Characteristics of patients with and without SCH

	SCH on ultrasound (n=30)	No SCH on ultrasound (n=49)	P value
Age (SD)	33.0 (4.93)	31.9 (3.78)	0.26 (NS)
Baseline FSH (mIU/mL)	6.59 (1.72)	6.15 (2.15)	0.34 (NS)
Number of embryos transferred	2.30 (0.70)	2.20 (0.54)	0.50 (NS)
Number of gestational sacs	1.37 (0.56)	1.33 (0.47)	0.75 (NS)
Number of fetal heartbeats	1.34 (0.61)	1.31 (0.47)	0.62 (NS)

CONCLUSION: Both SCH and VB are common occurrences in early pregnancy, both before and after the detection of FHTs. In our experience, 38% of patients had ultrasound detected subchorionic hematomas, and 22% had vaginal bleeding following confirmation of FHTs. Based on our findings, neither SCH nor VB are associated with a worse outcome in IVF pregnancies once FHTs have been established. Indeed, no patients with either a SCH or VB suffered a spontaneous abortion. In conclusion, once FHTs have been detected, patients experiencing VB or noted to have a SCH on ultrasound can be reassured that their pregnancies are very likely to result in a live birth.
Supported by: None

P-907

COMBINED INTRAUTERINE AND TWIN CERVICAL PREGNANCY MANAGED BY A NEW CONSERVATIVE MODALITY. E. Horowitz, S. Nitke, H. Krisi, J. Farhi, J. Shalev. The Helen Schneider Comprehensive Women's Health Center, Rabin Medical Center, Petach Tikva, Israel.

OBJECTIVE: To describe a rare case of a heterotropic pregnancy with two gestational sacs in the cervix and one in the uterine cavity.
DESIGN: Pregnancy termination was carried out by selective intra-arterial catheterization of the uterine artery, intra-arterial administration of methotraxate and uterine artery embolization with Gelfoam.
MATERIALS AND METHODS: See above
RESULTS: There were no intra- or post-precedural complications, and the patient's fertility was preserved.
CONCLUSION: Intra-arterial methotraxate with uterine vessel embolization is an effective conservative approach to heterotopic cervical pregnancy.
Supported by: None

P-908

SHORT-TERM MATERNAL CLEARANCE OF CELL-FREE FETAL NUCLEIC ACID FOLLOWING FIRST TRIMESTER PREGNANCY TERMINATION. N. Kapp, Y. Jeong, L. Borgatta, I. Peter, K. Johnson, D. Bianchi. Boston Univ., Boston, MA; Tufts-New England Medical Center, Boston, MA.

OBJECTIVE: The dynamics of the short-term clearance of fetal nucleic acids from maternal plasma at early gestational ages has not been established. The purpose of this study is to determine the levels of nucleic acids in maternal plasma at multiple time points following termination of pregnancy during the first trimester.
DESIGN: Case-series.
MATERIALS AND METHODS: Thirty-six women in the first trimester pregnancy undergoing elective surgical termination were recruited. Two to five mL of peripheral blood was drawn pre-procedure, immediately post-procedure, and 10, 20, 30, 60 and 90 minutes after termination. The following DNA was quantified using real-time PCR: SRY (representing fetal DNA) and glyceraldehyde-3-phosphate dehydrogenase (GAPDH) (representing total DNA). Additionally, mRNA was quantified using real-time PCR using beta-human chorionic gonadotropin (bhCG) (representing placental mRNA) and GAPDH (representing total mRNA). Descriptive statistics, including medians and interquartile ranges (25th, 75th percentiles), were generated for all variables. Multivariate regression analysis was used to visualize the pattern of fetal DNA and mRNA in maternal circulation after a termination procedure.

RESULTS: Median SRY (n=10) and GAPDH (n=20) DNA levels gradually increased with time (p=0.0076 and 0.0001, respectively). At 90 minutes following termination, median SRY and GAPDH DNA levels were significantly higher than at baseline (p=0.02 and 0.0013, respectively). Median bhCG (n=13) and GAPDH (n=18) mRNA levels showed no significant association with time. However, median bhCG mRNA levels were still detectable 90 minutes after termination and were higher than that at baseline.

CONCLUSION: Our data show that levels of fetal nucleic acids in maternal plasma are not reduced from baseline within 90 minutes following termination of pregnancy; in fact, fetal DNA levels increase over 90 minutes. Additional study with time points longer than 90 minutes is necessary to understand the overall kinetics of nucleic acid clearance following termination of pregnancy. This pattern is in contrast to term delivery where levels decrease rapidly following birth.
Supported by: None

P-909

ADMINISTRATION OF HIGH DOSE FOLATE MAY BENEFIT WOMEN WITH RECURRENT FIRST TRIMESTER PREGNANCY LOSS AND NORMAL HOMOCYSTEINE WITH MTHFR MUTATION. K. Van Den Heuvel, M. Lydic. SUNY-Stony Brook, Stony Brook, NY.

