women who delivered at the same gestational week without a uterine scar (non-TOLAC). Composite neonatal outcome was defined as =1 of the following: 5-min Apgar score <7, NICU admission, asphyxia, HIE, umbilical cord pH <7.05, sepsis, mechanical ventilation or neonatal death.

RESULTS: Overall, 47,732 women were eligible for analysis, of which 2,827 (6%) women in TOLAC.

1. In each gestational week group, women in the TOLAC group were older and with higher parity compared with women in the non-TOLAC group. No significant differences were noticed with regards to other obstetrical features such as hypertensive disorders.

2. Compared with non-TOLACs, the rate of cesarean delivery was higher for TOLACs, regardless of gestational age, mainly due to higher rate of non-reassuring fetal heart rate tracings (NRFHR), and arrest disorders of the first stage of labor.

3. The rate of operative vaginal delivery was higher in the TOLAC group only at 39-40 weeks, primarily due to higher rate of NRFHR.

4. No significant differences were noted with regards to neonatal outcomes.

5. No significant between-weeks differences was found with regards to uterine rupture (p = 0.61).

CONCLUSION: Delivery outcomes of TOLAC at term are comparable with non-TOLAC across gestational weeks of delivery. While women in TOLAC have higher risk for obstetrical intervention, this finding is not translated into higher risk for adverse neonatal outcome.

524 Cardiac index in pregnancy—friend or foe?
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OBJECTIVE: Cardiac Output (CO), a term used to describe the volume of blood pumped by the heart every minute, is a cornerstone of hemodynamic therapy in critical care and anesthesiology. To overcome the different variables of each individual and to provide a uniform range of normal values for clinical settings, it is accepted in the non-pregnant population that CO is normalized to the patient's Basal Surface Area (BSA). After normalizing for BSA, Cardiac Index (CI) is calculated, which is the CO per BSA (i.e. CI = CO/BSA), calculated in liters per minute per square meter (L/min/ m2). We aimed to assess the reliability of CI vs. CI in healthy pregnant women at term by investigating the correlation between CO and BSA using a novel Non-Invasive Cardiography technique (NICaS).

STUDY DESIGN: In this prospective study, 61 healthy, normotensive women with a singleton pregnancy at term were recruited. All patients were assessed for their CO during the third trimester (>37 weeks) using the NICaS. The NICaS is an impedance device that measures noninvasively the CO and its derivatives and demonstrated a very good correlation with the gold standard Swan-Ganz catheter. BSA was determined using the Dubois nomogram. The study was approved by the IRB.

RESULTS: Mean maternal age was 34.4 ± 5.1 years, mean height was 166.6 cm, mean BMI 24.5 Kg/m2, mean gestational age 38.8 ± 0.7.

Table 1: Annualized Provider wRVU

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Table 2: wRVU per clinical week-day

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Note: RVU, Relative Value Unit; wRVU, Work RVU; NICaS, Non-Invasive Cardiography System; BSA, Basal Surface Area; CO, Cardiac Output.
The Pearson correlation between the BSA and CO was poor (r = 0.254, P < 0.005).

**CONCLUSION:** The poor correlation demonstrated between CO and BSA in pregnant women does not support the use of CI in pregnancy. Therefore, when hemodynamic measurements are needed in obstetrics, the reliable variable to be used is the CO rather than CI, as might be used in the non-pregnant population.

Our findings might be explained by the fact that the rise in BSA is mostly due to an increase in blood volume, extravascular fluids or other parameters that are unique to pregnancy rather than formation of a true new metabolic mass, therefore it does not affect the CO.

**Cardiac Output vs BSA, r = 0.254, P < 0.005**

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**S285** Autophagy induction and expression of the 70 kDa heat shock protein and heme oxidase-1 in peripheral blood mononuclear cells in human gestation

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**OBJECTIVE:** Autophagy induction in circulating monocytes and lymphocytes promotes their activation and stimulates induction of pro-inflammatory immunity. Modulation of this activity during different stages of human pregnancy remains poorly understood.

**STUDY DESIGN:** Peripheral blood mononuclear cells (PBMCs) were isolated from 222 pregnant women, lyzed and intracellular levels of p62, the inducible 70kDa heat shock protein (hsp70) and heme oxidase (HO-1) were measured. p62 is a cytoplasmic protein consumed during autophagy induction. Its concentration is inversely related to the extent of autophagy. Hsp70 and HO-1 inhibit autophagy and block induction of pro-inflammatory immunity.

