standard monkey chow that provides 14% of calories from fat. The HFD group was maintained on a diet that supplies 32% calories from fat. On gestational day 120 (term 165 days), Doppler ultrasound was used to calculate uterine artery volume blood flow (cQuta), placental volume blood flow (cQuv), and umbilical artery pulsatility index (UA PI). The macaques were delivered on day 130 by cesarean section. The placenta samples were processed and stained by H&E and were graded by a placenta pathologist blinded to the treatment group. One-way ANOVA was used for statistical analysis.

RESULTS: Animals fed the HFD segregated into diet resistant (HFD-R, n=6), or diet sensitive (HFD-S, n=9) based on body weight and insulin resistance. HFD animals showed a 38-56% reduction in cQuta ($p<0.05$). HFD consumption by obese mothers with hyperinsulinemia (HFD-S) led to a 32% reduction in cQuv ($p<0.05$) and an increased incidence of placental infarctions ($p<0.05$). In the HFD-S animals there were 7 stillbirths out of 20 pregnancies ($p<0.05$) compared with 1 stillbirth out of a total of 26 CTR pregnancies, and 1 stillbirth out of a total of 13 HFD-R pregnancies. The UA PI was not significantly different amongst the groups.

CONCLUSIONS: A HFD, independent of obesity, decreases cQuta. Maternal obesity and insulin resistance further exacerbates the placental dysfunction and results in an increased frequency of stillbirth. Our results suggest that poor nutrition during pregnancy and not just obesity is a risk factor for adverse obstetric outcomes.

4 Longitudinal evaluation of circulating angiogenic factors for prediction of preeclampsia in a large contemporary North American cohort

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OBJECTIVE: We prospectively tested the hypothesis that sequential measurement of sFlt-1 and PlGF predicts incident preeclampsia (PE) in a large contemporary cohort.

STUDY DESIGN: Methods: 2440 singleton pregnancies were followed prospectively from the initiation of prenatal care through delivery at 3 centers. Plasma sFlt-1 and PlGF levels were quantified by immunoassay at 10, 17, 25 and 35 weeks. Optimal cutoffs determined by minimizing the distance between the ideal sensitivity and 1-specificity point and the observed sensitivity and 1-specificity in ROC analysis. PE defined by ACOG criteria.

RESULTS: Median analyte concentrations, ratio, and testing characteristics are presented below. By the third trimester differences between those who develop PE versus those who do not become interpretable according to angiogenic theory. Although positive predictive values never exceeded 20%, negative predictive values always exceeded 90%.

CONCLUSIONS: 1) First trimester differences in analytes do not conform to theory of angiogenic origins of PE. 2) Optimum cutoff points do not yield clinically useful positive predictive values. 3) High negative predictive values >24 weeks suggest clinical utility in excluding the diagnosis of PE.

GA	Analyte	PE N=193	Non-PE N=2,247	*P*-value	Optimum Cutoff	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
10	PLGF	21.4 (15.8-32.1)	20.7 (14.6-31.7)	0.082	≤ 22.8	54.92	43.44	7.70	91.82
	sFlt-1	4.6 (3.1-6.8)	5.0 (3.3-7.2)	0.066	≥ 4.3	54.40	40.65	7.30	91.21
	PLGF/sFlt-1	5.26 (3.3-8.8)	4.56 (3.0-7.2)	0.007	≤ 5.10	48.17	43.39	6.76	90.76
17	PLGF	114.6 (79.7-172.9)	136.7 (97.4-191.4)	< 0.001	≤ 121.5	53.93	59.77	10.15	93.90
	sFlt-1	5.9 (4.2-8.9)	6.1 (4.1-9.1)	0.481	≥ 6.7	44.94	57.55	8.19	92.54
	PLGF/sFlt-1	20.1 (11.3-32.3)	22.6 (13.6-36.6)	0.009	≤ 23.94	62.36	46.76	8.98	93.65
24	PLGF	327.1 (186.3-495.4)	450.7 (300.5-662.3)	< 0.001	≤ 379.4	63.74	61.53	12.34	95.23
	sFlt-1	6.0 (4.1-10.6)	5.8 (3.9-9.0)	0.045	≥ 7.1	42.31	62.23	8.69	92.70
	PLGF/sFlt-1	55.2 (26.5-88.2)	77.9 (44.8-131.1)	< 0.001	≤ 60.23	53.85	61.93	10.73	94.04
35	PLGF	134.9 (66.5-299.3)	370.8 (174.0-727.4)	< 0.001	≤ 242.7	67.90	64.62	12.81	96.34
	sFlt-1	18.2 (10.4-30.1)	9.7 (6.6-14.6)	< 0.001	≥ 13.1	62.96	69.34	13.58	96.07
	PLGF/sFlt-1	7.4 (2.6-29.5)	40.1 (14.8-95.5)	< 0.001	≤ 14.42	61.73	75.66	16.26	96.27

5 Induction of labor at term: a comparison of Foley catheter and prostaglandins (trial registration NTR 1646)

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OBJECTIVE: To assess the effectiveness of a transcervical Foley catheter as compared to prostaglandins for induction of labor in term women with an unfavorable cervix.

STUDY DESIGN: A multicentre randomized controlled trial was conducted in 12 hospitals in the Netherlands between February 2009 and May 2010. Women with a singleton pregnancy in cephalic presentation at term and an unfavorable cervix (Bishop score < 6) scheduled for induction of labor were randomly allocated to either induction with a 30 cc transcervical Foley catheter or vaginal prostaglandin E2 gel. The primary outcome was cesarean section rate. Secondary outcomes included time to delivery and maternal and neonatal morbidity. Analysis was intention to treat. To demonstrate a reduction in cesarean section rate from 25% to 17% (α error 5%, β error 20%) two groups of 406 women were needed.

RESULTS: We included 824 women who were equally assigned to Foley catheter or prostaglandin E2 gel. Cesarean section rates were comparable in both groups (22% vs. 19%, RR 1.15, 95% CI .86-1.5). The median time (IQR) (hours) from start of induction to delivery was 29 (15-36) in the Foley group and 17 (6-33) in the prostaglandin group ($p=0.001$).Umbilical cord pH <7.05 was seen significantly less often in the Foley group. Other secondary outcomes are outlined in the table.

CONCLUSIONS: In term women with an unfavorable cervix induction of labor with a Foley catheter is equally effective as induction with prostaglandins with less morbidity, but a longer time to delivery.