OBJECTIVE: To evaluate the outcome of supplementation with either 4 mg folic acid or 1600 μg folinic acid in women with recurrent 1st trimester pregnancy loss and methylenetetrahydrofolate reductase (MTHFR) mutation.
DESIGN: Restrospective chart review of patients from a academic practice.
MATERIALS AND METHODS: The study was approved by the Investigational Review Board of SUNY-Stony Brook. Charts were retrospectively reviewed from the academic practice of the Reproductive Endocrinology and Infertility Division at SUNY-Stony Brook. Charts of 43 women with prior pregnancy losses and MTHFR mutation were reviewed. Of these, 22 women had 3 or more 1st trimester pregnancy losses. They had been preconceptually treated with a prenatal vitamin (containing 1 mg folic acid) and additional 3 mg folic acid (total 4 mg) or additional folinic acid 800 μg twice daily. Data was collected for age, body mass index (BMI), gravity and parity, number of pregnancy losses, MTHFR C677T or A1298C mutations (heterozygous, homozygous, and compound heterozygous), homocysteine, and pregnancy outcomes. Data were analyzed with SPSS v 11.5 for descriptive statistics and Pearrson correlation. P < 0.05 was considered statistically significant. There was no control group in this study for comparison.
RESULTS: The mean (± SE) subject age was 35.5 ± 0.92 years(range 28-41) and mean BMI was 26.9 ± 1.6 kg/m^2 (range 18.6-42.0). Mean homocysteine was 6.2 ± 0.7 μmol/L (range 3.9-12.5). Homocysteine and BMI were highly correlated (r= 0.67, P = 0.001) by Pearrson correlation. Only 1 of 22 subjects had an elevated homocysteine level. The mean gravity was 6.7 ± 0.5 (range 4-13), and mean number of 1st trimester spontaneous abortions was 4.3 ± 0.3 (range 3-8). Of the 22 women, 18(81.8%) conceived and progressed beyond first trimester. One delivered a stillbirth at term, due to Potter's Syndrome, 3 are ongoing 2nd trimester pregnancies, and 1 is an ongoing 3rd trimester pregnancy. No pattern was observed between homocysteine level or pregnancy outcome and heterozygosity/homozygosity/compound heterozygosity for MTHFR.
CONCLUSION: Homocysteine level may be a poor determinant of whether additional folate supplementation is warranted in women with recurrent 1st trimester pregnancy losses when MTHFR mutation is present. Homocysteine had a significant positive correlation with BMI, regardless of the type of MTHFR mutation, and was more likely to be elevated in morbidly obese subjects. In addition, the cutoff level is that established for prevention of coronary heart disease, and may not apply to this population. The MTHFR mutation alone may impair folate metabolism enough to affect an early pregnancy. Given the 81% success rate in maintaining pregacy beyond 1st trimester, and the overall safety of folate supplementation, it appears to be beneficial to supplement with either 4 mg folic acid or 1600 μg folinic acid in all recurrent aborters with any MTHFR mutation. While

this case series of women treated for MTHFR mutation appears to support these conclusions, further studies with comparison to an affected control group are needed in the future.

P-910

ETIOLOGY OF RECURRENT PREGNANCY LOSS (RPL) IN 1018 WOMEN.

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OBJECTIVE: Recurrent Pregnancy Loss (RPL) is a devastating problem that affects 2%-4% of reproductive age couples and represents a major concern for reproductive medicine specialists. Great advances have been made to identify the etiologic factors associated with RPL, yet questions remain. One such question is whether the expense and time of a full evaluation of a couple is warranted after two consecutive losses, or if a full evaluation should only be undertaken after three losses. A second question is whether full evaluations should be given to couples with secondary RPL because the couples already have demonstrated fertility. The goal of this study is to address these questions by categorizing the etiologies of RPL relative to primary and secondary losses, as well as to the number of pregnancy losses.

DESIGN: Prospective, single-center evaluation of women who were referred for evaluation for RPL.

MATERIALS AND METHODS: Patients who sought treatment for RPL were included in this study if they had experienced two or more consecutive losses with the same partner, and if information was available for at least four of the seven possible categories. These categories included genetic (karyotypes), anatomic (defects identified by hysterosalpingogram or hysteroscopy), endocrinologic (TSH, prolactin, midluteal progesterone, fasting insulin and glucose), immunologic (LAC, anticardiolipin and antiphosphatidyl serine antibodies), thrombophilic, (protein C, protein S, antithrombin, activated protein C resistance or Factor V Leiden, and homocysteine or MTHFR), microbiologic (cervical cultures for chlamydia, mycoplasma and ureaplasma), and social factors (self-reporting of tobacco, ethanol, and illicit drug use). Patients were categorized by the type and number of pregnancy losses. Primary RPL was characterized as two (P2) or more (P3) consecutive losses with the same partner without carrying a fetus to viability, and secondary RPL was categorized as two (S2) or more (S3) consecutive losses following at least one viable pregnancy with the same partner.

RESULTS: Results from 1018 patients were used in the analysis. Most women included in this study had primary RPL (66%) and had experienced three or more losses (60%). Approximately 75% of patients had one or more abnormalities. One abnormality was present in 38% of patients while 36% of women with RPL had two or more abnormal findings. Patients with three or more losses were no more likely to have abnormal findings than patients with only two losses. Patients with secondary RPL were no more likely to have abnormal findings than those with primary RPL.

