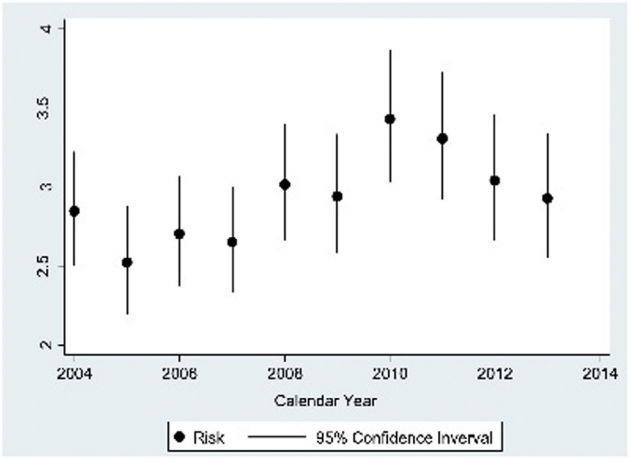

Figure 1: Incidence of uterine inversion (per 10,000 deliveries) over time.

Table. Associations between metabolic markers and breastfeeding duration in GDM

Metabolic marker tertiles	Time to weaning MV-adj HR (95% CI)	Wald chi square p value	Undesired weaning, N (%)	M-H Chi Square p
Fasting glucose, mg/dL		**.04**		**.04**
<93	1.0 (ref)		5 (21.7)	
93-101	.77 (.33-1.83)		6 (23.1)	
>101	1.84 (1.11-3.06)		12 (48.0)	
Hemoglobin A1c		**.01**		NS
<5.3	1.0 (ref)		5 (21.7)	
5.3-5.6	1.45 (0.87-2.41)		10 (38.5)	
> 5.6	2.51 (1.36-4.60)		10 (34.5)	
Body Mass Index, kg/m2		**<.01**		**<.01**
<34	1.0 (ref)		6 (20.7)	
34-40.6	1.22 (.77-1.94)		6 (21.4)	
>40.6	2.21 (1.24-3.94)		14 (56.0)	
Subscapular skin fold, mm		**<.0001**		**.04**
<28.3	1.0 (ref)		6 (21.4)	
28.3-33.0	3.66 (2.62-5.11)		10 (34.5)	
>33.0	2.82 (1.57-5.06)		10 (40.0)	

NS = not significant

925 Impact of metabolic dysfunction on breastfeeding outcomes in gestational diabetes mellitus

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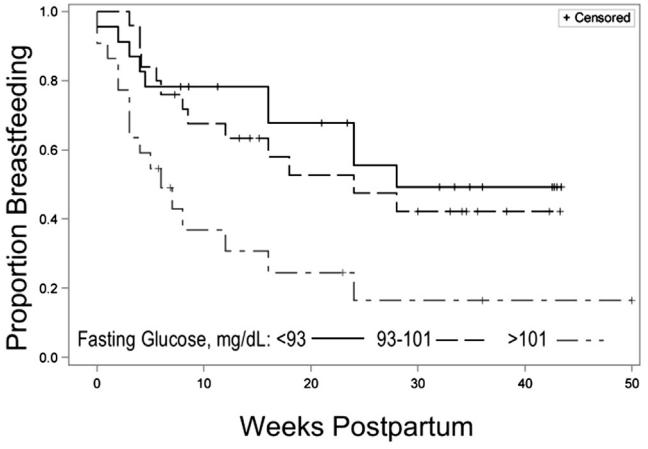
OBJECTIVE: Previous studies have noted an association between metabolic risk factors and breastfeeding outcome. We sought to assess the relationship between prenatal metabolic markers and breastfeeding (BF) duration in women with gestational diabetes mellitus (GDM).

