

## CLINICAL OBSTETRICS, EPIDEMIOLOGY, FETUS, MEDICAL-SURGICAL COMPLICATIONS, NEONATOLOGY, PHYSIOLOGY/ENDOCRINOLOGY, PREMATURITY

### Abstracts 87 – 236

#### 87 Does change in BMI between pregnancies increase the risk for adverse pregnancy outcomes?

Adi Hirshberg<sup>1</sup>, Lisa Levine<sup>1</sup>, Sindhu Srinivas<sup>1</sup>

<sup>1</sup>University of Pennsylvania Perelman School of Medicine, Maternal and Child Health Research Program, Department of Obstetrics and Gynecology, Philadelphia, PA

**OBJECTIVE:** Obesity is a risk factor for adverse pregnancy outcomes (APO). Data are limited on interval weight change between pregnancies and subsequent pregnancy outcomes. Our objective is to evaluate distribution of change in BMI categories between two pregnancies and its effect on APOs in a subsequent pregnancy (Preg2).

**STUDY DESIGN:** We performed a retrospective cohort study of women with 2 consecutive deliveries from 2005-2010. Term spontaneous labor and inductions in the index pregnancy (Preg1) were included. Analysis was limited to women with 1st prenatal BMI <20 wks for both pregnancies. BMI was defined as normal (NW):18.5-24.9, overweight (OW): 25.0-29.9, obese (OB): ≥30, and morbidly obese (MOB): >40kg/m<sup>2</sup>. Maternal information was obtained through chart abstraction. The composite APO includes preterm birth <37 wks, preeclampsia, and IUGR. Women who changed BMI categories between pregnancies were compared to those who remained in same category, regardless of Preg1 BMI. Strata specific analyses within each BMI category were performed.  $\chi^2$  analyses were used to compare categorical variables.

**RESULTS:** 480 women were analyzed (43% NW, 28% OW, and 25% OB in index). Of these, 24% increased BMI category between pregnancies. 205 women started Preg1 NW. 83% stayed NW at the start of Preg2; 16% progressed to OW or OB. 134 women started Preg1 OW. 60% remained OW or went to NW; 40% went to OB. 121 women started Preg1 OB. 95% remained OB and of those, 16% progressed to MOB. There was no association between increase in BMI category and APO (p=0.6) or mode of delivery (p=0.8) in Preg2. When restricting to NW and OW in Preg1, there was no association between increase vs. unchanged BMI category and APO (NW; p=0.1, OW; p= 0.5).

**CONCLUSION:** A significant number of women increased BMI category between pregnancies. There are public health implications associated with obesity. Future research should assess implications of interval BMI change and whether current weight gain guidelines can prevent an increase in BMI category between pregnancies.

#### 88 Deregulated cytokine and chemokine expression in endometrium from women with recurrent pregnancy loss

Alessandra Corardetti<sup>1</sup>, Monia Cecati<sup>1</sup>, Davide Sartini<sup>1</sup>, Irene Lucibello<sup>1</sup>, Alessandra Tozzi<sup>1</sup>, Franca Saccucci<sup>1</sup>, Monica Emanuelli<sup>1</sup>, Andrea Tranquilli<sup>1</sup>

<sup>1</sup>Università Politecnica Marche, Department of Clinical Sciences, Ancona, Italy

**OBJECTIVE:** Implantation in humans is a complex process that is temporally and spatially restricted. Using a one-by-one approach, several gene products that may participate in this process have been identified. Our objective was to explore if those genes are differentially expressed in endometrium from women with recurrent pregnancy loss (RPL).

