completed by 85 MFM specialists, all of which reported managing DM in pregnancy. Approximately 41% of respondents (n=35) have been in practice for greater than 10 years (Table 1). All five regions of the United States were represented, with most respondents from the Midwest (n=26, 31%). Most specialists prescribe more than one intermediate to ultra-long acting insulin analogue (Table 2). Glargine and NPH were prescribed the most by specialists, 91% (n=76) and 82% (n=71), respectively. For shorter acting insulins, Lispro and Aspart were most prescribed, 99% (n=84) and 91% (n=77), respectively. For oral pharmacologic management, 11% (n=9) reported that they do not prescribe Metformin or Glyburide (Table 3). When asked which medications the specialists have previously used and no longer prescribe, 47% (n=40) reported they no longer prescribe Regular insulin and 67% (n= 57) reported that they no longer prescribe Glyburide. The majority of specialists (n=52, 61%) have Endocrinology manage insulin pumps, while 39% (n=33) report that they manage the insulin pumps in pregnancy themselves.

Conclusions: This study shows that MFM specialists use a broad range of pharmacologic options for management of DM in pregnancy. The most common medications used were Lispro, Aspart, Glargine, NPH, and Metformin. The use of multiple different medications by MFM specialists highlights the lack of standardized guidelines among professional societies.

Additional research is needed to assess if there should be a first line pharmacologic management for DM in pregnancy.

A33 INTENTIONAL OR SPONTANEOUS: DOES HYSTEROTOMY EXTENSION TYPE AFFECT MATERNAL AND NEONATAL OUTCOMES?

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Background: Hysterotomy extensions at the time of caesarean delivery are classified as spontaneous or intentional, and have been associated with complications including increased blood loss and operative time. The aim of this study was to compare risk factors and outcomes of spontaneous and intentional hysterotomy extensions.

Methods: We conducted a retrospective cohort study at a large tertiary academic medical centre between January 2015 and July 2020 and included patients who had caesarean deliveries complicated by hysterotomy extensions as described in operative reports. Demographic, medical, obstetric, and surgical data were collected. Descriptive statistics and logistic regression were used to determine significant associations between risk factors and the odds of a specific type of hysterotomy extension. Propensity score weighting was applied to balance the distribution of risk factors between spontaneous and intentional extensions, allowing for the evaluation of their potential causal effects on selected maternal and birth outcomes.

Results: During the study period there were 6,593 caesarean sections that were performed and 250 were complicated by hysterotomy extension (4%). Of these, 137 were spontaneous (55%) and 113 were intentional (45%). Risk factors significantly associated with spontaneous extension included labor, increasing cervical dilation, and increasing birth weight. Intentional extension was significantly associated with inability to deliver the fetus. There were no significant differences in adverse outcomes between the two extension types.

Conclusion: Although different risk factors exist for hysterotomy extension type, there were no significant differences in adverse outcomes when performed. This may help guide surgeons when making decisions on whether intentional hysterotomy extension is needed, as our study suggests no difference in outcomes among extension type.

A34 COMPARISON OF PAIN SCORES AND BIRTH SATISFACTION BETWEEN NULLIPAROUS AND MULTIPAROUS PATIENTS RECEIVING PRENATAL LABOR PAIN EDUCATION

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Purpose: This study aims to identify educational strategies to mitigate differences in pain experience among nulliparous and multiparous patients.

Introduction: Research shows that patients' understanding of the birthing process and pain control methods influences their labor experience (Hodnet, et al. 2002). Unfortunately, many patients lack comprehensive knowledge of pain relief options before labor begins (Garlock, et al. 2017 , Rhode, et al. 2022). Existing literature highlights the need for further education and research on how informed patients may experience labor differently (Garlock, et al. 2017). Furthermore, research demonstrates notable differences in pain experiences among nulliparous vs multiparous women. However, most studies focus on intervention rates (e.g., epidural utilization) rather than direct pain scoring, leaving gaps in understanding how education modulates pain experiences across parity (Lowe, et al. 1992, Labor, et al. 2008). This study evaluates patient-reported pain scores and birth experience satisfaction among nulliparous and multiparous patients receiving standardized prenatal pain education.

Methods: An IRB approved randomized control trial was conducted (IRB Approval #16937). First a pilot survey was administered to a convenience sample of pregnant patients in the clinic setting to assess baseline knowledge about labor pain control options to inform creation of a standardized patient education guide about pain control options available during labor. Pregnant patients in the third trimester of all ages were then recruited from a high-volume urban OB/GYN clinic. Demographic information including age, parity, and race was collected. Recruited patients were then randomized into the experimental or control group via 1:1 randomization. The experimental group received the educational guide during a third trimester prenatal visit, and the control group received standard prenatal care. Patients were then followed through their delivery to the postpartum period where a final survey was administered to assess patients' pain scores and satisfaction during labor and birth between the two groups. Patients of all ages with either singleton or multiple gestations were included regardless of parity and mode of prior deliveries. Exclusion criteria included patients who were non-English speaking, scheduled for delivery via planned Cesarean section, or experiencing chronic pain conditions or coagulopathy precluding spinal anesthesia. Statistical analysis was conducted through univariate testing, Wilcoxon rank-sum tests, to assess associations between survey variables and whether or not patients received guides.

Results: This pilot analysis studied 22 patients comprised of various ages, races, and parity. 11 patients were randomly assigned to both experimental and control groups. Younger patients (age < 30) had higher overall birth satisfaction scores than older patients (age ⩾ 30) (mean = 4.37, 95% CI [3.75, 4.99], compared to mean = 4.21, 95% CI [3.52, 4.90] in the ⩾ 30 group), but lower pain control method satisfaction ratings (mean = 4.12, 95% CI [3.42, 4.82] compared to a mean = 4.28, 95% CI [3.62, 4.94], in the ⩾30 group). Multiparous patients on average had higher pain control method satisfaction and birth satisfaction scores than nulliparous patients (mean = 4.50 95% CI [4.12, 4.87], and 4.78 95% CI [4.45, 5.11], respectively in multiparous patients, compared to mean = 3.75, 95% CI [2.58, 4.91], and 3.37 95% CI [2.48, 4.26], respectively in nulliparous patients). In the Wilcoxon rank sum tests, the difference in birth satisfaction scores between nulliparous and multiparous patients was statistically significant ($p < .05$).

Conclusion: This pilot study suggests that younger patients may experience higher birth satisfaction and lower pain satisfaction compared to older patients with the addition of a standardized pain guide. Additionally, multiparous patients may have higher satisfaction with pain control and birth experience than nulliparous patients overall. Future larger datasets will allow for multivariate analysis to determine whether factors such as age, race, parity, and/or educational group, significantly affect pain and birth-related satisfaction scores.

A35 THE EFFECTS OF STATINS IN PATIENTS WITH ENDOMETRIAL CARCINOMA ON CANCER PROGRESSION, RECURRENCE, AND SURVIVAL

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The objective of our pilot study was to evaluate the effects of statins on progression free survival (PFS) and 5-year, 10-year, and overall survival (OS) in patients with endometrial cancer (EC). We conducted a retrospective cohort study of 197 patients diagnosed with EC between 01/01/2008 – 10/31/2023 at a single academic institution in central Missouri. All stages were included. Patients were excluded from the study if they had inadequate records of treatment or follow up or received care outside of the university clinics. Cancer history, medication use, and patient demographics were collected from the electronic medical records and coded into REDCap using standardized operating procedures developed by the research team. Survival analysis

was conducted using log rank and Kaplan-Meier estimates as well as Cox modeling for multivariate analysis. P-value <0.05 was used to determine statistical significance. A total of 197 patients met inclusion criteria with a mean age of 68 and mean BMI of 39.6. Among the included patients, 98 (49.7%) had grade 1 EC while 69 (35.0%) and 30 (15.2%) had grade 2 and 3 EC, respectively. There were no differences in age or BMI in patients using statin therapy versus those not using statin therapy. Of 197 patients included in the study, 89 (45.2%) had a history of statin use and 108 (54.8%) did not have a history of statin use. The mean overall survival of patients with statin use was approximately 115 months vs 104 months for patients without a history of statin use (p= 0.4403). Further data analysis of our clinical cohort revealed a longer PFS in patients who have used a statin (66.2 months) compared to the group without statin use (53.7 months, p = 0.9258). Five year survival rate was 46.6 months for statin users and 50.2 months for those with no use (p=0.5920) while the 10-year survival rate was noted to be 86.9 months vs 84.3 months, respectively (p=0.3087). Multivariate analysis of OS and PFS was only significantly affected by cancer grade. The current pilot study suggests that OS and PFS may be longer among statin users when compared to patients who have not used a statin. Both differences lack statistical significance in our cohort; however, given the magnitude of difference in PFS and OS in our study, there is a suggestion of possible clinical impact. Further results from our lab's study of statin treated murine models showed reduced rates of distant metastasis and longer PFS, which supports the results of our clinical cohort. However, it is important to note that we did not see this trend amongst statin users within our 5-year survival model indicating that statin impact on cancer progression may have a time-dependent component. Therefore, we plan to expand our exploration of this data and our objectives to include a new multicenter consortium of patient records across several states. We suspect expanding our cohort may further reveal a statistically significant interplay between the cancer progressing effects of poor diet and lipid rich environments in the setting of cancer suppressing effects of statins.

A36 ACUTE COLONIC PSEUDO-OBSTRUCTION FOLLOWING TOTAL ABDOMINAL HYSTERECTOMY UTILIZING SPINAL ANESTHESIA: A CASE REPORT AND REVIEW OF OGILVIE'S SYNDROME IN THE OB/GYN POPULATION

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Purpose: To increase awareness and management of Acute Colonic Pseudo-Obstruction (ACPO), a rare complication that can be associated with spinal anesthesia commonly used in OB/Gyn surgeries.

Methods: This is a case report describing the hospital course of a patient undergoing total abdominal hysterectomy and bilateral salpingectomy (TAH-BS) with spinal anesthesia, who developed ACPO with colonic perforation. A literature review was conducted to review the incidence, presentation, and management of ACPO and highlight the importance of recognizing this complication.

Results: The patient was a 45-year-old G2P2 who presented for scheduled TAH-BS for abnormal uterine bleeding (AUB). The patient's past surgical history was significant for two prior cesarean sections, an appendectomy, and an open umbilical hernia repair that was done through a large midline incision for unknown reasons. This patient received a Duramorph spinal before her procedure. Intraoperative findings included dense adhesions from the anterior abdominal wall to the lower uterine segment and a 2 cm right ovarian simple cyst. Given location of anterior adhesions, an Alexis-O retractor could not be placed. Instead, the bowel was packed with moist laparotomy sponges and the occasional use of hand-held retractors. The uncomplicated procedure was completed in under two hours. On postoperative day 1 (POD1), the patient's pain was controlled, she was tolerating a diet without nausea or vomiting, voiding spontaneously, and reported flatus. Her abdominal exam was benign and labs were notable for a white blood cell count (WBC) of 15.43. On POD2, the patient's status was grossly unchanged. On POD3, the patient's condition worsened with increased pain overnight, new nausea, and one episode of emesis that was improving with medications. The exam was now significant for moderate distension, tenderness to palpation, and diminished and high-pitched bowel sounds. Her WBC was also increasing. The patient was made NPO and given a Dilaudid PCA and scheduled IV Toradol for pain. A CT A/P showed a dilated proximal colon with her cecal pole measuring 8 cm in diameter and dilated distal ileal loops consistent with ileus (no signs of mechanical obstruction or evidence of pneumatosis). A nasogastric (NG) tube was not placed as patient declined. On POD4, the patient was stable overall but still symptomatic. That evening, the team was alerted of patient's acutely worsening pain control. A CT Urogram was done to rule out possible bladder/ureter injury and showed similar dilated proximal colon and cecum with cecal diameter now measuring up to 10.9 cm. Moderate volume pneumoperitoneum and slight interval increase in small volume abdominopelvic free fluid and pseudo-pneumatosis in region of the cecum was noted. The findings were concerning for possible bowel perforation, suspected at the proximal colon/cecum. Acute care surgery was consulted at this time and they elected to take the patient to the OR for an emergent exploratory laparotomy and proceeded with a right hemicolectomy with handsewn ileocolonic anastomosis. They noted turbid fluid in the abdomen upon entry and a normal-appearing small bowel with small mesenteric rents without compromise to bowel viability. There was, however, a large area of full-thickness necrotic tissue involving the ascending colon and cecum with perforation and spillage of stool noted once cecum was reflected medially.

Conclusions: ACPO, also known as Ogilvie's syndrome, is characterized by colon dilation with decreased or absent peristaltic activity without any evidence of mechanical/anatomic obstruction. Estimated incidence is approximately 100 cases out of 100,000 admissions. Thought to occur most commonly in elderly (>60 years old) and severely ill individuals, particularly men, this condition also develops following surgery, including OB/GYN surgery. A large retrospective series found that the most common predisposing conditions for ACPO were nonoperative trauma, infection, and cardiac disease and that hip surgery and cesarean sections were the most common surgical procedures. Gynecologic cancers and benign gynecologic conditions were also found to be associated with ACPO. The mechanism of ACPO is still uncertain, but a leading hypothesis is impairment of the autonomic nervous system that occurs with trauma, spinal anesthesia, and other pharmacologic agents—noting that spinal anesthesia is common in OB/GYN surgeries. This case highlights the need for awareness of ACPO in the postoperative period, particularly in cases where spinal anesthetic is utilized or other motility-modifying pain regimens regardless of patient age or other co-morbidities to avoid severe complications. Colonic ischemia and perforation risk increases when cecal diameter exceeds 10-12cm on CT and duration is >6 days, but as demonstrated in this case, can occur with less. Initial management for cases where cecal diameter is <12cm and no signs of perforation includes supportive care measures (NG tube, NPO, IVF, etc.) and close monitoring. More severe symptoms/cecum >12cm may warrant treatment with neostigmine, cecal decompression, or surgery. Colonic ischemia and perforation are the two main complications of ACPO which develops in 3-15% of patients. In the absence of complications, mortality is 15% and with complications, mortality is 36 to 44%.