STUDY DESIGN: Secondary analysis of a prospective randomized trial on a lifestyle intervention to improve metabolic health among women with GDM. Women were enrolled in the third trimester and were followed through 10 months postpartum. Metabolic and clinical measures were collected at enrollment, including oral glucose tolerance test results, insulin level, HOMA-IR, glycated hemoglobin (A1c), lipid panel, blood pressure, body mass index (BMI), and triceps and subscapular skinfold (SS) thickness. Women reported on postpartum questionnaires when they stopped BF and whether they breastfed as long as desired. We quantified differences in BF duration by tertiles of metabolic measures using Cox proportional hazards models, adjusting for BF intention, randomized treatment group, Black race, and study site. We further categorized undesired weaning prevalence by tertile, using Mantel-Haenszel chi square tests to test association with metabolic measure tertile. P <.05 was statistically significant.

RESULTS: 100 women were enrolled: 52% were non-Hispanic Black, 31% non-Hispanic White, 9% American Indian or Alaskan Native, and 8% more than one race. BF outcome data were available for 82 women. We found associations between fasting glucose, A1c, BMI, SS thickness, and hazard ratio for BF cessation (Wald chi square p <.05 for log(hazard ratio), Table). Women with higher fasting glucose, BMI, or SS thickness were at higher risk of reporting not having breastfed as long as they desired (Table). We did not find associations with other metabolic markers.

CONCLUSION: In women with GDM, higher fasting glucose, A1c, BMI, and SS thickness were associated with shorter BF duration. These mothers warrant closer postpartum follow-up and support to help them achieve their BF goals.

Figure: Among women with GDM, duration of breastfeeding by fasting glucose on 3h OGTT



926 Placentophagy: comparison of plausible biologically active compounds that might support this practice

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OBJECTIVE: Proponents of placentophagy claim that consumption of encapsulated human placenta improves maternal postpartum mood, energy, and milk supply. The objective of our study was to determine the amount of biologically active compounds in encapsulated placental tissue that may make these claims plausible, and to determine if the process of encapsulation impacts the concentrations of these compounds.

STUDY DESIGN: Placentas from 10 healthy pregnancies were collected immediately after caesarean delivery. Placental tissue was washed and immediately frozen at -80°C or processed for encapsulation within 48 hrs by: steaming (30 min, 75°C), dehydrating (18-24 hours, 60°C), grinding in a food mill, and encapsulating in gelatin capsules.

Protein, iron, and cortisol content was analyzed using standard assays and compared between flash frozen and processed placenta from the same subject by Student's t-test.

RESULTS: Maternal age at delivery was 34.5+1.6 years, gestational age was 39.14 + 0.06 weeks, birth weight was 3291+139g and placenta weight was 623+35g. Protein and cortisol were significantly higher ($p<0.05$) in the encapsulated samples while iron content did not change (Table 1). Increased cortisol content (5.5 fold) and protein (2 fold) is likely due to loss of water during encapsulation and was similar to the measured wet to dry tissue weight ratio of 6.5. We found a significant correlation between dehydrated placental iron and maternal hemoglobin ($R2=0.321$, $p<0.05$). Capsule cortisol levels correlated with maternal age ($R2=0.329$, $p<0.05$).

CONCLUSION: Encapsulation preserves cortisol and total protein however consumed at the recommended dosage, 6-12 capsules per day, is unlikely to have relevant biological activity or clinical benefit. Iron content was the same in processed and frozen samples suggesting iron was lost during processing and the recommended daily consumption of capsules does not meet the recommended daily allowance.

Table 1: Protein, Iron and Cortisol content of placental tissues.

Analyte	Frozen Tissue	Dehydrated Tissue	Content per gel cap	Total Intake per day
Protein (ug/mg)	8.44 ± 0.32	17.05± 0.81*	8.17 ± 0.39 mg	49-98 mg
Iron (ug/mg)	8.16 ± 0.37	7.74 ± 1.27	16.15 ± 2.66 ug	97-194 ug
Cortisol (pg/mg)	4.81 ± 1.54	26.55± 2.52*	12.72 ± 1.20 ng	76-153 ng

* P<0.05 vs Frozen tissue

927 Pregnancy, delivery, and neonatal outcomes among women with asthma

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OBJECTIVE: To examine the association between maternal asthma and pregnancy, delivery and neonatal outcomes.

