Title

245 Metabolomic biomarkers for preeclampsia prediction

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pregnancy to that of active maternal tobacco use. We did not see a decreased incidence of preeclampsia for active smokers, and we speculate that this may be due to underpowering to identify this association as less than 2% of our cohort identified as active smokers.

Table 1. Crude and adjusted odds of developing preeclampsia based on tobacco smoke exposure.

	Preeclampsia n(%)	No Preeclampsia n(%)	crude OR (95% CI); p-value	adjusted OR (95% CI)[a]; p-value
Model A				
Active	58 (11.1)	463 (88.9)	**1.36 (1.03-1.80); 0.03**	1.50 (0.96-2.23); 0.06
SHSE	81 (6.4)	1,188 (93.6)	**0.74 (0.59-0.93); 0.01**	**0.60 (0.40-0.86); 0.01**
Prior	279 (7.1)	3,647 (92.9)	**0.83 (0.73-0.95); 0.01**	0.91 (0.75-1.09); 0.32
Never	2,278 (8.4)	24,800 (91.6)	Reference	Reference
Model B				
Active ≥10 cig/day	11 (7.2)	141 (92.8)	0.85 (0.46-1.57); 0.60	N/A
Active <10 cig/day	47 (12.7)	322 (87.3)	**1.59 (1.17-2.16); 0.00**	1.63 (0.97-2.59); 0.05
SHSE	81 (6.4)	1,188 (93.6)	**0.74 (0.59 0.93); 0.01**	**0.60 (0.40 0.86); 0.01**
Prior	279 (7.1)	3,647 (92.9)	**0.83 (0.73-0.95); 0.01**	0.91 (0.75-1.09); 0.32
Never	2,278 (8.4)	24,800 (91.6)	Reference	Reference

Active, active maternal tobacco use; cig, cigarettes; OR, Odds Ratio; Prior, maternal tobacco use prior to but not during pregnancy; SHSE, secondhand smoke exposure during pregnancy.
[a]Adjusted odds ratios (aOR) were calculated based on potential confounders identified in univariate analysis. ethnicity, high school education, and presence of risk factors for developing preeclampsia (numeric composite of chronic hypertension, history of preeclampsia in prior pregnancy, obesity, gestational diabetes, nulliparity, advanced maternal age).

245 Metabolomic biomarkers for preeclampsia prediction

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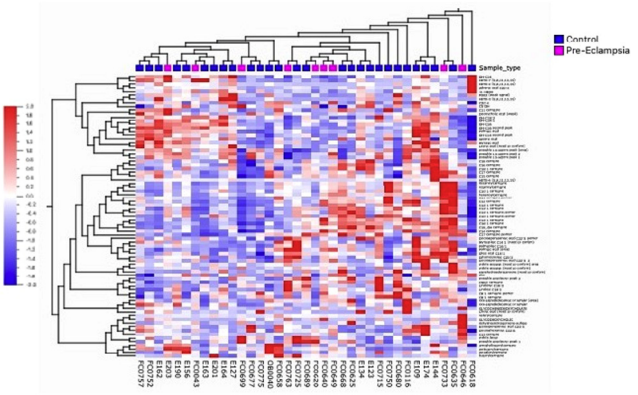
OBJECTIVE: In a pilot study, we demonstrated that metabolomic analysis of second trimester maternal serum from patients who developed preeclampsia had significant elevations in multiple unsaturated fatty acids and medium chain acylcarnitines and reduction in certain bile acids when compared to controls. A drawback to that pilot study was that patients were not fasting, thus these metabolomic differences might be confounded by the last meal consumed. The objective of this study is to validate the metabolomic findings from the pilot study among fasting gravida.

STUDY DESIGN: We prospectively collected fasting serum samples from 37 pregnant patients at 24-28 weeks gestation. 9 developed preeclampsia later in pregnancy and 28 served as controls. These samples were analyzed using Q-TOF mass spectrometry in a targeted protocol. We used Student's t-test to compare the metabolites between the two groups.

RESULTS: We obtained fasting serum from 9 patients who later developed preeclampsia and 28 controls. Maternal age, parity, and BMI were similar between the two groups. Figure 1 is a heat map representing a summary of the results of this fasting study. We found no statistically significant differences in the targeted unsaturated fatty acids and medium chain acylcarnitines. Among bile acids, cholic acid levels were four times lower in the preeclampsia cohort compared to controls (p=0.03).

CONCLUSION: Cholic acid was significantly lower in pregnancies that later developed preeclampsia compared to controls. Other metabolites discovered in the non-fasted discovery cohort were not validated in the fasted validation cohort. Taken together, the data from the two cohorts may suggest that pregnant women who later develop preeclampsia may metabolize fatty acids less effectively, thus leading to elevations in the circulating fatty acids breakdown molecules, and this difference in metabolism is less dramatic in the fasting state. Performing metabolomic profiling in fasting and fed pregnant women can further elucidate this postulation and correlate metabolomic profiles with pregnancy outcomes.

	Preeclampsia	Control
N	9	28
Age*	34.9 (3.6)	32.0 (4.7)
Parity*	1 (0.9)	1.4 (1.2)
Nulliparous	3 (33%)	6 (21.4%)
Pre-pregnancy BMI*	31.0 (7.8)	29.1 (7.6)
BMI at fasting blood draw*	32.3 (6.9)	31.2 (6.7)
GA at fasting blood draw*	24.8 (0.6)	26.9 (2.1)
GA at diagnosis*	39.3 (1.6)	--
GA at delivery*	39.3 (1.6)	38.7 (1.6)
Cesarean section	1 (11%)	8 (28.6%)
Female neonate	7 (78%)	15 (53.6%)
Birthweight in grams*	3500 (473)	3330 (545)
*Data represented as mean (standard deviation)		



246 An analysis of qualitative themes in yelp reviews of maternal fetal medicine (MFM) practices

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OBJECTIVE: To identify qualitative themes distinguishing poorly-rated practices from highly-rated practices offering MFM care.

STUDY DESIGN: We conducted an IRB-exempt, qualitative analysis of the publically-accessible online review platform Yelp. MFM practices were analyzed in over 30 highly-populated U.S. cities; reviews were only included on practices with 5+ total reviews. Reviews were coded for 14 qualitative themes grouped into either provider-specific or practice-specific areas with both positive and negative variations. Analysis was performed on the frequency of these themes as a function of 1- to 5-star rating.

RESULTS: A total of 1008 reviews were analyzed, with 69% being private practices, defined as not associated with an academic teaching center. The average star rating was 3.34 with 50% being