A37 CESAREAN SCAR PREGNANCY DELIVERED AT 32 WEEKS

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Purpose: To report a rare case of cesarean scar ectopic pregnancy (CSEP) complicated by placenta accreta spectrum (PAS), managed expectantly, culminating in cesarean hysterectomy at 32 weeks of gestation.

Methods: Case Report.

Results: A 40-year-old G5P3013 with three prior cesarean deliveries presented with spotting and pelvic cramping. Transvaginal ultrasound suggested a 6-week CSEP. She was hemodynamically stable, with minimal vaginal bleeding and a closed cervix. Her body mass index (BMI) was 40 kg/m^2, and she had a 15-pack-year smoking history. Maternal-fetal medicine (MFM) confirmed the diagnosis and counseled her extensively on risks, benefits, and alternatives, recommending management via termination or hysterectomy. Risks of significant hemorrhage, cesarean hysterectomy, bladder injury, uterine rupture, miscarriage, and other serious maternal morbidities were discussed thoroughly. The patient chose expectant management and close MFM follow-up. At 15 weeks, her ultrasound raised concerns for placenta accreta spectrum (PAS). She also had several blood pressures around 140/90 mmHg and was started on 81 mg of daily aspirin for preeclampsia prevention in the setting of her chronic hypertension. She failed both the 1-hour and 3-hour glucose tolerance tests, despite an early first-trimester A1c of 4.9%. She met with a diabetes educator and began logging her blood sugar levels. At 24 weeks, ultrasound confirmed placenta increta. Risks of hemorrhage, invasion of surrounding structures, cesarean hysterectomy, blood transfusion, and maternal and fetal death were again extensively discussed. Gynecologic Oncology was consulted and noted definitive need for hysterectomy and the possibility of leaving the placenta in situ to avoid life-threatening hemorrhage. This would be a decision at time of cesarean delivery, regardless of imaging. Magnetic resonance imaging was negative for placenta percreta. At 32 weeks, she was admitted from high-risk clinic due to ultrasound findings of extreme thinning of the lower uterine segment, with much of the pregnancy either bulging or extrauterine. Betamethasone was administered for fetal lung maturation, which lead to hyperglycemia. The decision was made to deliver within the week. Four units of type and crossmatched packed red blood cells (pRBCs) were made available. The day prior to delivery, the patient became hypoxic, and a chest x-ray revealed pulmonary edema and/or atelectasis. She was placed on an IV insulin drip for 24 hours preoperatively, and tight glucose control was achieved. At 32 weeks and 4 days, she underwent cesarean delivery via vertical midline and vertical uterine incisions. The infant had APGARs of 8 and 9 and weighed 5 lbs 14 oz. Gynecology oncology then performed an exploratory laparotomy, cesarean hysterectomy, and lysis of adhesions. Estimated blood loss was 2,300 mL. She received 2 units of pRBCs, 1 unit of fresh frozen plasma, and 4.6 L of crystalloids intraoperatively. Placental vessels were visualized invading the bladder dome serosa anteriorly. Pathology confirmed placenta increta, maternal and fetal vascular malperfusion, and a 3-vessel cord with marginal insertion. On postoperative day (POD) 0, she was diagnosed with chronic hypertension with superimposed severe preeclampsia. On POD 1, she again developed hypoxia and pulmonary edema. One MFM specialist suggested her hypertension and pulmonary edema were likely due to volume overload rather than severe preeclampsia. She was discharged home on POD 4. Her baby was doing well in the NICU. On POD 9, the patient returned with a 1 cm area of superficial wound dehiscence, serosanguineous discharge, induration, erythema, and a leukocytosis of 17,000 cells/μL. Wound culture grew Serratia marcescens, and she was treated with antibiotics. At her six-week postpartum visit, her wound was closed and the visit was unremarkable.

Conclusions: CSEP is rare type of ectopic pregnancy with significant maternal morbidity and mortality risk. Scar tissue from a prior cesarean delivery is weaker and less vascular than the surrounding uterine wall. In rare cases, a CSEP embryo may have a heartbeat, leading to a difficult decision to either terminate the pregnancy or accept serious risks including hemorrhage, uterine rupture, PAS, cesarean hysterectomy. If expectant management is chosen, a multimodal team is essential to ensure the patient is receiving appropriate management.

A38 MEDICALLY INDICATED HYSTEROSCOPY D&C FOR A CESAREAN SCAR ECTOPIC PREGNANCY IN THE SETTING OF POSTPARTUM CARDIOMYOPATHY WITH POSSIBLE PLACENTA ACCRETA SPECTRUM

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Cesarean scar ectopic pregnancies (CSEP) are becoming increasingly more common due to rising rates of cesarean deliveries worldwide. Approximately 21% of pregnancies are currently delivered by cesarean delivery, with a projected increase to 33% by 2030.[1] This method of delivery whether by classical, low transverse, or low vertical incision requires incision and subsequent sutured closure of the uterus at time of delivery, which can result in varying degrees of scarring within the myometrium. CSEP is a rare form of ectopic pregnancy in which the gestational sac implants within the myometrial defect of a previous cesarean scar. It poses significant risks, including uterine rupture and severe hemorrhage. According to the Society for Maternal-Fetal Medicine, it is a Grade B recommendation not to proceed with expectant management.[2] Diagnosis is primarily achieved through transvaginal ultrasound, which typically reveals a gestational sac embedded in the anterior lower uterine segment with absent or thin overlying myometrium. Doppler imaging can further confirm the diagnosis by demonstrating increased vascularity around the implantation site. Due to the potential for a thin myometrium at that scar site, the potential for morbidly adherent placentation due to placenta accreta spectrum can add additional morbidity, as this can frequently result in significant hemorrhage at time of delivery, necessitating hysterectomy. Combining these two co-morbid conditions with history of postpartum cardiomyopathy presents a significantly high risk to the life of a pregnant patient and necessitates collaboration and insight from a multiprofessional team in order to develop the most appropriate treatment plan.

Case: A 30yr G3P1102 at 9 weeks gestation presented to clinic to establish care. She had a medical history significant for recent postpartum cardiomyopathy with an ejection fraction of 20-25%, history of preeclampsia, hypertension, obesity, and history of two cesarean deliveries. She had discontinued her sacubitril, valsartan, carvedilol, dapagliflozin, spironolactone, and furosemide in December 2024 following loss of insurance coverage and learning she was pregnant. She was symptomatic at intake and was sent to the hospital for evaluation. Her electrocardiogram showed no evidence of acute myocardial infarction, but a possible old infarct was noted. Echocardiogram demonstrated global left ventricular hypokinesis with ejection fraction of 20-25%. A V/Q scan was negative for pulmonary thromboembolism. Cardiology recommended to avoid pregnancy and adjusted the patient's medication regimen to metoprolol succinate 12.5 mg daily. On ultrasound, a CSEP was noted along with thin overlying myometrium and early trophoblastic invasion anteriorly concerning for possible placenta accreta spectrum. The patient was counseled regarding the extreme morbidity of her condition and termination was discussed. Patient requested a week to process the information and had her metoprolol increased to 25mg daily. At follow-up, the patient elected to proceed with termination of pregnancy. She requested a bilateral tubal ligation at time of the procedure. A multidisciplinary meeting was held between Maternal Fetal Medicine, Gynecologic Oncology, Academic Generalist Specialists, and Anesthesiology to discuss possible management options for addressing this patient's CSEP: hysterectomy en bloc, potassium chloride and methotrexate injection, and/or ultrasound guided suction dilation and curettage (D&C). Given the patient's cardiac risks, desire to minimize fluid shifts/blood loss, and gestational sac communication with cervical/endometrial cavity, the group recommended suction D&C via ultrasound guidance with neuraxial anesthesia. Due to concerns of general anesthesia, laparoscopy could not be performed for sterilization. The requirements for termination of pregnancy in compliance with Alabama law were completed. She was re-evaluated twenty-four hours prior to procedure and was stratified to moderate/high risk. The patient was counseled about the option to start with hysteroscopy, and she consented. On day of surgery, spinal anesthesia was administered without complication. Her cervix was serially dilated under ultrasound guidance. An operative hysteroscope was then introduced into the uterus. The ectopic pregnancy was visualized near the cervical-uterine junction, which was confirmed with ultrasound. A tissue removal device was utilized to remove the ectopic tissue under ultrasound guidance. When the fluid deficit reached 1000 cc of normal saline, the decision was made to transition to suction curettage to remove the remaining anterior placenta, under ultrasound guidance. At the end of the procedure, a levonorgestrel releasing intrauterine device (IUD) was placed under ultrasound guidance. The patient tolerated the procedure well with minimal blood loss and was admitted for observation. She received a dose of methotrexate for the treatment of potential residual tissue. The patient was discharged later that day with no apparent complications.

Discussion: This high risk patient was able to have a minimally invasive procedure to manage a complex CSEP

with potential placenta accreta spectrum under spinal anesthesia. She is currently asymptomatic, and her beta-hcg levels are nearing zero. Currently there exist several alternative measures of management, which were considered individually and in combination as part of treatment planning above.

A39 MANAGEMENT OF SICKLE CELL DISEASE DURING PREGNANCY COMPLICATED BY HELLP SYNDROME

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Introduction: Hemoglobin SC sickle cell disease in the setting of pregnancy with pre-eclampsia or HELLP syndrome (Hemolysis, Elevated Liver enzymes, Low Platelet count) is a challenging clinical scenario that greatly increases maternal and fetal risks during pregnancy. Hemoglobin SC sickle cell disease is a variant of sickle cell disease characterized by the presence of both hemoglobin S and C. This can exacerbate pregnancy complications through its vaso-occlusive properties, which can impair placental function, lead to fetal growth restriction, and increase the risk of pre-eclampsia, preterm birth, stillbirth, and maternal morbidity and mortality. Pre-eclampsia is a hypertensive disorder of pregnancy paired with proteinuria that occurs after 20 weeks gestational age. It can lead to HELLP syndrome, a severe form of pre-eclampsia characterized by hemolysis, elevated liver enzymes, and thrombocytopenia. The pathophysiology of HELLP syndrome involves endothelial dysfunction and microangiopathic hemolytic anemia, which can be particularly severe in the setting of Hemoglobin SC sickle cell disease due to an underlying hemolytic state. Management of Hemoglobin SC sickle cell disease in the setting of pregnancy with pre-eclampsia or HELLP syndrome requires a multidisciplinary approach, involving OB/GYNs, hematologists, and sometimes even gastroenterologists, to optimize maternal and fetal outcomes and provide patient-centered care.

Methods: Case report.

Case Description: Patient is a 27-year-old G1 with a history of Hemoglobin SC sickle cell disease (managed with hydrocodone outpatient), asthma, retinopathy, and avascular hip necrosis. She was admitted at 37+0 weeks for a sickle cell pain crisis characterized by 10/10 lower back pain with radiation to her bilateral hips and legs. Her pain was unrelieved with hydromorphone, and she declined increases to her medications due to her concern for fetal harm after her biophysical profile (BPP) showed a score of 6/10-likely secondary to the effects of narcotics. She ruled into pre-eclampsia without severe features based on proteinuria and mildly elevated blood pressures. As a result, she was induced at 37+3 weeks with a spontaneous vaginal delivery complicated by postpartum hemorrhage (PPH) of 882 mL. After delivery, she developed tachycardia of 147. Her hemoglobin dropped from 10.7 g/dL to 8.6 g/dL a few hours prior to delivery, then to 5.6 g/dL at 4 hours after delivery. Her alanine aminotransferase (ALT) was 444 units/L and her aspartate aminotransferase (AST) was 865 units/L. She experienced reactive leukocytosis with up trending white blood cell count of 25.37 x 103/mcL, but was asymptomatic with negative urine and blood cultures. She was started on cefepime, vancomycin, and metronidazole for prophylaxis. Her platelets had been down trending throughout her hospitalization. Her thrombocytopenia in combination with pre-eclampsia led to the diagnosis of pre-eclampsia with severe features. A coagulation panel was obtained and trended after the PPH, and it showed worsening levels with lactate dehydrogenase of 990 units/L, an international normalized ratio increase to 1.37, and a fibrinogen drop from 316 to 280 mg/dL. Due to her anemia, she was transfused with 2 units of packed red blood cells (pRBCs). Her tachycardia and sickle cell pain continued despite escalating hydromorphone doses, and there was concern for HELLP syndrome versus acute worsening of sickle cell crisis.

Due to her hemodynamic instability and worsening of her labs, she was transferred to the MICU. An electrocardiogram showed sinus tachycardia. Splenic ultrasound showed stable splenomegaly. A computed tomography angiogram (CTA) was negative for acute pulmonary embolism but showed bilateral small pleural effusions with atelectasis. Her right lower extremity doppler ultrasound was negative.

In the MICU, she was treated with magnesium for seizure prophylaxis, and she remained stable without seizure activity. Her pain regimen was escalated per sickle cell protocols, and her pain improved. She received an additional 2 units of pRBCs for hemoglobin of 6.4 g/dL, and her hemoglobin stabilized at 9.9 g/dL. Additionally, her platelets stabilized at 146x103/mcL, and her ALT and AST down trended. Additional imaging showed grade 1 hepatic steatosis. A CT brain without contrast was unremarkable. Once she was stabilized, she continued to meet postpartum milestones and remained hemodynamically stable. She also continued to deny symptoms of pre-eclampsia. Her reactive leukocytosis improved, and antibiotics were discontinued.