**RESULTS:** Autophagy levels were lowest in PBMCs obtained in the first trimester and progressively increased during gestation (p = 0.03). The extent of autophagy induction in PBMCs was negatively associated with intracellular hsp70 and HO-1 levels at all gestational stages (p < 0.0001). Women with prior pregnancies, who delivered either vaginally or by cesarean section, had reduced autophagy induction in their PBMCs than did nulliparous women (p < 0.03). There was no association between the extent of autophagy in PBMCs and maternal age, body mass index, or neonatal birth weight.

**CONCLUSION:** The low extent of autophagy induction and high hsp70 and HO-1 levels in first trimester PBMCs may contribute to induction of immune tolerance and suppression of pro-inflammatory immunity during early gestation. The lower autophagy levels in multiparous women as opposed to nulliparous women suggest conservation of this immune regulatory response. Ongoing up-regulation of autophagy may signify increasing need for immune activation during human gestation.

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**S286** Semaphorin 3E, a novel adipokine with pro-inflammatory and insulin resistance properties, is positively correlated with insulin resistance in normal pregnancy

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**OBJECTIVE:** Semaphorin 3E (SEMA3E), a previously known axon guiding molecule, has recently been shown to be a novel adipokine involved in adipose tissue inflammation and insulin resistance. The aim of this study was to determine circulating SEMA3E levels and their correlation with insulin resistance indices in pregnant and non-pregnant women.

**STUDY DESIGN:** Fasting serum glucose, insulin and SEMA3E levels were determined in 45 healthy non-pregnant women and 67 pregnant women at the third trimester, including 9 women with GDMA2. The Homeostasis Model Assessment (HOMA) was used to evaluate insulin resistance. Non-parametric statistical methods were employed.

**RESULTS:** In non-pregnant women, SEMA3E levels were higher in lean versus obese/overweight women (1.27, IQR: 0.66-1.73 vs. 0.67, IQR: 0.45-1.11 ng/ml, respectively, p = 0.02), and were highly negatively correlated with their BMI (r = -0.5, p < 0.001). In normal pregnancy, maternal SEMA3E levels were positively correlated with insulin resistance (HOMA-IR; r = 0.31, p = 0.02), however, they did not differ significantly between lean and obese/overweight pregnant women (0.90, 0.51-1.48 vs. 1.13, 0.69-1.54 ng/ml, p = 0.26). Maternal SEMA3E levels were significantly lower in GDMA2 compared with normal pregnancy (0.3, 0.3-0.4 vs. 0.95, 0.58-1.56 ng/ml, p < 0.001). Finally, circulating maternal SEMA3E levels were higher in normal pregnancy compared with non-pregnant state (1.13, 0.69-1.54 vs. 0.67, 0.45-1.11 ng/ml, p = 0.02) in obese/overweight individuals while in lean women, SEMA3E levels did not differ between non-pregnant and normal pregnant women (0.91, 0.57-1.5 vs. 0.95, 0.58-1.56 ng/ml, p = 0.93).

**CONCLUSION:** This is the first study to report the presence of SEMA3E in maternal blood. Circulating maternal SEMA3E levels are positively correlated with insulin resistance in normal gestation. The unexpectedly reduced SEMA3E levels in GDMA2 may indicate a down-regulation effect of exogenous insulin on SEMA3E. These findings suggest that SEMA3E may play a role in metabolic adaptations to normal pregnancy as well as in the pathophysiology of pregnancy-related metabolic complications.

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**S287** Antenatal corticosteroids do not reduce the incidence of respiratory distress syndrome in preterm triplets

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**OBJECTIVE:** The efficacy of antenatal corticosteroids (ACS) to reduce the incidence of respiratory distress syndrome (RDS) in preterm triplets is uncertain. Our objective was to determine whether ACS given at ≤ 34 wks reduce the incidence of RDS in a large cohort of preterm triplets.

**STUDY DESIGN:** A multicenter prospective cohort of women with triplets and gestational age (GA) at delivery between 24 0/7 to 36 6/7...