CONCLUSIONS: Even though all study cohorts demonstrated adequate fertilization rates, luteinization was correlated with the likelihood of live birth, with a P4 level >2.3 ng/mL, as reflected by the highest LBR in study. The level of P4 at trigger is an accurate prognostic indicator of cycle outcome and can be used prior to oocyte retrieval to enhance patient counseling and expectations.

P-172 Tuesday, October 18, 2016
EGG DONATION CYCLE OUTCOMES ACCORDING TO RECIPIENT PROGESTERONE LEVEL ON THE DAY OF FRESH Blastocyst Transfer. R. Sherbahn M. Catenacci. Advanced Fertility Center of Chicago, Gurnee, IL.

OBJECTIVE: To study the relationship between serum progesterone levels on the day of embryo transfer and cycle outcomes using fresh donor eggs and fresh blastocyst transfers.

DESIGN: Retrospective chart review.

MATERIALS AND METHODS: All 243 fresh day 5 transfers with donor eggs between January 2012 and December 2014 were included. Cases were put in 2 groups based on the serum progesterone level (Immulite assay) on day of transfer. Cycle characteristics and outcomes were compared. Chi-square, Fisher’s exact test and T-tests were used for statistical analysis.

RESULTS: Cycle characteristics and cycle outcomes did not show any significant differences for the parameters that were studied. See Table.

<table>
<thead>
<tr>
<th>Characteristics and Outcomes of Groups</th>
<th>P4 &lt; or = 40 ng/ml</th>
<th>P4 &gt; 40 ng/ml</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of transfer procedures</td>
<td>82</td>
<td>161</td>
<td>-</td>
</tr>
<tr>
<td>Oocytes retrieved (n)</td>
<td>19.6 ± 6.4</td>
<td>18.7 ± 6.1</td>
<td>NS</td>
</tr>
<tr>
<td>Embryos transferred</td>
<td>1.7 ± 0.4</td>
<td>1.7 ± 0.5</td>
<td>NS</td>
</tr>
<tr>
<td>Clinical miscarriage rate (%)</td>
<td>4/73 (5.5%)</td>
<td>11/137 (8.0%)</td>
<td>NS</td>
</tr>
<tr>
<td>Ectopic pregnancy rate (%)</td>
<td>0/73 (0%)</td>
<td>0/137 (0%)</td>
<td>NS</td>
</tr>
<tr>
<td>Implantation rate (%)</td>
<td>111/143 (77.6%)</td>
<td>214/272 (78.7%)</td>
<td>NS</td>
</tr>
<tr>
<td>Clinical pregnancy rate per transfer (%)</td>
<td>73/82 (89.0%)</td>
<td>137/161 (85.1%)</td>
<td>NS</td>
</tr>
<tr>
<td>Live birth rate per transfer (%)</td>
<td>69/82 (84.2%)</td>
<td>126/161 (78.3%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

CONCLUSIONS: Previous published studies looking at progesterone levels on the day of transfer in IVF cycles requiring complete hormone replacement (fresh egg donation transfers and/or frozen embryo transfers) have shown divergent results. Kofinas et al. in 2015 showed lower live birth rates and higher miscarriage rates with higher progesterone levels on day of transfer as compared to lower levels for frozen embryo transfers. However, Brady et al. in 2014 had higher clinical pregnancy and live birth rates for fresh donor egg transfers with higher progesterone levels. Our results differ from both of these other studies by showing high clinical pregnancy rates and live birth rates and low miscarriage rates regardless of the progesterone level for fresh day 5 transfers using donor eggs.

References:

P-173 Tuesday, October 18, 2016
BIRTH WEIGHT IN SINGLETONS AFTER AUTOLOGOUS FRESH TRANSFER ACCORDING TO THE OVARIAN HYPERSTIMULATION PROTOCOL USED. L. C. Londra1 S. M. Mumford. 1Reproductive Endocrinology and Infertility, Ohio State University, Columbus, OH; 2NICHHD, NIH, Rockville, MD.

OBJECTIVE: To evaluate whether the type of ovarian hyperstimulation protocol is associated with birth weight (BW) among singleton births from fresh autologous embryo transfer cycles.