Discussion: In the case of this patient, several discussions and many multidisciplinary decisions were made to optimize maternal and fetal outcomes and manage postpartum complications with the goal of minimizing long term negative effects and organ damage to the mother. Hydromorphone can be a mainstay of treatment for sickle cell pain crises, but in the setting of pregnancy, some women may be reluctant to take the medication due to potential risks of poor fetal growth, stillbirth, preterm delivery, neonatal abstinence syndrome, and the need for cesarean delivery. In this patient's case, her BPP score was 6/10, suspected to be secondary to hydromorphone use. Due to patient concern about this, the increased doses were held prior to delivery, and other management routes were taken, which demonstrated patient-centered care.

A40 AN UNUSUAL PRESENTATION OF A CESAREAN SECTION SCAR ECTOPIC: A CASE REPORT

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Introduction: An ectopic pregnancy is when a fertilized egg implants in a different location than the endometrium of the uterine cavity. Over 90% of ectopic pregnancies occur in the fallopian tube, but other locations are possible, including in the scar of a prior cesarean delivery. This weaker scar tissue can lead to uterine rupture, placenta accreta spectrum, or hemorrhage. While this is rare, at 1 in 2,000 women with prior cesarean delivery, there has been a rise in cesarean scar ectopic pregnancies as the number of cesarean deliveries has increased. On the other hand, molar pregnancies occur due to abnormal fertilization causing tumor-like growth instead of a healthy fetus or placenta. Molar pregnancies are either complete (diploid set of paternal chromosomes), or partial (triploid set from two sperm enucleating one egg or one sperm with diploid set of chromosomes).

Purpose: To report an unusual presentation of a cesarean scar ectopic pregnancy.

Methods: Case Report

Results: We present a rare case of a previously healthy 31-year-old G7P2133 at eight weeks gestation, as dated by last menstrual period, with history of three previous cesarean sections who presented to an outside hospital with a two-week history of brown vaginal spotting. In addition, she experienced lower abdominal cramping and nausea without associated vomiting. She was found to have an elevated beta-hCG level of 198,086 mlU/ml and was transferred to our hospital due to concern for molar pregnancy. Upon ultrasound, findings were concerning for a potential partial molar pregnancy as well as cesarean section scar ectopic pregnancy. The findings were confirmed with Magnetic Resonance Imaging (MRI), which showed the gestational sac involving the cesarean scar and the additional complication of potential extrauterine invasion of the possible molar pregnancy through the anterior mid-body uterine serosa into the anterior abdominal wall and along the uterine cesarean scar in the lower uterine segment. As the patient stated she had completed childbearing, she consented to a robotic assisted total laparoscopic hysterectomy with bilateral salpingo-oophorectomy performed by Gynecologic Oncology. The Beta-hCG was 149,376 mlU/ml on the day of surgery. During the surgery, significant infiltration of the placental tissue was noted, creating adhesions between the uterus, the anterior abdominal wall, and the bladder. After the specimen was removed, it was bivalved and cystic trophoblastic tissue was noted in the fundus with almost complete myometrial invasion. Her postoperative recovery was unremarkable. She met all postoperative milestones and was discharged on postoperative day one. She continued to follow with Gynecology Oncology, where cytogenetics showed no chromosomal abnormalities. While this was not a true molar pregnancy, the cesarean scar ectopic and the placenta percreta still made this a life-threatening pregnancy.

Conclusions: While our patient had a classic presentation for a molar pregnancy including vaginal spotting, an elevated beta hCG, and concerning imaging findings, her cytogenetics were negative for any chromosomal abnormalities. Regardless, the cesarean scar ectopic pregnancy compounded by placenta accreta spectrum with placenta percreta imposed significant risk for the mother and was successfully navigated with early surgical intervention.

A41 SIMPLE PARATUBAL CYST RESULTING IN CONTRALATERAL OVARIAN TORSION: A CASE REPORT

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Purpose: To report a rare case of simple cyst progression to contralateral ovarian torsion in a previously healthy adolescent.

Methods: Case Report.

Introduction: Paratubal cysts are typically benign and asymptomatic, often discovered incidentally during imaging or surgery. However, their potential to cause significant complications, including adnexal torsion, especially in pediatric populations, is less commonly reported. Adnexal torsion is the fifth most common gynecologic emergency.1 This case presents an unusual scenario of a simple right-sided paratubal cyst leading to torsion of the contralateral (left) ovary and fallopian tube in a premenarchal adolescent girl. The case emphasizes the importance of timely surgical evaluation in the setting of persistent abdominal pain and demonstrates how even benign-appearing lesions on imaging may result in complex intra-abdominal pathology.

Results: We present the case of a 12-year-old premenarchal, virginal female with no significant medical or surgical history who presented to a rural medical clinic with severe lower abdominal pain. The patient endorsed roughly two weeks of pain that was initially attributed to constipation; however, over the past week, the pain had significantly progressed, despite more regular bowel movements. She endorsed pain so severe that she was unable to tolerate any food intake.

A pelvic ultrasound revealed a uterus measuring 4.42 x 2.3 x 1.54 cm with an endometrial thickness of 3.91 mm. The left ovary appeared normal, while the right ovary contained a 5.8 x 5.5 x 7.3 cm unilocular, anechoic cyst with a smooth inner wall, consistent with ORADS-2. No free fluid was seen.

Due to persistent pain and the size of the adnexal mass, the patient underwent diagnostic laparoscopy. Inspection revealed torsion of the left ovary and fallopian tube with appropriate coloration. Manipulation of the left ovary showed a large, dark cystic mass within the cul-de-sac The mass appeared adherent with the left adnexa and contiguous to the right ovary. The uterus was mobile and not involved.

Due to the complexity and extent of the mass, Pediatric Surgery was consulted intraoperatively. They performed lysis of adhesions and identified the mass as a large, right-sided, paratubal cyst. The mass was carefully dissected from surrounding structures, including shelling it out from the left fallopian tube before removal. The fimbriae were involved and could not be preserved. The left ovary was detorsed and noted to have good perfusion.

Due to its size of the mass in the bag, the specimen bag was brought towards the anterior abdominal surface, and the cyst was then ruptured. The dark brown fluid was aspirated with a suction irrigator – taking care to ensure no spillage. The cyst wall was then removed in its entirety and sent to pathology.

The final intraoperative assessment showed that the remaining left ovary and fallopian tube appeared viable with good color. Pathology revealed a 5.8 x 5.3 x 3.5 cm disrupted cyst with a markedly dusky outer surface and a cobblestone, trabeculated inner lining containing an adherent blood clot. The cyst wall measured 0.2–0.5 cm in thickness and lacked distinct anatomic features, consistent with a paratubal cyst.

The patient recovered well postoperatively and was discharged in stable condition. Follow-up will focus on monitoring the return of ovarian function and future pubertal development.

Conclusion(s): This case highlights the importance of maintaining a broad differential diagnosis when evaluating premenarchal patients with persistent lower abdominal pain, particularly in rural or resource-limited settings where access to specialty care may be delayed. Although initial imaging suggested a benign ovarian cyst, the patient's escalating symptoms warranted surgical evaluation, ultimately revealing a large paratubal cyst with adnexal torsion. Prompt surgical intervention facilitated ovarian preservation and resolution of symptoms. This case underscores the value of timely referral, multidisciplinary intraoperative collaboration, and the need for careful post-operative follow-up to ensure normal pubertal progression and reproductive health in pediatric patients.

A42 MANAGEMENT OF DELIVERY OF NEONATE WITH LARGE UMBILICAL PSEUDOCYST AND FETAL HETEROTAXY: A CASE REPORT

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Purpose: Present a unique case of a large umbilical cord pseudocyst with a two-vessel cord associated with fetal heterotaxy and extensive congenital vascular malformations.

Introduction: Umbilical pseudocysts found during the first trimester are a rare anomaly, occurring in 0.4%-3.4% of pregnancies and are most commonly transient. An umbilical cord cyst is one that communicates with the urachus, while a pseudocyst is composed of Wharton's jelly. The prevalence of a pseudocyst in the third trimester, however, is unknown due to insufficient data. In literature reviews, the prevalence of fetal anomalies with a third trimester umbilical cyst is reported to be 38-100%. It is worth noting that this data is likely biased by the tendency to report abnormal and unique cases in literature.

Case Description: The patient was a 23-year-old G3P2 who desired a trial of labor after cesarean (TOLAC) under the care of a midwife. She had an anatomy ultrasound at 30 weeks' gestation which demonstrated fetal heart defects and an umbilical cyst. The fetal echocardiogram showed a double outlet right ventricle (DORV) with mild pulmonary stenosis, right aortic arch, large ventricular septal defect, and visceral situs inversus with levocardia. A two-vessel umbilical cord with umbilical cyst measuring 4.1 x 3.1 x 2.8cm with absent flow within was also noted. The parents decided at this time to do cell-free DNA which was low risk. On repeat ultrasound at 37 weeks' gestation, the azygous vein was noted coursing into the inferior vena cava. The abdominal anatomy was also clarified – the stomach and spleen were on the right side and liver and gallbladder on the left side. Upon discovery of the DORV on fetal echo, consultation with pediatric cardiology was initiated with close monitoring of the degree of pulmonic stenosis (PS) of the fetus. It was discussed whether the fetus could be delivered at our center, a level III NICU – or need immediate cardiac surgery upon delivery. It was determined the PS was mild, and the fetus would be well-supported by our NICU. Additionally, no additional complications were anticipated for the patient's planned TOLAC.

The patient presented in latent labor at 39+0 weeks' gestation with a VBAC success calculated score of 73.4%. During labor, the patient was monitored using external tocodynamometry and fetal doppler. She opted for no epidural and delivered a viable baby girl. After 60 seconds, delayed cord clamping was performed, and the neonate was passed to a NICU team for standard resuscitation. The neonate had APGAR's of 7 and 8 at 1 and 5 minutes, respectively. She initially required NCPAP but was quickly transitioned to room air. The cord was tied off distal to the umbilical pseudocyst and secured to the neonate for transfer to the NICU. In the NICU, the umbilical cord pseudocyst was noted to have minimal bleeding but was clamped, cut, and sent for pathology. The neonate spent 11 days in the NICU and was discharged to home with close cardiology follow up and referral to pediatric cardiothoracic surgery. Pathology noted a 5.3 cm diameter 2-vessel umbilical cord consistent with a pseudocyst – segmental myxoid degeneration and edematous Wharton's jelly. Also sent to pathology was the pla-

centa, which showed both maternal and vascular malperfusion. Comments included findings consistent with increased resistance to blood flow in the umbilical vein, probably secondary to congenital vascular alterations due to heterotaxy and congenital heart anomalies.

Conclusions: While data is very limited on the prevalence and comorbidities of umbilical cord cysts and pseudocysts, the presence of an umbilical cyst on prenatal ultrasound should warrant advanced imaging and referral to a tertiary care center.

A43 38-YEAR-OLD AT 26 WEEKS GESTATION WITH PITUITARY MACROADENOMA

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Purpose: To report a rare case of pituitary macroadenoma in pregnancy. Pituitary macroadenomas are benign tumors of the pituitary gland. Routine presentation may include endocrine abnormalities or visual field defects. The prevalence of pituitary macroadenomas in the general population is approximately 40.67 per 100,000 individuals. In pregnancy, the occurrence is even more rare, and diagnosis and management require a multidisciplinary approach to minimize potential complications. This case highlights the diagnostic process, management considerations, and potential impact on pregnancy outcomes.

Method: Case Report

Results: A 38-year-old G8P3043 female at 26+2 weeks of gestation presented with intractable headache. The patient stated she choked while drinking juice the night before, which led to a coughing spell. She reported that the headache began soon after the coughing spell. The headache was persistent, dull, and diffuse in nature and associated with photophobia, phonophobia, and two episodes of vomiting. She denied visual changes, dizziness, or weakness. The patient was administered a pain cocktail with minimal relief. Computed tomography (CT) and magnetic resonance imaging (MRI) of the head showed a 2.6 x 1.3 x 1.8 cm expansile mass in the sella with suprasellar extension, elevating and compressing the optic chiasm. The primary diagnosis was a pituitary macroadenoma. Neurology was consulted, and the patient was evaluated. Neurological physical exam was unremarkable, including cranial nerves, motor, sensation, coordination, and higher integrative functions. Neurology concluded there was no need for further neurological workup at this time and to follow up with the neurologist in 2 months. Her pregnancy has been complicated by fetal growth restriction (FGR), abnormal non-invasive prenatal testing (NIPT) with high suspicion for Trisomy 21, chronic hypertension, and advanced maternal age. Past medical history includes chronic hypertension on labetalol 100 mg twice a day and occasional migraines. She was never evaluated by a neurologist for the migraines because she reported only a few episodes a year. The patient was receiving twice weekly fetal testing for FGR with follow up ultrasounds every 3 weeks to assess fetal growth in the setting of highly suspected Trisomy 21. The patient remained asymptomatic throughout this time and did not require pain medication. The patient expressed a desire for a vaginal delivery. Due to the findings of pituitary adenoma and concerns for labor, an anesthesia referral was requested to determine if she was an appropriate candidate for regional anesthesia. She was evaluated by anesthesia, and they deemed her an appropriate candidate. At her 2 month follow-up visit with neurology, she denied any complaints, including headache or visual changes. Neurology referred her to neurosurgery for further evaluation. Neurology plans to follow up with her in 6 months. The team plans for delivery at 38 weeks pending continued normal antenatal testing.