**STUDY DESIGN:** Endometrial samples were obtained through hysteroscopic biopsy from 5 patients with 2 or more consecutive pregnancy

losses and 5 women with previous normal pregnancy, matched for age, menstrual period and body mass index. Exclusion criteria were chronic diseases, autoimmune and connective tissue disorders, or cancer. A RT2 Profiler PCR Array System - Human Cytokines & Chemokines (PAHS - 150D) was used to profile the expression of 96 genes in RPL samples and controls. Data were confirmed by quantitative real-time PCR and western blot. Significance was set at p<0.05. **RESULTS:** In women with RPL, 4 genes were significantly up-regulated (PPBP, BMP2 and 7, CCL21), and 28 significantly down-regulated. The proinflammatory chemokines BMP2 and CCL21 were found up-regulated. Significant downregulation was detected for several genes involved in angiogenesis (IL22,IL23), interleukines implicated in Th1/Th2 balance (IL4, IL5) and CSF1, which is involved in the development of placenta.

**CONCLUSION:** The gene expression profile of the endometrium of women with RPL, obtained through PCR array technology, is consistent with a proinflammation state, a shift fromTh1/Th2, a decreased angiogenesis and an improper placental development.

Symbol	AVG ΔC <sub>t</sub> (Ct(GO)) - Ave Ct (PKG))		2 <sup>-ΔC<sub>t</sub></sup>		Fold Difference	Fold Up- or Down-Regulation
	Test sample	Control sample	Test sample	Control sample	Test Sample /Control Sample	Test Sample /Control Sample
BMP2	12.93	13.58	1.3E-04	8.2E-05	1.57	1.57
BMP7	10.15	12.44	8.8E-04	1.8E-04	4.96	4.96
CCL11	15.11	13.76	2.8E-05	7.2E-05	0.39	-2.55
CCL19	14.32	8.88	4.9E-05	2.4E-03	0.62	-46.86
CCL20	12.54	9.25	1.7E-04	1.8E-03	0.10	-9.75
CCL21	8.46	10.17	2.8E-03	8.7E-04	3.26	3.26
CCL22	11.54	9.42	3.4E-04	1.5E-03	0.23	-4.35
CCL24	13.90	10.95	6.5E-05	5.1E-04	0.13	-7.72
CCL3	10.14	8.81	8.9E-04	2.2E-03	0.40	-2.92
CCL5	9.01	7.82	1.9E-03	4.4E-03	0.44	-2.28
CCL7	14.80	13.76	3.5E-05	7.2E-05	0.48	-2.06
CCL8	12.41	10.34	1.8E-04	7.7E-04	0.24	-4.21
CD40LG	14.54	11.07	4.2E-05	4.7E-04	0.69	-11.11
CSF1	8.37	7.30	3.0E-03	6.3E-03	0.48	-2.09
CSF2	15.06	13.76	2.9E-05	7.2E-05	0.41	-2.47
CX3CL1	11.61	10.15	3.2E-04	8.8E-04	0.36	-2.74
IFNG	14.19	11.94	5.3E-05	2.5E-04	0.21	-4.76
IL11	13.64	11.29	7.8E-05	4.0E-04	0.20	-5.10
IL13	15.20	13.76	2.7E-05	7.2E-05	0.37	-2.71
IL16	12.06	10.83	2.3E-04	5.5E-04	0.43	-2.35
IL17A	15.20	13.76	2.7E-05	7.2E-05	0.37	-2.71
IL17F	15.20	13.76	2.7E-05	7.2E-05	0.37	-2.71
IL18	9.91	7.81	1.0E-03	4.5E-03	0.23	-4.27
IL23A	11.81	9.88	2.8E-04	1.1E-03	0.26	-3.91
IL24	10.89	8.82	5.3E-04	2.7E-03	0.19	-5.18
IL27	13.33	11.94	9.7E-05	2.5E-04	0.38	-2.63
IL4	15.20	13.76	2.7E-05	7.2E-05	0.37	-2.71
IL5	12.28	10.63	2.0E-04	6.3E-04	0.32	-3.14
IL7	13.48	10.84	8.7E-05	5.5E-04	0.16	-6.24
IL9	15.20	13.76	2.7E-05	7.2E-05	0.37	-2.71