

282 DIFFERENTIAL PHARMACODYNAMIC RESPONSES TO CLONIDINE IN PREGNANCY SOPHIA ROTHBERGER¹, DARCY CARR¹, MEGAN BUCHANAN², MARY HEBERT², DEBRA BRATENG¹, THOMAS EASTERLING¹, ¹University of Washington, Obstetrics & Gynecology, Seattle, Washington, ²University of Washington, Pharmacy, Seattle, Washington

OBJECTIVE: To evaluate hemodynamic response to clonidine in pregnancy.

STUDY DESIGN: A retrospective cohort study was performed in pregnant women ≥ 16 weeks gestation, treated with clonidine monotherapy for high total peripheral resistance (TPR), and had pre- and post-treatment Doppler obtained hemodynamics. Hemodynamic responses were classified as A: primarily TPR reduction, B: primarily cardiac output (CO) reduction and C: mixed. Data were analyzed by t-test and multinomial regression.

RESULTS: Clonidine changed MAP (95.7 to 87.5, $p < 0.01$) and TPR (1365 to 1054, $p = 0.02$). Changes in CO (6.4 to 6.9, $p < 0.01$), heart rate (81.8 to 78.1, $p < 0.01$) and stroke volume (79.0 to 88.7, $p < 0.01$) were modest. Six of the 72 subjects (8%) had no hemodynamic response and were not further analyzed. Thirty four (47%) subjects were in group A, 22 (31%) in B, and 10 (14%) in C. Maternal characteristics including initial hemodynamics, clonidine dose, chronic hypertension, and others did not differ between groups. All six women with pre-existing diabetes were in group A. Women in group A had higher creatinine clearance (CrCl: A 167ml/min versus B 142, $p = 0.05$; A versus C 124, $p = 0.01$). Women in group A were younger than group C (A 30.3 years versus C 34.8, $p = .04$) but not B (29.2, $p = .52$). Controlling for age, a 20ml/min CrCl increase was associated with a 26% greater probability of group A response compared to group B ($p = .05$) and a 50% greater probability of group A response over group C ($p < .01$). Stratifying by pre-existing diabetes does not alter this relationship.

CONCLUSION: Although clonidine is classically described as a vasodilator, pregnant women have heterogeneous responses with almost half having some reduction in CO. TPR response is more likely with high renal clearance and pre-existing diabetes. This work was supported by NIH/NICHD through the Obstetric-Fetal Pharmacology Research Unit Network, grant #U10 HD047892.

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283 PRENATAL VS INTRAOPERATIVE DIAGNOSIS OF PLACENTA ACCRETA: EFFECTS ON MATERNAL OUTCOMES IN 100 CONSECUTIVE CASES RAMEZ ESKANDER¹, CARRIE WARSHAK², GLADYS ALEXANDRA RAMOS³, KURT BENIRSCHKE⁴, THOMAS MOORE¹, ROBERT RESNIK⁵, ¹University of California, San Diego, San Diego, California, ²UCSD Department of Reproductive Medicine, California, ³University of California San Diego, California, ⁴University of California, San Diego, Reproductive Medicine, La Jolla, California, ⁵University of California, San Diego, La Jolla, California

OBJECTIVE: To evaluate the effects of prenatal diagnosis of placenta accreta (PA) on maternal outcomes including gestational age at delivery, EBL, transfusion requirements, length of hospital stay and operative complications.

STUDY DESIGN: A retrospective chart review was performed consisting of all patients with pathologically confirmed PA cared for at the University of California San Diego from January 1990 to April 2008. Data collected included maternal demographics, antenatal diagnosis, operative findings and complications including EBL, transfusions (blood products given), operative time, and length of hospital stay. Analysis was performed using SPSS v 11.5.

RESULTS: In the period from January 1990 to April 2008, 100 patients had a pathologically confirmed PA. The median maternal age was 33 years, and 85% of patients had at least one cesarean delivery. 65 patients were diagnosed prenatally (PND) while 35 went undiagnosed (PNU). PND was associated with a higher frequency of prior CS (95% vs 68%), lower frequency of posterior placentation (2% vs 24%) and more previas (81% vs 48%) than the PNU group ($p < .01$). Cesarean hysterectomy (C hyst) was planned and performed as scheduled in 63% of PND whereas 90% of the PNU required emergent C hyst. Median blood loss was significantly less in PND (2000ml vs 3500ml $p = 0.03$). The number of transfusions and GI/GU operative complications was not statistically different. There was no difference in maternal ICU admissions or length of hospital stay.

CONCLUSION: Prenatally diagnosed PA had more risk factors for morbidity but had a higher percentage of non-emergent procedures and experienced significantly less blood loss. A diligent search for evidence of PA in antenatal imaging results in lower maternal morbidity.