Conclusion: Pregnancy is a physiological state that induces significant changes in the endocrine system, particularly affecting the pituitary gland. These anatomical and functional changes make the management of pituitary disease more complex compared to the non-pregnant state. Due to hyperplasia and hypertrophy of lactotroph cells, the pituitary gland may increase in size by up to 40% in the second trimester and up to 70% in the third trimester, reaching two to three times its normal size. A pituitary adenoma greater than 10 mm in diameter, classified as a macroadenoma, has a 15-36 % chance of increasing in size during pregnancy. This growth risk necessitates close monitoring for symptoms such as headaches or visual disturbances, which may indicate tumor progression and could require neurosurgical evaluation. The treatment and surveillance of macroadenomas during pregnancy should be individualized. Patients should undergo close clinical follow-up with visual field testing during each trimester. In cases of non-functioning adenomas or hormone-secreting adenomas, surgery may be considered when there is significant visual impairment or life-threatening endocrine dysfunction. The second trimester is typically considered the safest period for surgical intervention, as it is associated with lower risks of congenital anomalies and preterm birth. The majority of women with macroprolactinomas or non-functioning adenomas experience favorable pregnancy outcomes. The primary goal of management is to ensure maternal and fetal safety while effectively controlling the tumor. Although rare, pituitary apoplexy, which involves infarction or hemorrhage within the pituitary gland often in the context of a pre-existing adenoma, can occur and may require emergency intervention. A collaborative, multidisciplinary approach involving obstetrics, endocrinology, neurology, neurosurgery, and maternal-fetal medicine is essential to optimize outcomes for both the mother and the fetus.

A44 ADEQUACY OF PRENATAL CARE: A MAPPING STUDY WITH AN EMPHASIS ON POSTPARTUM HEMORRHAGE

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Objective: This study aims to assess whether the adequacy of prenatal care influences the risk of postpartum hemorrhage (PPH), and to identify modifiable risk factors within our patient population that could reduce PPH incidence.

Methods: A retrospective cohort study was performed with permission from the Institutional Review Board (Ascension Health IRB #RIN20230014). Study participants were patients from the Ascension St. Vincent Women's Health Clinic in Indianapolis, a community hospital residency based program. Eligibility criteria was only on the basis of the patient delivering at the Ascension St. Vincent Women's Hospital. A total of 5,502 patients were eligible; of these, 663 women were included in the final analysis. All data were de-identified. Patient information was collected using the REDCAP platform, with supplemental qualitative data extracted from Sovera, Athena, Centricity, and Allscripts-Sunrise. Data were collected from January 2017 to February 2023. Variables included patient age at delivery, gestational age at delivery (in weeks), mode of delivery (vaginal or cesarean section), gravida and parity, and the presence or absence of PPH during the index pregnancy (defined as a blood loss > 1000mL).

The adequacy of prenatal care was assessed using the Adequacy of Prenatal Care Utilization (APNCU) developed by Dr. Milton Kotelchuck. This index considers the gestational week care began, total number of prenatal visits, and birth weight at delivery

Statistical analysis included descriptive statistics and bivariate comparisons to assess the relationship between patient characteristics and occurrence of PPH. Categorical variables were analyzed using Pearson's chi-square test. Continuous variables, such as maternal age and gestational age, were compared using the Mann-Whitney U test due to non-normal distribution. Adequacy of prenatal care was categorized and compared between groups (inadequate vs. intermediate/adequate/adequate plus) using Pearson's chi-square test to evaluate its association with PPH. Statistical significance was defined by $p<0.05$.

Results: Of the 663 patients initially included, 12 were excluded due to missing documentation on PPH status, resulting in a final sample of 651 patients. Among them, 35 (5.4%) experienced PPH.

Median patient age at delivery for the PPH group was 30.13 years compared to 27.43 years in the non-PPH group ($p=0.18$). Median gravidity was 3 for both groups ($p = 0.60$), and median parity was 1 ($p = 0.30$). Median birth weight was 3,170 g in the non-PPH group and 3,130 g in the PPH group ($p = 0.93$). Patients with PPH had a significantly lower median gestational age at delivery (38.1 weeks vs. 39.1 weeks, $p = 0.04$).

Cesarean delivery was significantly associated with PPH. Among 200 cesarean deliveries, 23 (11.5%) resulted in PPH, compared to 12 out of 450 (2.7%) vaginal deliveries ($p < 0.001$).

A total of 248 patients had sufficient documentation to calculate APNCU. Of these, 113 received inadequate prenatal care, while 135 received intermediate, adequate, or adequate plus care. PPH occurred in 6.2% of patients with inadequate care and 5.9% of those with intermediate/adequate/adequate plus care ($p = 0.93$), indicating no significant difference.

Conclusion: In this study, adequacy of prenatal care as measured by the APNCU index was not statistically associated with the occurrence of PPH. These findings suggest that quality of prenatal care, rather than quantity alone, may influence PPH risk. Further research with larger samples is needed to confirm these results. This study was limited by a relatively small number of PPH cases ($n = 35$), reducing statistical power. Additionally, 403 patients lacked sufficient documentation to assess prenatal care adequacy using the APNCU index, highlighting a limitation in the electronic medical records analyzed.

The observed PPH rate of 5.4% exceeds the national average (2019), possibly reflecting the implementation of quantitative blood loss (QBL) monitoring in our institution beginning January 2021, in contrast to prior reliance on estimated blood loss (EBL). This underscores the importance of accurate and standardized blood loss measurement. Furthermore, delivery route and gestational age at delivery were statistically significant which highlights the importance of clinical decision-making in labor and delivery.

A45 SALINE SONOGRAPHY VS HYSTEROSCOPY FOR EVALUATION OF THE UTERINE CAVITY

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Introduction: Saline infusion sonography (SIS) and hysteroscopy are commonly used methods for the evaluation of the uterine cavity prior to fertility treatments. One common finding that may inhibit or prolong fertility treatment is uterine polyps. The prevalence of polyps in patients with abnormal uterine bleeding has been reported to range from 13-50%. The incidence of disease in primary infertility is 3.8%–38.5%, and 1.8%–17% in secondary infertility. It has a combined infertility incidence of 1.9%–24%. Transvaginal ultrasound (TVUS) is an easy and cost effective method for initial assessment of the uterine cavity, however cannot distinguish intrauterine pathology with certainty. Hysteroscopy is the gold standard for diagnosis of intrauterine pathology, however it is invasive, expensive, and requires anesthesia. SIS is a cheaper and less invasive alternative to

hysteroscopy that can identify intrauterine pathology with reasonable accuracy.

Methods: The objective of this study was to compare the sensitivity and specificity of saline sonography to hysteroscopy in identifying uterine polyps in patients with infertility. Patients were identified by searching the patient database at Florida Fertility Institute by CPT 58558, which codes for a surgical hysteroscopy with biopsy and/or polypectomy, from September 1, 2022 to September 23, 2024. One hundred and 29 patient charts were identified. Paper charts were manually evaluated by a single investigator and de-identified results were collected. After accounting for exclusion criteria, the final sample size was 127 patients. Exclusion criteria included missing pathology reports, incomplete records, Mullerian anomalies, cancer, and complications from surgery. Some patients underwent hysteroscopy multiple times and encounters were documented as separate data points. Statistical analyses were then performed to obtain sensitivity, specificity, positive predictive value, and negative predictive values for various imaging studies.

Results: This study demonstrated that within this patient population, SIS had a similar sensitivity to hysteroscopy, 95.31% and 95.51% respectively. Therefore, 95% of patients with polyps would have positive testing for polyps on SIS. SIS can be performed in the office, is inexpensive, and has less complications compared with hysteroscopy. TVUS demonstrated a sensitivity of 47.62% and specificity of 76.47%. TVUS is an easy and cost effective method for initial assessment of the uterine cavity, however cannot distinguish intrauterine pathology with certainty, and is better for ruling out polyps. Endometrial biopsy (EMB) and hysterosalpingogram (HSG) had better sensitivity than TVUS for evaluation of polyps, 70% and 84.62% respectively. Limitations that exist within this study included the chance of error as information was collected manually from paper charts, small sample sizes within each imaging modality group, and a potential for bias due to patients who had multiple imaging studies done with prior positive results. It is also provider dependent on which study is completed and the order of completion, therefore sample sizes are varying.

Conclusion: In conclusion, hysteroscopy is an excellent sensitive method for evaluation of the uterine cavity, however saline infusion sonography may be just as sensitive and have more advantages. Providers should consider in-office SIS prior to hysteroscopy for evaluation of the uterine cavity when endometrial polyp is suspected.

A46 WHEN AUTOIMMUNITY MEETS PREGNANCY: INVESTIGATING ANTIPHOSPHOLIPID SYNDROME AND PREECLAMPSIA

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This is a case report of a 23 year old primiparous female with past medical history of antiphospholipid syndrome, unprovoked deep venous thromboses and venous thromboembolisms, chronic hypertension and class III obesity. She presented to us at 20 weeks and 1 day gestation with known left sided pulmonary embolism who was being managed on the antepartum service. She was taking therapeutic anticoagulation; however, her clinical picture worsened when she then had worsening bilateral pulmonary embolisms and was subsequently diagnosed with superimposed preeclampsia with severe features at 23 weeks and 1 day gestation. She had acutely worsening proteinuria and difficult to control hypertension despite multiple medications. Management included a multidisciplinary approach including maternal fetal medicine, hematology, neonatology, anesthesia and interventional radiology in addition to routine obstetrical care inpatient. As she desired full neonatal resuscitation, she received betamethasone for fetal lung maturity and magnesium sulfate for fetal neuroprotection (in addition to maternal seizure prophylaxis). Fetus was diagnosed with fetal growth restriction at 23 weeks and 5 days gestation, with elevated umbilical artery Dopplers. Patient was ultimately delivered at 24 weeks gestation for worsening preeclampsia via an uncomplicated primary classical cesarean section utilizing perioperative heparin drip, with no excessive bleeding noted intraoperatively or thrombotic events.

Antiphospholipid syndrome (APS) is an autoimmune disorder characterized by circulating antiphospholipid antibodies Lupus Anticoagulant, Anticardiolipin Antibody (IgG/IgM), or Anti-B2 Glycoprotein I (IgG/IgM). Diagnostic criteria include one laboratory finding with positive antiphospholipid antibodies on two occasions at least 12 weeks apart as well as one clinical finding (2). Clinical findings include vascular thrombosis, unexplained death of a morphologically normal fetus > 10 weeks gestation, premature birth of a morphologically normal neonate <34 weeks gestation due to preeclampsia, eclampsia or placental insufficiency, or > 3 unexplained pregnancy losses < 10 weeks gestation (with maternal hormonal, anatomic, chromosomal and paternal chromosomal causes excluded) (2). Pregnancy complications can include venous and arterial thrombosis, fetal loss, fetal growth restriction, preeclampsia and preterm delivery. Pregnancy management of APS can include daily low dose aspirin and prophylactic anticoagulation in addition to treating any complications in pregnancy. The APS complications seen in our patient included pulmonary embolism, fetal growth restriction, preterm preeclampsia with severe features, preterm delivery, placental insufficiency, livedo reticularis, autoimmune hemolytic anemia, and a false positive RPR. Multidisciplinary approach to this patient including played a crucial role to the success of this delivery and should be considered in delivery planning in all high-risk obstetric patients with

multi-system compromise and high risk for maternal and fetal morbidity and mortality from medical condition.

A47 THE EFFECT OF GROWTH HORMONE ON OVARIAN RESPONSE FOR IN VITRO FERTILIZATION

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Growth hormone has been postulated to improve ovarian response, increasing the number of oocytes retrieved and eggs fertilized, in patients undergoing in vitro fertilization (IVF). Growth hormone as an adjuvant to IVF has been previously investigated, however ovarian response outcomes have been conflicting. Some studies show no increase in ovarian response while others show an increase in oocytes retrieved and positive pregnancy tests, but not an increase in live birth rates. Due to conflicting outcomes, this study explored whether a growth hormone adjuvant to IVF would increase ovarian response in patients with previously poor ovarian response defined as less than 3 oocytes retrieved. This retrospective study was from October 2022 to October 2023 and a total of 24 female participants ages 32 to 46 years old were included. In order for participants to meet criteria for this study they had poor ovarian response in at least one previous IVF cycle, defined by less than or equal to 3 follicles, with subsequent cycle(s) using a growth hormone adjunct. Using a within subject design, participants in this study acted as their own controls using the data from their IVF cycle without growth hormone (control) and with growth hormone (experimental). The growth hormone was injected subcutaneously and ranged from 25units daily for 4 weeks to 2-3 units daily for 1-2 months. Additional medications used for the ovarian stimulation protocol included gonadotropins, GnRH agonist or antagonist, and a human chorionic gonadotropin. Variations in the medications chosen were based on the outcome of prior IVF cycles and poor ovarian response. The primary study outcome was the number of oocytes retrieved and fertilized. The secondary study outcomes were the total follicles, follicles greater than 15mm, and the embryo quality. Decision was made to include follicles greater than 15 mm in size because they likely reached maturity. After statistical analysis, the number of follicles greater than 15 mm and the total number of follicles with and without adjuvant growth hormone were not statistically different (P value of 0.268 and 0.085, respectively). In addition, the number of oocytes retrieved and fertilized with and without the addition of growth hormone were not statistically different (P value of 0.327 and 0.11, respectively). Lastly, the number of quality embryos with and without adjuvant growth hormone was not statistically significant (P value of 0.85). These findings suggest that human growth hormone adjuvant may not be beneficial in improving ovarian response. Prior similar research has conflicting results regarding the benefits of human growth hormone on ovarian response and these studies are often underpowered. Some of this is postulated to be secondary to the nature of the participants who already have poor pregnancy prognosis and no established dose and duration of growth hormone treatment. Akin to other studies, this study also had a small sample size. However, in the setting of a within subject design, as this study used, a smaller sample size is often still able to detect a causal relationship. Another benefit of the use of a within-subject design in this study, is that individual variations are removed and therefore it is more statistically powerful. While this study contributes to the ongoing debate surrounding the efficacy of growth hormone in fertility treatments, it also highlights the complexity of factors influencing IVF success. Further research with larger sample sizes and more controlled methodologies (standardization of growth hormone dose and duration of treatment) may be necessary to explore this topic more comprehensively.