STUDY DESIGN: We carried out a retrospective cohort study using the Health Care Cost and Utilization Project-Nationwide Inpatient Sample database from 2003 to 2011. Using this database, we created a birth cohort and compared pregnancy, delivery and neonatal outcomes in asthmatic to non-asthmatic patients using logistic regression analysis, adjusting for baseline characteristics.

RESULTS: In a cohort of 7,772,999 pregnant patients, 223,236 (2.9%) were asthmatics. Rates of asthma increased over the study period from 1.9% in 2003 to 3.7% in 2011, $p<0.001$. Asthma was associated with an increased risk of preeclampsia (aOR 1.2, 95% CI 1.17-1.23), gestational diabetes (aOR 1.25, 95% CI 1.22-1.27), placenta previa (aOR 1.29, 95% CI 1.23-1.36), abruptio placenta (aOR 1.06, 95% CI 1.02-1.10), small for gestational age (aOR 1.17, 95% CI 1.14-1.21), PPROM (aOR 1.07, 95% CI 1.03-1.11), preterm delivery (aOR 1.08, 95% CI 1.07-1.10), chorioamnionitis (aOR 1.12, 95% CI 1.09-1.16), postpartum hemorrhage (aOR 1.10, 95% CI 1.07-1.12), venous thromboembolism (aOR 2.61, 95% CI 2.42-2.81), maternal mortality (aOR 1.67, 95% CI 1.30-2.14) and congenital anomaly (aOR 1.85, 95% CI 1.76-1.94). Patients with asthma were more likely to deliver by cesearan section (aOR 1.04, 95% CI 1.03-1.06) and less likely to have an assisted vaginal delivery (aOR 0.83, 95% CI 0.81-0.85).

CONCLUSION: Asthma is associated with an increase in adverse pregnancy, labor and neonatal outcomes. Close surveillance of asthmatic patients during the prenatal period is warranted and care in a tertiary care hospital is advised.

928 Cost implications of higher term labor induction rates

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OBJECTIVE: Recent analyses suggest that a greater use of induction of labor (IOL) - to encourage delivery by the 39th week of gestation - might improve childbirth outcomes. However, concerns have been raised that a systematic increase in the use of IOL would be prohibitively expensive. We wished to study the financial impact of a greater use of IOL using actual financial data.

STUDY DESIGN: Retrospective cohort study using hospital charge data. Two previously published studies involving both nulliparous and multiparous women compared the clinical outcomes of mothers and neonates following two methods of care: 1) The Active Management of Risk in Pregnancy at Term ("MORE-IOL"), which involved the regular use of risk-based but officially "non-indicated" IOL, and 2) "Usual Care", which involved the use of IOL only in the presence of an accepted "indication". Detailed hospital charge data generated by the maternal and neonatal admissions of subjects within the two published studies was previously obtained and analyzed. This study reports the means, medians and ranges of charges generated by the mother-neonatal pairs of each study group. Sub-group analyses included mother-only charges, neonate-only charges, and charges generated in each study group as a function of mode of labor onset (i.e., IOL vs. spontaneous labor).

RESULTS: The MORE-IOL group (n=200), as compared to the Usual Care group (n=600), had a higher IOL rate (61% vs. 21%). Hospital charge data was available for 95.1% of subjects. Missing data appeared to be non-differential. Charges for mother-neonate pairs in the two groups were similar ($p = 0.32$). Maternal charges trended lower in the MORE-IOL group ($p=0.66$). Neonatal mean charges appeared higher in the MORE-IOL group, but median charges were significantly lower ($p = 0.005$). This discrepancy occurred because there were more MORE-IOL neonatal charges both below the 50th percentile and within the 99th percentile. Three of the four "highest charge" MORE-IOL neonates delivered following spontaneous labor. In the MORE-IOL group, deliveries following IOL lead to lower mean neonatal charges ($3799 vs. $4446).

CONCLUSION: The use of a method of care that involved a high rate of labor induction was not associated with higher overall charges for maternity care. This study suggests that the increased use of term labor induction, an approach now believed to improve clinical outcomes, would not increase health care costs.