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284 FIRST TRIMESTER RISK ASSESSMENT AND ADVERSE OUTCOMES IN MONOCHORIONIC TWIN PREGNANCIES. SHIRA FISHMAN¹, ROBIN B. KALISH¹, STEPHEN T. CHASEN¹, ¹Weill Cornell Medical College, Obstetrics and Gynecology, New York, New York

OBJECTIVE: High rates of adverse outcomes in MCDA twin pregnancies are related to the twin-twin transfusion syndrome (TTTS) and abnormal fetal growth. Our objective was to identify first-trimester factors associated with these outcomes.

STUDY DESIGN: All MCDA pregnancies managed between 2003 and 2007 that had first trimester aneuploidy risk assessments were reviewed. Discordance in birthweights (BW) and crown-rump lengths (CRLs) was the difference in measurements divided by the larger value. Delivery information was extracted from electronic medical records. Statistical analysis was performed with Spearman rho correlation, Fisher's exact test, and Mann-Whitney U.

RESULTS: Six five pregnancies met inclusion criteria. There were six cases of TTTS, and three second trimester IUFDs. Delivery information was available in 47 cases. There was no correlation between CRLs, NTs, or biochemical values and the subsequent diagnosis of TTTS. BW discordance of $>20\%$ was noted in 24.5% of pregnancies, and IUGR was noted in at least one neonate in 53% of pregnancies. CRL discordance was strongly correlated with BW discordance ($\rho = .41$; $p = .004$). Those pregnancies with IUGR had higher degrees of CRL discordance than pregnancies without IUGR (4.9% vs. 1.4%; $p = .02$). NT discordance was not associated with BW discordance or IUGR. NT values $>95\%$ ile were also not associated with higher rates of BW discordance or IUGR. There was no correlation between levels of PAPP-A or free beta-hCG and growth discordance or IUGR.

CONCLUSION: At 11-14 weeks, the degree of CRL discordance correlates with BW discordance as well as IUGR in MCDA pregnancies. Neither NT nor biochemical values predict growth abnormalities. Because a strong association between low PAPP-A and abnormal growth has been demonstrated in singleton pregnancies, mechanisms other than placental insufficiency likely affect monochorionic twin pregnancies with IUGR or discordant growth.

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285 DIFFERENTIAL EXPRESSION OF PLACENTAL PROTEIN 17 IN PREECLAMPSIA AND HELLP COMPARED TO NORMAL PLACENTAS MORAN SADE¹, HAMUTAL MEIRI¹, RON GONEN², MARAI SAMMAR¹, ¹Diagnostic Technologies, Yokneam, Israel, ²Bnai Zion Medical Center and Technion Faculty of Medicine, Obstetrics & Gynecology, Haifa, Israel

OBJECTIVE: Placental protein 17 (PP17) is soluble placental proteins initially purified by Bohn (1) and subsequently cloned by Than et al. (2). Here we aimed to identify whether PP17 is differentially expressed in placentas derived from normal pregnancy compared to preeclampsia (PE) with/without HELLP syndrome and to examine correlation between mRNA and PP17 protein in placenta and maternal serum.

STUDY DESIGN: We developed a cohort of 10 PE cases (26-33 weeks), 3 HELLP (27-29 weeks), 5 PTD (31-35 weeks) and 10 normal outcome (37-41 weeks), all delivered by Caesarean section and signed on informed consent. Placental tissue and maternal samples were collected and subjected to total RNA and proteins isolation from placental tissue. PP17 mRNA level quantified by Real time PCR with primers and PP17 protein by Western blot. The full length PP17 DNA cloned into expression vector, expressed in E-Coli as a recombinant PP17 (rPP17) and purified by affinity chromatography. Mice were immunized by purified rPP17 to generate monoclonal antibodies and screen them by ELISA and immunoblots.

RESULTS: Placental PP17 mRNA determined by quantitative real-time PCR was 1.783 fold higher ($p = 0.017$) in PE compared to normal and 3.073 fold higher ($p = 0.022$) in HELLP. Anti-PP17 antibodies specifically recognized the placental PP17 (nPP17) and bacterial rPP17. Immunoblotting revealed an apparent molecular weight of approximately 48kDa in both rPP17 and nPP17. The antibodies and rPP17 are constructed into immunobioassays for quantification of PP17 in body fluids as a potential new biomarker of pregnancy disorders.

CONCLUSION: Results derived from real time PCR suggest that PP17 may be a potential new placental biomarker for prediction of preeclampsia and HELLP. Comparing PP17 mRNA and protein serum levels further support this conclusion. Accurate prediction of PE in early gestation could lead to developing new intervention.

References:

- 1- Bohn, H et al., *Onco.Dev. Biol. Med* (1983),4(5):343-350
- 2- Than NG et al., *Tumour Biol* (1999), 20 (4): 184-192

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