A48 THE NEGLECTED CURRICULUM: A SYSTEMATIC REVIEW OF FINANCIAL LITERACY IN MEDICAL TRAINING

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Background: Financial literacy is important for medical professionals, affecting career choices and well-being. Despite its importance, formal financial education remains rarely included in medical training. This systematic review examines how financial literacy progresses from medical school through residency and into attending practice, and evaluates interventions designed to improve literacy at different career stages.

Methods: We searched the Semantic Scholar database to identify papers addressing financial literacy in medical trainees. After screening against inclusion criteria, we included 32 papers for full review. We extracted data on study design, participant characteristics, financial literacy measurements, and key findings related to literacy progression. The studies spanned from 2007 to 2024 and the majority

utilized cross-sectional survey study design (19). The population covered medical students (7 studies), residents (20), fellows (4), and attending physicians (4). Geographic distribution included the United States (25 studies), India (3), Canada (2), South Africa (1), and Turkey (1). We analyzed financial literacy development throughout the training pipeline and assessed educational program effectiveness at different career stages.

Results: Our analysis revealed a clear developmental progression of financial literacy throughout medical training. First-year medical students scored lowest (38-45% correct on assessments), with scores gradually improving through medical school (50-60% by graduation), residency (65-73% for early residents, 70-79% for senior residents), and into practice as attending physicians (75-85%). This trajectory demonstrated that financial knowledge accumulates with professional development. The progression was most pronounced in practical topics like loan management, while complex concepts like investment strategy showed slower improvement.

The transition from senior resident to early-career attending represented a critical period where financial literacy either accelerated or plateaued. Physicians entering private practice demonstrated faster growth compared to those in academic settings, likely due to increased exposure to business management responsibilities. Practice type emerged as more influential than specialty choice, with similar literacy challenges observed across specialties.

Gender differences persisted across training levels, with male trainees scoring 10-13% higher than females at all career stages. Socioeconomic background significantly impacted baseline literacy, with trainees from middle or higher socioeconomic backgrounds demonstrating better financial knowledge that persisted through training. However, the socioeconomic gap narrowed somewhat during residency, suggesting structured training environments may partially mitigate initial disparities.

Training programs offering even minimal structured financial education showed accelerated literacy growth compared to those without formal curricula. Few trainees had received formal financial education before entering medicine (less than 15% in most studies). Interest in financial education was consistently high across all career stages (over 80% in multiple studies), with attending physicians frequently reporting regret about insufficient financial training. The perceived importance of financial education increased significantly as trainees progressed, with senior residents and new attendings rating it nearly twice as important as first-year students.

Educational interventions showed effectiveness that varied by career stage. Early medical student interventions produced modest improvements (10-15% increase in assessment scores), while programs targeting senior residents and new attendings achieved more substantial gains (20-30%). The transition to attending practice emerged as a critical "teachable moment" when physicians demonstrated peak motivation for financial learning.

Interactive approaches incorporating case-based learning and personalized financial plans showed superior results compared to traditional lectures. Programs with physician instructors having financial expertise demonstrated better outcomes than those staffed by financial industry professionals. The optimal timing for interventions appeared to be during transitional periods: late medical school, final year of residency, and early attending years.

Conclusion: Financial literacy demonstrates a clear developmental progression throughout medical training, with scores steadily increasing from medical school through residency and into practice. The trainee-to-attending transition represents a particularly critical period where financial knowledge either accelerates or plateaus depending on the practice environment. Educational interventions show consistent effectiveness when properly timed and designed, with optimal impact during key career transitions. These findings emphasize the need for strategically timed financial education that evolves alongside the physician career lifecycle. Future studies should focus on defining optimal thresholds for competency, as well as topics of high utility at different career stages. Professional societies should increasingly prioritize assisting physicians to bridge the gap in financial education.

A49 RATES OF INTRAOPERATIVE COMPLICATIONS AND TREATMENT FAILURE WITH DOUBLE ENDOMETRIAL ABLATION

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Background: Radio frequency endometrial ablation (EA) is a procedure used to treat abnormal uterine bleeding (AUB). It is a less invasive method compared to hysterectomy, however the procedure fails to resolve AUB in 20-30% of patients. Double ablation (running the ablation cycle again if the endometrium is not fully ablated with a single cycle) is an off label use of the Novasure endometrial ablation device but is performed by some surgeons. To date, there has been no published research on the effectiveness of this method, or the rates of intraoperative complications.

Objectives: Measure the rates of treatment failure and intraoperative complications in patients who received single and double ablations using the Novasure device.

Study Design: A retrospective cohort study at a large academic hospital system. Patients who received EA between January 2017 and December 2021 were evaluated, and follow-up extended through May 2022. Charts were evaluated for intraoperative complications (hemorrhage, hematoma, infection, uterine perforation, gastrointestinal injury, or genitourinary injury) and late onset treatment failure (hysterectomy or lack of resolution of AUB).

Results: 89 patients were reviewed (61 single ablations, 28 double ablations). No intraoperative complications were observed in either group. The relative risk of treatment failure was not significantly different between the two groups.

Conclusions: The data from this study show that there is unlikely to be a large difference between single and double ablation in any outcome. A larger, more controlled study is needed to evaluate the procedures further as this study is not powered adequately. Preliminary results point to double ablation as being safe, but more data is needed.

A50 REMOVAL OF RETAINED RECTAL FOREIGN BODY USING OBSTETRIC FORCEPS: A CASE REPORT

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Background: The incidence of rectal foreign bodies is increasing in the United States. Of patients who present with retained rectal foreign bodies, most are male. 2Objects can be retained in the rectum after oral ingestion or, more commonly, are inserted transanally. Rectal foreign bodies pose risks including impaction, peritonitis, and perforation. Methods of removal include extraction manually, endoscopically, or via laparotomy. Many patients will ultimately require colostomy with surgical interventions. The literature documents the use of obstetric instruments being used to remove rectal foreign bodies including vacuum delivery systems and, more rarely, obstetric forceps. This case will review the transanal extraction of a rectal foreign body using Tucker-McClane obstetric forceps.

Case Report: A 50 year old male presented to the Emergency Department with a retained rectal object. On presentation, the patient was clinically stable, though he reported feeling constipated and bloated after four days with the object in situ. A CT abdomen and pelvis with intravenous contrast was performed which demonstrated a 8.2 cm spherical foreign body in the distal sigmoid colon with thickening of the distal sigmoid colon and rectum. There was no evidence to suggest perforation. The retained object was a sphere made of hard plastic with a light inside. A chain attached to the sphere had broken off, not allowing the patient to remove the object himself. Initial attempts made to evacuate the object in the emergency department included the use of an obstetric vacuum delivery system; however, the patient was unable to tolerate these attempts. He was then taken to the operating room for removal under general anesthesia. In the dorsal lithotomy position, the sphere was able to be palpated. Given the hard material of the object, it was not able to be grasped or penetrated with Kocher clamps or myoma screws. An obstetrical vacuum was able to guide the object caudally into the rectum, but the vacuum was not able to fully extract the object. Ultimately, an obstetrician-gynecologist applied Tucker McClane obstetric forceps around the object and was able to successfully deliver the sphere. A general surgeon subsequently performed endoscopy to confirm there were no rectal or sphincter lacerations. The patient was able to be discharged home the same day.

Discussion: In the management of rectal foreign bodies, lesser invasive techniques should be utilized before more invasive alternatives. Imaging via either abdominal X-ray or contrast enhanced CT of the abdomen should be performed if the patient is hemodynamically stable in order to assess size, position, location, and for possible perforation. Often rectal foreign bodies are unable to be manually extracted either due to position, shape of the object, or due to patient intolerance. These patients should be taken to the operating room for removal under anesthesia. As the incidence of rectal foreign objects continues to rise, the need for wider methods of extraction will be helpful in avoiding more morbid procedures such as laparotomy and colostomy for removal. In cases where a rectal foreign body is hard, smooth, and spherical, traditional methods of removal either manually or endoscopically can be especially difficult due to lack of purchase with traditional instruments.

On review of the literature surrounding using obstetric instruments for removal of rectal foreign bodies, vacuum delivery devices are more commonly used compared to obstetric forceps. There are some case reports of extraction with obstetric forceps using both a single blade technique as well as traditional method with two articulated blades. Similar to use of obstetric forceps in a vaginal delivery, there is a risk of laceration to the gastrointestinal tract; therefore, the use of endoscopy after extraction should be used to assess for these potential complications. The patient in our case had no lacerations or evidence of perforation. They were able to avoid more invasive surgery and were discharged home the same day. Emergency medicine physicians and general surgeons are most commonly the providers who perform extractions of rectal foreign bodies; however, there may be a role for obstetrician-gynecologists. In our case, the retained object was difficult to remove due to its size, shape, and material. A board certified obstetrician-gynecologist, who is trained in the insertion and articulation of obstetrical forceps blades, successfully removed the rectal foreign body without additional damage to the rectum or anus. Obstetric forceps should be considered as a potential instrument for extracting retained rectal foreign bodies in certain situations.

A51 NO PLACE LIKE HOME: A RETROSPECTIVE ANALYSIS OF INCREASING HOME BIRTH RATES IN NORTH DAKOTA'S MATERNITY DESERT (2015–2024)

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For centuries, giving birth at home in attendance of family and midwives was considered the standard. This paradigm

shifted in the early 20th century as physician-attended hospital deliveries became more common, especially among affluent women. By the mid-1970s, nearly all U.S. births occurred in hospitals or accredited birthing centers. Today, however, home births are once again gaining popularity. According to the Centers for Disease Control and Prevention (CDC), national home birth rates increased by 22% in 2019 and an additional 12% in 2020. There are several reasons why women may choose to deliver at home, including reduced medical intervention, increased autonomy during labor, familiarity and comfort, and dissatisfaction with hospital care. Economics may also play a substantial role, with some reports indicating hospital-based vaginal delivery may come with a fourfold increased price tag when compared to deliveries at home. The safety and potential adverse outcomes of home delivery have also been debated. While several retrospective analyses suggest planned home births are safe for low-risk individuals attended by certified nurse midwives, organizations such as the American College of Obstetricians and Gynecologists (ACOG) maintain that hospitals and accredited birthing centers are the safest, particularly considering increased risks for adverse neonatal outcomes, including seizures and mortality. Regardless, risk mitigation for adverse obstetric and neonatal outcomes alike hinges on the idea that emergent, high-level care is readily accessible in a timely fashion; a luxury those living in exceedingly rural or impoverished areas may not afford. While national level data of home birth rates have been well documented, recent, state-level patterns (especially rural regions) remain underexplored. North Dakota presents a unique case, as 74% of its counties are classified as maternity care deserts, more than double the national average of 35%, ranking it #1 in the nation for least access to maternity care by far. As such, understanding updated trends in home birth rates is essential for equipping local providers, emergency responders, and public health officials with the data needed to anticipate needs, allocate resources, and safeguard maternal and neonatal outcomes in North Dakota. The purpose of this study was to explore home birth rate trends in the state of North Dakota over the last decade. This retrospective analysis utilized public birth record data from the North Dakota Department of Health and Human Services for the years 2015–2024. Home births were defined as all deliveries occurring outside of hospitals or accredited birth centers. Annual home birth rates were then calculated and simple linear regression analysis was performed to assess trends over time. Home birth rates in North Dakota were found to rise from 1.06% in 2015 to 1.73% in 2024. Linear regression models demonstrated a statistically significant absolute increase in home birth rates by about 0.08% per year ($F(1,8)= 22.624$, $p = 0.001$, adjusted $R^2 = 0.706$), mirroring national trends. These findings underscore the urgent need to strengthen rural maternal care infrastructure and incorporate obstetric-friendly emergency transfer systems, ensuring that all birthing individuals, regardless of geography, have access to safe, timely, and equitable care.

A52 FOREIGN-BORN MOTHERS: AN ANALYSIS OF THE INCREASING RATES IN NORTH DAKOTA

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In 2024 almost 11% of the 11,000 North Dakota births were to foreign-born mothers. In the 18 years from 2006-2023, there were a total of 206,096 births in North Dakota with 19,183 (9.3%) being to foreign-born mothers. The vast majority of these mothers (80%) came from the following regions/countries of the world: Africa (6,082), Asia (3,553), Europe (1,777), Central America (1,713) and the Middle Eastern countries (1,007). Unfortunately, 2,198 mothers either did not or would not record their country of origin on the birth certificate. Many assume that most individuals immigrating to the United States settle in urban areas or highly populated coastal states like New York or California. However, in recent years, rural states such as North and South Dakota have experienced significant increases in immigration, with many rural communities previously facing depopulation now contending with the opposite (Weber, 2014). Despite this trend, little research has been conducted on the unique health needs of immigrant populations in rural settings, particularly in the context of obstetric and gynecologic care. Previous studies have found that refugee women face increased risks of stillbirth and spontaneous abortion and are less likely to receive adequate prenatal care (Harakow, 2021; Agbemenu, 2019). Among the several barriers to care, transportation to healthcare appointments is of special importance in rural areas (Ho, 2023), even more so in the context of relatively high-frequency obstetrical visits. Additionally, immigrants in the U.S. often experience stigma and marginalization, which can create barriers to accessing proper medical care (Chang, 2018). Poor reproductive health outcomes carry not just monetary costs, but also emotional and physical burdens for some of the most vulnerable members of society (Agbemenu, 2019).