CONCLUSION: Evaluation of women with 2 or more consecutive pregnancy losses is recommended, whether or not their losses are primary or secondary. An evaluation of all etiologies is advised because more than one-third of patients will have multiple abnormalities. If a full evaluation is performed, an etiology can be found in over 70% of the patients. When no cause is found, supportive care is recommended.

P-911

ECTOPIC PREGNANCY IN WOMEN WITH NO MAJOR RISK FACTORS.

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OBJECTIVE: Classically, risk factors for ectopic pregnancy (EP) are elicited from women who present with a symptomatic first trimester pregnancy, presumably to stratify risk. The purpose of this study was to address two unknown outcomes of this practice: (1) Do women with risk factors (RF) have a different clinical course from those who do not? (2) Does risk stratification alter the time until definitive diagnosis?

DESIGN: Prospective cohort study of women with first trimester bleeding in a tertiary care hospital ultimately diagnosed with an EP.

MATERIALS AND METHODS: 367 women diagnosed with an EP were stratified by presence or absence of RF and compared in terms of time until diagnosis and clinical course. RF evaluated included history of pelvic inflammatory disease (PID), outpatient treatment of gonorrhea/Chlamydia (GC), intrauterine device (IUD), EP, abdominal/pelvic surgery and cesarean section (CS). Clinical presentation factors evaluated included pain and/or bleeding. Rate of rupture and time to diagnosis were compared ($p \leq 0.05$ is statistically significant).

RESULTS: A total 158 women (43%) did not have any of the major RF. Of these, 102 women (65%) were nulliparous. 110 (30%) of women had only one RF: past history of GC - 30 women (8%), PID - 30 women (8%), pelvic surgery - 22 women (6%), EP - 20 women (5%), IUD - 11 women (3%), and CS - 3 women (0.1%). A total of 62 women (17%) had two RF, and 37 women (10%) had three RF. None of the women had all the history RF. Overall, women with no RF tended to be younger than women with RF (26.8 years vs. 28 years respectively). Overall, presence of historical RF did not influence the rate of rupture. Rate of rupture in women with 0 RF = 13%, 1 RF = 14.5%, 2 RF = 16%, 3 RF = 13.5%. (p value 0.96). Women with no historical RF vs. those with RF (0, 1, 2 or 3) were more likely to have a delayed diagnosis (p = 0.04). Women who had 1 or more risk factors were more likely than those with no RF to have a minimum diagnosis delay of 2 days. Further comparison of the data yielded statistically significant results for 0 RF vs. 2 RF (p value 0.001), and 1 RF vs. 2 RF (p value 0.002). Clinical factors present included: bleeding only in 23 women (7%), pain only in 74 women (22%). Both pain and bleeding were seen in 171 women (51%), and 23 women (6%) presented with clinical symptoms other than pain or bleeding. Pain (with or without bleeding) was significantly associated with rupture (p = 0.002) and delayed diagnosis (p = 0.01). This association remained statistically significant for rupture (p = 0.0001), and for delayed diagnosis (p = 0.0007) even in the subgroup with pain only (no bleeding). Bleeding (with or without pain compared to no bleeding) was not associated with rupture or delayed diagnosis.

CONCLUSION: While risk factors are commonly solicited in the hospital intake of a woman at risk for EP, the presence and number of RF are not related to risk of rupture. Counter intuitively, a greater number of RF noted in a woman's history is associated with a longer time until diagnosis. Clinical factors such as pain and bleeding are a common part of presentation, but they do not always present concomitantly. Pain has a strong association with risk of rupture of an EP. In conclusion, collection of risk factors has a limited affect on current clinical care. Further risk stratification may aid in identifying women at risk for EP, and may help in identifying subsets of women at highest risk for rupture and morbidity.

P-912

ELEVATED HOMOCYSTEINE LEVELS IN WOMEN WITH RECURRENT PREGNANCY LOSS (RPL) ARE ASSOCIATED WITH A1298C MUTATIONS OF METHYLENETETRAHYDROFOLATE REDUCTASE (MTHFR) IN THE ABSENCE OF C677T MUTATIONS.

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OBJECTIVE: Hyperhomocystenemia has emerged as a risk factor for arterial and venous thrombosis. Folic acid is an important factor in the metabolism of homocysteine. MTHFR is one of three enzymes that are responsible for the circulating form of folic acid. Recently, pregnancy complications such as RPL and fetal neural tube defects have been reported in association with hyperhomocysteinemia. Two frequent polymorphisms have been identified in the gene for MTHFR. The first, C677T, occurs in 10 to 15% of the white population and has been associated with hyperhomocysteinemia. The second, A1298C, is also found frequently but, to date, has not been associated with hyperhomocysteinemia. The purpose of this study was to identify the frequency of elevated homocysteine in a populataion of women with a history of RPL, and to determine the association with the mutations C677T and A1298C. Folate deficiency is also a common cause of hyperhomocysteinemia.

DESIGN: Single-center, prospective study.