North Dakota's foreign-born population has been steadily increasing, with the most rapid growth occurring between 2010 and 2014, during which the foreign-born population grew by 62.4%, the highest rate of any state (New American Economy, 2016). This population increase coincided with the North Dakota oil boom, which both created high-paying jobs and left many social services overstretched (Weber, 2014). Many of the jobs created, and thus the immigration into the state were in rural areas, which were already relatively underfunded. This, combined with a hesitance to invest in social services born of previous boom-bust cycles in the state, have a disproportionate impact on immigrant populations (Weber, 2014). By 2018, immigrants made up 5% of North Dakota's population, and

another 5% of native-born residents had at least one immigrant parent (American Immigration Council, 2025). Immigrants in North Dakota play a crucial role in revitalizing communities that were previously in decline, contributing significantly to the rural healthcare workforce and generating over $120 million in tax revenue in 2014 (New American Economy, 2016) and over $200 million in tax revenue in 2018 (American Immigration Council, 2025).

Immigrants comprise a diverse group of individuals and cultures which may respond better to certain interventions. Tracking the trends in foreign-born mothers' country of origin can provide valuable insights for tailoring interventions and allocating funding where it will provide the greatest benefits. According to the North Dakota State Birth Records beginning in 2006 - 2008, most foreign-born mothers in North Dakota originated from Canada, Central America, and Europe; over the next 15 years, these demographics changed drastically, with data from 2021 - 2023 showing most foreign-born mothers to be from Africa, Asia, and Central America. From 2006 - 2023, most foreign-born mothers came from Africa, Asia, and Europe. Mothers born in Africa alone during the 2021- 2023 time period numbered greater than all combined foreign-born mothers of known origin from 2006 - 2008. Also during 2006 - 2008, there were more foreign-born mothers of unknown origin than all known origins combined. The much lower proportion of mothers of unknown origin in recent years allows for a better appreciation of the true makeup of the foreign-born mother community. These dramatic changes indicate a need to adapt approaches to provide culturally competent care to these individuals.

As births to foreign-born mothers continue to rise, healthcare providers must be prepared to address the distinct medical needs of immigrant populations, particularly those residing in rural areas. This project will explore the health disparities foreign-born mothers face and examine how living in a rural community influences these challenges. Additionally, it will analyze the current state of rural healthcare and immigration to provide insights that can help healthcare providers improve patient care.

A53 MALARIA IN THE UPPER MIDWEST: A PREGNANT REFUGEE'S JOURNEY TO DIAGNOSIS

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Malaria in pregnancy remains a significant global health challenge, posing substantial risks for both pregnant women and infants. An estimated 125 million pregnancies are exposed to malaria annually, causing over 100,000 deaths in pregnant women and 200,000 deaths in neonates each year. Despite significant advancements in prevention and treatment, malaria during pregnancy continues to contribute to high rates of maternal mortality, perinatal death, low birth weight, and preterm delivery in endemic areas. While malaria primarily affects people in the Global South, modern migration patterns have led to an increasing number of cases in non-endemic areas. North Dakota, which has one of the highest per capita rates of refugee resettlement in the United States, serves as a representative example of the challenge of providing culturally competent care to globally diverse populations. In these non-endemic areas, delayed diagnosis may occur due to low clinical suspicion and provider inexperience with tropical infectious disease. This case report highlights the need for heightened clinical awareness of malaria in pregnant migrants from endemic regions and the importance of incorporating a global health perspective into routine prenatal care.

A 31-year-old G4P2 female at 29 weeks gestation presented to a hospital in Fargo, North Dakota, with nausea, vomiting, and weakness. Having recently arrived from a refugee camp in Kenya, this was her first healthcare encounter in the United States. Initial workup revealed mild anemia, thrombocytopenia, and labs suggestive of dehydration, leading to a presumptive diagnosis of nausea and vomiting of pregnancy. She was given intravenous fluids and her symptoms transiently improved. Over the next few weeks she was managed as an outpatient with anti-emetics and oral hydration but continued to deteriorate, experiencing severe fatigue, weight loss, and persistent vomiting.

At 33 weeks' gestation, a routine hemoglobin test at a WIC appointment revealed a critically low level of 4.5 g/dL, prompting immediate hospital admission. Further investigation demonstrated elevated bilirubin (2.3 mg/dL), elevated AST (55 U/L), low haptoglobin (<8 mg/dL), and an elevated lactate dehydrogenase (687 U/L) suggesting severe hemolytic anemia. A peripheral blood smear confirmed intraerythrocytic Plasmodium falciparum parasites with 0.1% parasitemia. Infectious disease recommended the initiation of artemether-lumefantrine (Coartem) for treatment of malaria in pregnancy. During her seven day hospital stay she received five units of packed red blood cells. She responded well to treatment, and repeat malaria smear before discharge was negative.

Following discharge, biweekly antenatal surveillance was conducted due to ongoing concerns about fetal growth and amniotic fluid volume. At 38 weeks, labor was induced for IUGR. She had an uncomplicated vaginal delivery of a healthy male infant, weighing 6 lb 0.7 oz, with APGAR scores of 7 and 9. Placental pathology revealed no residual parasites, and the neonate underwent routine malaria monitoring for four weeks with no signs of infection.

This case underscores the diagnostic complexity of malaria in pregnancy, particularly in non-endemic regions where clinical suspicion may be low. Malaria may initially masquerade as hyperemesis gravidarum or anemia of pregnancy, delaying diagnosis and treatment. Though malaria can cause serious disease in all populations, pregnant women and their neonates are particularly vulnerable as parasites can sequester in the placenta, leading to impaired

fetal oxygenation and nutrient transfer and ultimately contributing to IUGR, preterm birth, and maternal anemia. In severe cases, complications such as hypoglycemia, pulmonary edema, and cerebral malaria can develop significantly increasing maternal morbidity and mortality

Despite global efforts to control malaria, challenges remain, including drug resistance, limited access to healthcare in some endemic regions, and the emergence of cases in non-endemic areas due to migration. Prevention strategies include insecticide-treated bed nets, chemoprophylaxis in high-risk populations, and recently developed malaria vaccines. For pregnant patients, prompt diagnosis and treatment with artemisinin-based combination therapies (ACTs) are critical to reducing adverse outcomes.

Healthcare systems must adapt to these demographic changes by implementing robust screening protocols, providing ongoing education for clinicians, and ensuring access to diagnostic tools and treatments for uncommon conditions. Incorporating global health curricula into medical education and fostering multidisciplinary collaborations with infectious disease specialists and public health experts are essential steps toward improving outcomes for immigrant and refugee populations.

This case also highlights the importance of ongoing research into the epidemiology, prevention, and treatment of malaria in pregnancy. As global migration patterns continue to evolve, healthcare providers must be equipped with the knowledge and resources to meet the needs of diverse populations. By embracing a global health perspective, clinicians can better address the unique challenges posed by infectious diseases like malaria, ultimately improving outcomes for mothers and infants both at home and abroad.

A54 AN ATYPICAL PRESENTATION OF TURNER SYNDROME IN AN ADOLESCENT FEMALE

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Primary amenorrhea is defined by absence of menarche by age 13 in an adolescent who has normal growth and secondary sexual development or by age 15 in an adolescent with abnormal growth and secondary sexual development. When evaluating for primary amenorrhea one must consider three major systems that could be responsible for absence of menstruation. Uterine anatomic abnormalities such as an imperforate hymen, Mullerïan dysgenesis, vaginal agenesis, or a transverse vaginal septum. Neuroendocrine regulation via the hypothalamic-pituitary-ovarian (HPO) axis and adrenal synthesis pathways responsible for both the menstrual and uterine cycles could be involved and absence, underactivity, or overactivity in different checkpoints of this system may be the culprit. Hormonally responsive endometrial tissue which differentiates and sheds in the presence of the appropriate hormones if absent, as seen in Asherman syndrome, may be responsible. The most common cause of primary amenorrhea is Turner syndrome.

Turner syndrome is a genetic disorder characterized by a 45,XO (monosomy), 46,XX/45,XO (mosaic), or 46,Xi,(Xq) (isochromosome) karyotype. Half of patients present with the monosomic form in which all cell lines are derived from a 45,XO cell lineage while most others present with mosaicism with at least 1 cell line being derived from a non-45,XO karyotype. A smaller subset of patients presents with an isochromosome or duplication of the long arm of the X chromosome. The pathogenesis of karyotype abnormalities in Turner syndrome commonly results from paternal meiotic nondisjunction in monosomy and mitotic errors in mosaicism. Isochromosome presentation can result from either meiotic or mitotic duplication of a long or short arm of the X chromosome, though most commonly the long arm.

Not all patients will present with the same constellation of symptoms. In neonates the most common finding is edema of the hands and feet, though not always present. Turner syndrome is commonly diagnosed in adolescent patients presenting with post-pubertal height of less than 5ft. Consideration for diagnostic testing is supported by at least 2 of the somatic findings: short stature, metabolic abnormalities (overweight, hypertension), craniofacial abnormalities (high palate, micrognathia, prominent epicanthal folds, low-set ears), musculoskeletal abnormalities (osteoporosis, shield chest), dermatologic/lymphoreticular abnormalities (nail hypoplasia, pigmented moles, lymphedema, cutis laxa, keloids), cardiac abnormalities (coarctation of the aorta, bicuspid aortic valve), intellectual disability, intestinal telangiectasia, and deafness.

Diagnostic imaging classically reveals streak ovaries, resulting from premature ovarian failure, and potentially other genitourinary abnormalities. Lab values typically reveal an elevated total gonadotropin level with an FSH of greater than 50mIU/mL and LH of greater than 90mIU/mL. Urinary estrogen is low due to insufficient ovarian production and lower filtered load.

A 17-year-old nulligravid female presented to an obstetrician-gynecologist for evaluation of primary amenorrhea. She had never experienced a menstrual period, spotting, vaginal bleeding or discharge. Past medical history revealed headaches, recurrent otitis externa prompting 5 ear surgeries including myringotomies and cochlear implant placement. Family history was significant for short stature. On sexual history, the patient had never had sexual intercourse. Physical examination was negative for cervical and axillary lymphadenopathy. Pelvic examination revealed normal pubic hair distribution and external female genitalia. A pediatric speculum was inserted, though cervical examination proved difficult for this patient, thus examination was terminated early. Laboratory evaluation of TSH, free T3, free T4, anti-Mullerian hormone, testosterone, prolactin, luteinizing hormone, FSH, estradiol, DHEAS, and 17-hydroxyprogesterone and diagnostic imaging with a transabdominal ultrasound were planned. Transvaginal ul-

trasound of the internal pelvic organs was not preferred given the patients inability to tolerate pelvic examination.

Laboratory values revealed an elevated TSH (5.36 IU/mL), free T3 (5.06 pg/mL) and FSH (27.1 mIU/mL) and low estradiol (<15 pg/mL), testosterone (11 ng/dL), and anti-Mullerian hormone (<0.03 ng/dL). Transabdominal ultrasound showed a small uterus, endometrial thickness of 3mm, and adnexa without separately identifiable ovaries. These findings suggest premature ovarian failure prompting genetic testing. A Mayo clinic CHCRB test for Chromosome Analysis, Congenital Disorders, Blood was ordered to assess for congenital chromosome abnormalities. Results showed 20 chromosomes in metaphase, 16 revealing monosomy (45,XO) and 4 showing disomic (46,X,r(X)) with a ringed X chromosome. These findings align with the mosaic form.

This case highlights subtle findings that may prompt investigation for Turner syndrome in patients with primary amenorrhea. Though the only typical findings in this case were short stature (though positive in family history) and primary amenorrhea. The history of recurrent otitis media with subsequent hearing loss may represent maldevelopment of the cervical lymphatics. In many typical cases this abnormality may cause the constitutional webbed neck finding. Mosaicism represents a small subset of Turner syndrome patients, though identification proves important for support and management.

A55 BEYOND THE WOMB: UNEXPECTED POSTNATAL PRESENTATION OF PRUNE BELLY SYNDROME

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Prune belly syndrome (PBS) is a rare congenital disorder characterized by a spectrum of symptoms, with most cases presenting a consistent triad: abdominal wall musculature deficiency, cryptorchidism, and urinary tract abnormalities. Aplasia or hypoplasia of the abdominal wall muscles generally has a thin, wrinkled skin or "prune-like" appearance. Aside from the pathognomonic triad, the presentation of PBS often varies and coexists with other associated anomalies involving the musculoskeletal, gastrointestinal, and cardiopulmonary systems. The exact etiology of PBS remains unknown. The condition primarily affects male infants, occurring in approximately 3.6 to 3.8 per 100,000 live male births and 1.1 per 100,000 in females. The detection of PBS features has appeared on ultrasound as early as 10-13 weeks of gestation primarily due to obstruction or stricture of the urinary tract. However, early findings of PBS on ultrasound were associated with very poor prognosis including intrauterine fetal demise. Therefore, establishing the diagnosis of PBS antenatally plays an essential role so physicians can provide expectant parents with appropriate management strategies and adequate counseling and support.

This case report details the prenatal course of a 33-year-old primigravida woman at 27 weeks and 3 days of gestation who underwent a primary cesarean delivery of a nonviable male infant due to failure to progress following induction of labor. Past medical history is significant for type 2 diabetes mellitus managed with metformin and insulin glargine, exogenous obesity, and attention-deficit/hyperactive disorder (ADHD). Based on the characteristic findings on clinical examination, PBS was suspected to be the most likely diagnosis. An ultrasound performed at 20 weeks of gestation revealed fetal malformations, including the absence of structures below the diaphragm and a large fluid-filled structure thought to be separate from the fetus. Initially, these findings were suspected to be consistent with amniotic band syndrome resulting in a limb body wall complex. Follow-up ultrasonography confirmed the previous observations and indicated that the fetus would not be viable.

At delivery, the nonviable fetus exhibited significant abdominal ascites, the absence of abdominal musculature, and a two-vessel umbilical cord, which was normal in length. A histopathology examination of the placenta revealed hydrops placentalis without any infectious etiology. Notably, the placental weight and size were greater than the 95th percentile for the gestational age of 27 weeks. Chromosomal microarray analysis demonstrated normal results. Unfortunately, an autopsy was not performed due to financial constraints, including the additional costs associated with transportation to an autopsy facility. Despite appropriate prenatal care, ultrasound evaluation failed to accurately diagnose PBS in this case, underscoring the importance of provider discretion when interpreting ultrasound imaging.

This report further explores the obstetrical care provided to the patient, her associated health conditions, and the prenatal screening procedures undertaken. By presenting this case, we aim to enhance awareness and diagnostic accuracy of PBS, aiding physicians in the timely identification and management of this condition.

A56 THE CHOICE BETWEEN INTRAUTERINE CONTRACEPTIVE DEVICE OPTIONS: EXAMINING THE EVIDENCE (2025)

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Introduction: A wealth of clinically relevant information on long-acting reversible contraception (LARC) is available to support shared decision-making and enhance patient discussions. A scoping review of the topic was conducted to

identify and present key clinically applicable evidence, providing valuable insights for clinical practice

Methods: A comprehensive review of published literature was conducted to identify key clinical aspects of intrauterine contraceptive device selection, excluding contraceptive implants from the scope of long-acting reversible contraception. A systematic search was performed using the PubMed and Web of Science databases, covering publications from 2015 to 2024. The review followed PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure methodological rigor. Multiple search strategies were employed to capture relevant clinical data comprehensively. Given the diverse nature of medical evidence, no study types were excluded, allowing the inclusion of randomized controlled trials, cohort studies, clinical perspectives, reviews, and case reports.

Results: The review examined data obtained through multiple search strategies, focusing on commercially available intrauterine contraceptive devices in the U.S., including the Copper T380 and levonorgestrel intrauterine systems. Key aspects of device use were analyzed, including contraceptive effectiveness, recent updates in duration of use (e.g., Mirena extended from 5 to 8 years, Paragard from 10 to 12 years), and comparative complication rates (e.g., expulsion, embedment, fracture, malposition, perforation, and migration). Additional factors reviewed included common side effects such as dysmenorrhea and heavy menstrual bleeding, relative contraindications, pain associated with insertion and mitigation strategies, the relevance of device frame size, and the potential role of ultrasound for pre- and post-insertion assessment. While the full scope of this review cannot be presented in this abstract, the findings can be detailed in a more comprehensive format.

Discussion: The effectiveness, ease of use, and simplicity of LARC, particularly in comparison to permanent sterilization, underscore its significant impact on female reproductive health. This topic warrants discussion in a large forum of Obstetrics and Gynecology practitioners. A systematic or comparable review like the one presented here does not appear to be readily available in the published medical literature.

A57 RACIAL/ETHNIC HEALTH OUTCOME DISPARITY IN MATERNAL MORTALITY: ADDRESSING THE PROBLEM

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Introduction: Racial and ethnic disparities in health outcomes, particularly in maternal mortality, have been highlighted in recent times. This issue demands a thorough analysis due to its profound social and medical implications. Evidence from public data in obstetrics and gynecology highlights a systemic bias that affects patient care. Beyond the well-known racial disparities, ethnic disparities in maternal mortality are also evident, as demonstrated by data from the National Center for Health Statistics in 2024. These disparities suggest that implicit biases, possibly linked to skin color, may influence healthcare outcomes. It is crucial to explore these biases to understand their impact on perinatal care

Methods: A comprehensive literature review was conducted using the PubMed database, focusing on articles published between January 2020 and December 2024. The search targeted English-language manuscripts addressing racial and ethnic disparities in maternal mortality. A total of 243 articles were identified, and 64 were selected for detailed review based on their relevance and conclusiveness.

Results: Analysis of the reviewed manuscripts revealed critical insights into maternal mortality disparities. Contrary to widely held beliefs that Black women face a threefold greater risk of mortality during childbirth, the intersection of ethnicity and race (i.e., women of color) actually reveals a four-fold increased risk compared to white women. Furthermore postpartum hemorrhage (PPH) emerges as the leading cause of maternal mortality. The data also indicate that Black women are more frequently delivered via cesarean section than White women. Additionally, the increasing rates of cesarean deliveries have led to a higher incidence of uterine scarring, contributing to the development of placenta accreta spectrum (PAS), which may be exacerbating the rising incidence of PPH. These findings underscore the urgent need for targeted interventions to address these disparities and improve maternal outcomes.

Discussion: It has been well-recognized that race and ethnicity, as social constructs, have little to do with any biological cause of maternal mortality. Reports suggest that disparities in maternal mortality, particularly among women of color, may be best explained by delays in providing optimal therapy for conditions like postpartum hemorrhage (PPH). Instead of biological differences, these disparities may be more closely related to implicit biases among healthcare providers, though research in this area is still developing. Therefore, it is crucial to focus our efforts on educating all healthcare professionals, including practicing physicians, nurses, and medical students, to address and rectify these disparities. By fostering a more equitable healthcare environment, we can work towards significant improvements in maternal health outcomes across diverse populations.

A58 NAVIGATING DIAGNOSTIC CHALLENGES: DISTINGUISHING BETWEEN ENDOMETRIAL STROMAL NODULE AND ENDOMETRIAL STROMAL SARCOMA IN A YOUNG PATIENT

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Background: Endometrial stromal tumors, including Endometrial Stromal Nodule (ESN) and Endometrial Stromal Sarcoma (ESS), originate from the stromal tissue of the endometrium but differ significantly in their clinical behavior and histopathological characteristics. ESNs are benign, well-circumscribed tumors that do not infiltrate surrounding tissues, whereas ESS is malignant, with potential for local invasion and metastasis.

Case Presentation: A 27-year-old, gravida 0 para 0, presented with ongoing heavy menstrual bleeding. Pelvic ultrasound revealed an anteverted uterus with a complex heterogeneous mass, initially suspected to be a submucosal leiomyoma. A hysteroscopic myomectomy was performed but terminated early due to reaching a maximal fluid deficit of 2,500 mL, caused by a large endocervical mass resembling a submucosal fibroid and difficulty maintaining hydrodistention. Histopathology suggested a differential diagnosis of ESN versus low-grade ESS, with myometrial invasion difficult to assess due to the fragmented curettage specimen. Immunohistochemical stains (IHS) were performed. Diffuse or patchy positivity for Caldesmon, CD10, Cyclin D1, Desmin, ER, PR, and SMA, is consistent with an endometrial stromal neoplasm (ESN), but it does not reliably differentiate between an endometrial stromal nodule (ESN) and low-grade endometrial stromal sarcoma (LG-ESS).

Concerned about fertility preservation, the patient was distressed by the potential need for a hysterectomy. Pelvic MRI identified a prolapsed endometrial polypoid mass in the lower segment/endocervical cavity measuring 4.8 cm, with no adnexal masses or pelvic adenopathy. A Gynecologic Oncologist recommended a repeat hysteroscopic excision of the endocervical/lower uterine mass. Further workup included negative CT scans of the abdomen, pelvis, and chest for metastatic disease. A repeat hysteroscopic excision was performed, successfully resecting the mass down to the endometrial base and possible myometrium.

Despite these efforts, histopathology reports remained inconclusive in differentiating between ESN and low-grade ESS. The final pathology report indicated that the differential diagnosis includes both ESN, a benign lesion, and low-grade ESS. It noted that the distinction between these entities typically requires a hysterectomy specimen for definitive diagnosis. Clinical correlation was recommended. While uterine smooth muscle was present and some invasion appeared to be present, definitive criteria for low-grade stromal sarcoma were not identified.

Clinical Insights

- Endometrial Stromal Nodule (ESN): ESNs are benign and typically symptomatic, presenting with abnormal uterine bleeding in some cases. They are characterized by well-defined borders and uniform cells with no significant atypia. Surgical excision is usually curative.
- Endometrial Stromal Sarcoma (ESS): ESS is malignant, with low-grade forms capable of recurrence and metastasis. Histologically, ESS shows infiltrative growth with atypia and a higher mitotic rate. Treatment often involves a hysterectomy and may include additional therapies.

Management Plan

- Consultation with a Gynecologic Oncologist: Referral for specialized management, who recommended a chest, abdominal, and pelvic CT scan with IV contrast for accurate staging and assessment of disease spread. This imaging helps evaluate potential metastasis, guide treatment decisions, and establish a baseline for future monitoring.
- Pelvic MRI: To assess for myometrial invasion and further characterize the uterine lesion.
- Abdominal, pelvic, and chest CT: To exclude metastasis.
- Fertility-Sparing Options: Discussed conservative management if the lesion is benign or a low-grade malignancy without invasion.
- Hormonal Therapy: Consideration of progestins or GnRH analogs to manage symptoms.
- Regular Follow-up: Implemented a schedule for repeated imaging and clinical assessments.

Conclusion: This case underscores the importance of distinguishing between ESN and ESS for accurate diagnosis and management. A multidisciplinary approach is essential to balance optimal medical care with the patient's reproductive goals, emphasizing the need for continued monitoring and patient-centered care.

A59 PAIN PERCEPTION DURING PLACEMENT OF A COPPER INTRAUTERINE DEVICE USING A SINGLE-HAND INSERTION DEVICE

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Introduction: A single-hand Paragard® intrauterine system (IUS) inserter was investigated for insertion and safety. The objective of this sub-analysis is to explore patient reported pain during placement of a copper intrauterine device (IUD).

Methods: In this phase four, multicenter clinical study, a total of 117 subjects underwent an IUS placement attempt with the redesigned inserter. Patients reported pain scores on an 11- point Likert scale (0-10) immediately after: speculum placement, tenaculum placement, uterine sounding, and IUD insertion attempt. Analgesia was administered at the discretion of the investigator.

Results: In 117 placement attempts, the mean pain scores for all steps of IUD insertion were in the mild range 0-5 (1.3-4.1). Similar pain scores and placement success were seen in nulliparous and parous patients. Investigators utilized cervical dilation in 41% of patients (mechanical 36%, misoprostol 5%) and analgesics in 59% of patients (oral analgesia 26%, cervical block or topical analgesia 46%) with some patients receiving more than one analgesic. No significant differences in reported pain based on dilation or use/type of medication were observed. Perceived pain at insertion was not affected by uterine positioning, nor was pain correlated with clinician reported ease of insertion. The only factor identified to be correlated with pain score at insertion was the pain reported at the sounding phase of procedure.

Conclusion: In this study, perception of pain during IUD insertion is an individualized experience and is not significantly impacted by analgesic or patient characteristics but may be influenced by patient pain tolerance or anticipation.

A60 PRIMARY EXTRANODAL MARGINAL ZONE B CELL LYMPHOMA OF THE OVARY, FALLOPIAN TUBE, AND UTERUS: A RARE CASE REPORT AND REVIEW OF THE LITERATURE

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Purpose: To report a rare case of extranodal marginal zone B cell lymphoma of the ovary, fallopian tube, and uterus.

Methods: Case report.

Results: A 78-year-old nulliparous female with several year-history of intermittent periodic burning in the vulva managed with topical estrogen, presented to her gynecologist due to acute worsening of vulvar pain. A transvaginal ultrasound was performed revealing a left adnexal tubular mass. She was then referred to Gynecology Oncology for management. She endorsed some lower back pain and intermittent tenderness to palpation in bilateral lower pelvis and denied any fever, malaise, unintentional weight loss, or night sweats. Pelvic examination was benign, revealing no adnexal or uterine tenderness, fullness, or masses. Preoperative laboratory results, including a complete blood count, liver enzymes, and serum electrolytes were all within normal limits. The patient elected to proceed with total robotic hysterectomy, bilateral salpingo-oophorectomy, with plan for intraoperative frozen pathology of the adnexal mass. Intraoperative frozen section of the left fallopian tube mass showed a small blue cell tumor, favoring lymphoma, at which point the decision was made to proceed with staging. An infracolic omentectomy was performed and left pelvic sentinel lymph node were sent for analysis. Examination of histologic sections of the ovary revealed effacement of the architecture by a diffuse atypical lymphoid infiltrate composed predominately of small CD20(+) B-lymphocytes, including few with pale cytoplasm. Similar findings were noted in the endometrium, myometrium, serosa, left fallopian tube and ovary, and left pelvic sentinel lymph node (see Figure 2).

Immunohistochemical studies showed that the neoplastic cells were positive for PAX-5, and IgM, with low labeling of nuclei by Ki-67 (~10%). They were negative for CD5, Cyclin D1, LEF1, IgG and CD30. CD3 was positive in T cells. ISH for EBV encoded RNA was negative. Flow cytometric immunophenotyping performed on fresh tissue demonstrated an abnormal population of kappa-restricted, CD20(+), CD19(+), CD79b(+), CD22(+), CD5(-), CD10(-), CD23(-) and CD38(-) small B-cells. The neoplastic cells comprised ~70% of lymphocytes. Molecular study was positive for MYD88 mutation but negative for CXCR4 was performed and was not detected. The patient was seen in Bone Marrow Transplant Clinic one month post-operatively. A hepatitis panel and human immunodeficiency virus (HIV) testing were nonreactive and lactate dehydrogenase was within normal limits. SPEP was obtained showing no monoclonal protein; serum free kappa light chain 12.8; serum free lambda light chain 9.4; and kappa:lambda 1.36. Given no IgM monoclonal gammopathy or CXCR4 mutation detected, a diagnosis of marginal zone lymphoma was rendered. A positron emission tomography scan was obtained which showed no evidence of lymphoma after surgical intervention. Through shared decision making with the patient, a plan was made to obtain surveillance imaging twice yearly.

Conclusions: Primary EMZL of the female genital tract is uncommon, with involvement of the fallopian tube and ovary being exceedingly rare, with only a few cases reported. To our knowledge, this is only the second case described involving the ovary. EMZL is an indolent lymphoma which can be asymptomatic on presentation. Among symptomatic cases, the clinical presentation tends to depend on the site of the organ involved. For previously described cases of EMZL involving the female genital tract, presenting symptoms were nonspecific including pelvic pain, dysmenorrhea, or menorrhagia, all lacking typical B symptoms commonly seen in lymphomas, making the diagnosis quite difficult. Our patient had a similar clinical presentation with no B symptoms and only intermittent tenderness to pelvic palpation. Marginal zone lymphomas are well known to be associated with autoimmune diseases, infectious etiologies, HIV, hepatitis C virus, or solid organ transplantation. The only other documented case of primary EMZL involving the ovary was associated with endometriosis. The authors hypothesized that the inflammatory mediators seen in endometriosis may share similarities with autoimmune diseases and infections in neoplastic transformation pathways through the stimulation of B-cell proliferation. Our patient was not found to have endometriosis or any of the common associations of autoimmunity or infectious etiology. Among the previously documented cases of primary EMZL involving the fallopian tube and ovary, all received surgery as their only treatment, except for one re-

quiring antibiotics for treatment of a concurrent Acinetobacter infection. All patients were managed with surveillance and proved to be disease free for at least 12 months. Likewise, our patient received surgery will be monitored with active surveillance. In conclusion, although EMZL of the ovary and fallopian tube is extremely rare, it should be maintained on the differential diagnosis if atypical lymphoid cells or dense lymphoid aggregates are observed in the surgical specimen.

A61 IDENTIFICATION OF PLACENTA ACCRETA SPECTRUM: A CASE SERIES

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Background: Technological advancements continue to increase the antenatal suspicion and diagnosis of placenta accreta spectrum (PAS) prior to delivery. Therefore, further understanding is needed regarding the characteristics and outcomes in preparation for continued expected growth in the number of cases and to better prepare providers for care of the complexity of care in providing for these patients. The purpose of this study is to review outcomes and maternal characteristics for cases with suspected PAS at a tertiary care center.

Methods: This is a retrospective case series performed at The University of Louisville from January 2024 through March 2025 with a review of patients with suspected PAS. All cases were delivered at a single site. Outcomes reviewed included antepartum care (consults, ultrasound findings, maternal obstetric/surgical history), operating room care (estimated blood loss, units of RBC transfusion, operative complications) and final pathology. Demographics and clinical factors were summarized and compared by CS history (one or fewer previous CS vs 2 or more) using two-sample test for continuous, Fisher exact for categorical, and Mann-Whitney test for non-parametric features.

Results: A total of 17 cases over a 15-month period were identified for suspected PAS. The average maternal age was 33.7 years. Patients had a range of 2 to 14 prior pregnancies. All patients except one had at least one prior cesarean section (1CS= 7, 2CS= 6, 3+CS= 4).

The average gestational age at time of delivery was 34 weeks and 3 days. Average birth weight was 2344.44g. 88.2% of infants were admitted to the Neonatal Intensive Care Unit (NICU) following delivery with 23.5% requiring intubation, 64.7% CPAP, and 11.7% remaining on room air. The average length of admission was 22 days, with two infants requiring transfer for higher level of pediatric care.

94.1% of patients had ultrasound evaluation with Maternal-Fetal Medicine at our institution, and 88.2% obtained a MRI to confirm diagnosis. Placenta previa was present in 14 cases (73.7%.). Imaging was sorted based on suspected degree of placental invasion with 10 suspected accreta cases (52.6%), 5 suspected increta cases (26.3%), and 2 suspected percreta cases (10.5%). There was one patient with PAS not suspected on imaging at outside institution with an accreta present at the time of delivery. In 5 cases, PAS was not confirmed at the time of delivery (26.3%). Of those cases that were confirmed at time of delivery, 5/13 (38.5%) were consistent with imaging suspicion, 5/13 (38.5%) had a higher level of placenta invasion, and 3/13 (23.0%) had a lower level of invasion.

The average blood loss during these deliveries was 1200ml with 9 patients requiring receipt of blood products. The average number of blood products received was 2 units. Only 3 patients had ureteral injury at the time of delivery, with one of those being intentional injury due to extent of placental invasion. Re-operation was needed in one patient due to continued intra-abdominal bleeding.

Overall, there was no statistically significant in patient outcomes based on number of prior cesarean sections. The cohort was further divided into 1 or less cesarean section vs multiple cesarean sections with no statistical significance in maternal blood loss, receipt of blood products, ureteral injury or need for re-operation. There was also no statistical significance in neonatal weight or APGAR scores at delivery.

Discussion: An extensive review of the 17 cases was performed including characteristics of our patient population, operative findings and severity of disease, radiographic findings consistency with pathology, and infant outcomes. Of particular interest is the rise of accreta cases after only one prior cesarean in our case population. Case statistics will continue to aid in guiding informed care for future accreta patients at our institution. We feel that our imaging correlates well with pathology evaluations, and this information is used for continued improvement in diagnosis.

A62 LYMPHOPLASMACYTIC LYMPHOMA/ WALDENSTRÖM MACROGLOBULINEMIA INITIALLY PRESENTING AS POSTMENOPAUSAL PELVIC PAIN AND BLEEDING: A RARE CASE REPORT AND LITERATURE REVIEW

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Purpose: To report a rare case of lymphoplasmacytic lymphoma/ Waldenström macroglobulinemia with predominant myometrial and cervical involvement.

Methods: Case report.

Results: A 57-year-old G2P2 postmenopausal female with a history of tubal ligation and HPV+ HSIL on pap smear presented with an eight-month history of pelvic pain with associated urinary urgency and pelvic pressure as well as fatigue and a single episode of abnormal uterine bleeding and unremarkable transvaginal ultrasound. Endometrial sampling via hysteroscopy was attempted but unable to be completed due to stenotic cervical os. The patient subsequently underwent definitive surgical management with a total robotic hysterectomy with bilateral salpingo-oophorectomy. Pathology showed atypical perivascular lymphoid aggregates suspicious for involvement by low grade B cell lymphoma involving the cervical stroma, myometrium, and bilateral fallopian tubes and ovaries, with predominant myometrial and cervical involvement. Differential diagnosis at the time included marginal zone lymphoma (MZL) and lymphoplasmacytic lymphoma (LPL). Additional testing identified a MYD88 p.L265P mutation and an IgM kappa paraproteinemia. A PET scan revealed hypermetabolic bilateral axillary and upper abdominal lymph nodes. The patient underwent a bone marrow biopsy and aspirate that solidified the diagnosis of IgM-type lymphoplasmacytic lymphoma / Waldenström macroglobulinemia (LPL/WM).

Conclusion: Lymphoplasmacytic lymphoma / Waldenström macroglobulinemia (LPL/WM) is an extremely rare and indolent low-grade B-cell lymphoproliferative neoplasm that often presents with vague symptoms or asymptomatically. While it most commonly involves the bone marrow, LPL/WM can sometimes involve the lymph nodes and spleen, and rarely the central nervous system, skin, and pleural cavities. To our knowledge, there have been only two cases previously described in the literature of LPL/WM involvement in the female genital tract; both of which had prominent involvement of the ovaries. Although exceedingly rare, LPL/WM involvement of the female genital tract should be considered on the differential diagnosis if atypical lymphoid cells or dense lymphoid aggregates are observed.

A63 ANTI-N-METHYL-D-ASPARTATE (NMDA) RECEPTOR ENCEPHALITIS ASSOCIATED WITH OVARIAN TERATOMA: A CASE REPORT

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Anti-N-methyl-D-aspartate (NMDA) receptor encephalitis is a condition often characterized by acute neuropsychiatric manifestations such as psychiatric symptoms, seizures, automimic instability, and cognitive dysfunction. This exceedingly rare condition is an autoimmune disease in which early diagnosis and treatment are crucial for improving patient outcomes.

We present a case of a 28-year-old female admitted with known NMDA encephalitis experiencing progressive worsening of confusion, memory loss, and agitation in the setting of imaging suggestive of a teratoma. The patient was transferred to our tertiary care center for further evaluation and treatment. A computed tomography scan with contrast illustrated a 40mm complex mass in the right adnexa. She was hospitalized for 37 days requiring immunotherapy, psychiatric, cardiovascular, and operative management. Subsequent removal of the teratoma resulted in rapid clinical improvement.

This case underscores the importance of surgical management for ovarian teratoma in a reproductive-aged female with NMDA encephalitis. A multidisciplinary approach should be employed and individualized treatment should be sought and escalated to clinical status. Current research is lacking regarding optimal treatment strategy for this disease.

A64 A LOOK AT A SINGLE PROVIDER'S PRIMARY C-SECTION RATE OVER MULTIPLE FACILITIES OVER A THREE-YEAR PERIOD

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Introduction: The number of cesarean sections performed each year continues to increase globally. In 2021, the World Health Organization (WHO) estimated that this route of delivery accounted for 21% of all births. The WHO anticipates that nearly 29% of all births will be born via cesarean section by 2030 and states that while cesarean section may be "essential and lifesaving surgery, it can put women and babies at unnecessary risk of short- and long-term health problems if performed when there is not medical need." (Caesarean section rates continue to rise, amid growing inequalities in access).

The Centers for Disease Control (CDC) continues to track cesarean section rates, and in April of this year, reported that the low-risk cesarean delivery rate (low risk is defined as nulliparous, term, singleton, vertex, and is often referred to as PC-02) was 26.6%. (Vital Statistics Rapid Release, Number 038 April 2025).

There is generally no agreed upon optimal primary cesarean section rate. In fact, the American College of Obstetricians and Gynecologists (ACOG) explicitly states, "…no single cesarean birth rate goal can be prescribed for a single clinician's practice or care setting…" (Calculation and Coding of Cesarean Birth Rates | ACOG)

The primary cesarean section rate is likely due to a myriad of factors and not just solely the responsibility of the delivering physician. It has been proposed that the facility's induction scheduling practice, duration of labor allowed before diagnosing arrest, use of hospitalists, nursing practices during labor, in addition to many other factors, may all contribute to the chance of a patient undergoing a primary cesarean section.

We previously reported on the primary cesarean section rate of a single provider who delivers at multiple institutions over the period of one year. Here, we add to this data.

Methods: Clinic data were reviewed from patients who saw a single practitioner, Jonathan Faro, MD, PhD, from October 1, 2021 through September 30, 2024. Patients were given the choice of where they would prefer to deliver: Memorial Hermann Hospital Memorial City, The Woman's Hospital of Texas, or Memorial Hermann Hospital Texas Medical Center. As this was a retrospective chart review and no identifying patient data were obtained, no IRB approval was requested.

As with our previous study, patients were excluded if they were not nulliparous, were not full term, did not have a singleton pregnancy, or if the fetus was not in vertex presentation.

Results: From October 1, 2021 through September 30, 2022, a total of 105 patients were delivered by the physician. (This excludes patients that the physician delivered for any other physicians while on call.) 57 of these were delivered at Hospital A, 46 were delivered at Hospital B, and only 2 were delivered at Hospital C. Of these 105 patients, 19 met the criteria to be considered under the PC-02 criteria. Of the 9 patients delivered at Hospital A by the Physician, 11% resulted in C-section. Of the 8 patients delivered at Hospital B by the physician, 50% resulted in a C-section. Of the 2 patients who delivered at Hospital C, none underwent C-section.

From October 1, 2022 through September 30, 2023 a total of 159 patients were delivered by the Physician. 133 of these were delivered at Hospital A, and 25 were delivered at Hospital B. (Hospital C had one patient, a multiparous vaginal delivery.) 72 of these 159 patients met the criteria to be considered under the PC-02 criteria. Of the 47 patients delivered at Hospital A by the Physician, 23.4% resulted in C-section (11 out of 47). Of the 7 patients delivered at Hospital B by the Physician, 28.6% resulted in C-section (2 out of 7).

From October 1, 2023 through September 30, 2024 a total of 145 patients were delivered by the Physician. 126 of these were delivered at Hospital A, and 19 were delivered at Hospital B. Out of these 145 patients, 56 met the criteria to be considered under the PC-02 criteria. Of the 49 patients delivered at Hospital A by the Physician, 22.5% resulted in C-section (11 out of 49). Of the 7 patients delivered at Hospital B by the Physician, 71.4% resulted in C-section (5 out of 7).

Discussion: With rates ranging from 0% to 71.4%, one can easily see that it may be anything but the provider responsible for determining the primary C-section rate. This data illustrates that other factors separate from the provider likely contribute to a patient undergoing a primary C-section. The total number of patients delivered by a provider at a specific facility likely has a major impact in determining the provider's primary cesarean section rate, and it is likely that there exists a certain threshold in which this number becomes more reliable. Providers with low volume at a facility may be inordinately affected by factors that would not impact their rate otherwise.

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