DESIGN: Cohort study.

MATERIALS AND METHODS: The Society for Assisted Reproductive Medicine (SART) registry was used, including data collected from fresh autologous cycles that resulted in a singleton birth between years 2008-2013. ANOVA and chi square tests were used to analyze BW and gestational age characteristics by protocol. Modified Poisson regression with robust error variance was used to estimate risk ratios (RR) and 95% confidence intervals for low birth weight (LBW), very low birth weight (VLBW) by ovarian hyperstimulation protocol (luteal agonist, agonist flare, and antagonist). Models were adjusted for age, body mass index, race, previous full term birth, previous preterm birth, infertility diagnosis, oocytes retrieved, embryos transferred, embryo stage, vanishing twin and infant gender. Interactions between protocol and infertility diagnosis were also explored.

RESULTS: There were 54,041 births in the luteal agonist group, 10,943 in the agonist flare group and 47,886 in the antagonist group. There were no significant differences in BW, except in VLBW (BW less than1,500 g), which was 2% in the antagonist protocol group vs 1.8% in the luteal agonist and 1.6% in the agonist flare (P=0.0095). After adjusting for covariates, this difference remained significant (RR 1.16, 95% CI 1.02 to 1.31). A significant interaction was observed for LBW and VLBW between endometriosis and protocol. We found that among those with endometriosis, the agonist flare protocol was associated with a higher risk of LBW or VLBW compared to the luteal agonist protocol; for those without endometriosis there was no effect of the protocol.

CONCLUSIONS: The association between BW and the type of protocol used does not appear to be clinically relevant, although a modest increase in VLBW among antagonist cycles suggest suboptimal placentation in some patients. Data from hormonal monitoring during the cycle -not available for analysis in the SART database- might be useful in understanding differences in obstetric outcomes of singleton births after fresh autologous cycles.

P-174 Tuesday, October 18, 2016
EFFECT OF ELEVATED PROGESTERONE ON DAY OF TRIGGER ON LIVE BIRTH WITH A DAY 5 VERSUS DAY 6 BLASTOCYST TRANSFER. M. W. Healy,1 K. S. Richter,1 M. Yamasaki,1 N. Banks,2 C. M. Owen,1 A. DeCherney,1 K. Devine,1 M. J. Hill1,2National Institutes of Health- NICHD, Bethesda, MD; 3Shady Grove Fertility Reproductive Science Center, Rockville, MD; 4Department of OB/GYN, Walter Reed National Military Medical Center, Bethesda, MD.

OBJECTIVE: Recent literature demonstrates a negative effect of elevated progesterone (P) on day of oocyte maturation trigger causing endometrial-embryo asynchrony, ultimately leading to decreased live birth rates. In fresh blastocyst transfers, this effect may be more pronounced in day 6 compared to day 5 embryo transfers (ET), as embryo growth would be slower while endometrial development more advanced. Our objective was to evaluate the effect of P on the day of trigger in fresh IVF transfer cycles on day 5 versus day 6.

DESIGN: Retrospective cohort study.

MATERIALS AND METHODS: Autologous IVF cycles with fresh ET on day 5 and day 6 from 2011-2014 were included if P was measured on the day of trigger. The primary outcome was live birth. GEE modeling was performed to control for confounders including embryo quality, stage, age, and number of embryos transferred and account for multiple cycles. GEE modeling was used to determine the effect of P on day 5 versus day 6 ET comparing P as a continuous variable and P as a threshold variable ≥ 1.5ng/mL. ROC curves were evaluated for P and live birth.

RESULTS: 4,120 day 5 ETs and 230 day 6 ETs were analyzed. Day 6 transfers were less likely to have good quality embryos than day 5 (73% vs 83%) but both cohorts had similar rates of blastocyst stage ET (92% vs 91%). Live birth was less likely in day 6 embryo transfers (34% vs 46%) even when controlling for embryo confounders. In adjusted GEE models, the effect of P was more pronounced on day 6 ET than day 5 ET (OR 0.56 vs OR 0.77). Similarly, the effect of P=1.5 ng/ml was more pronounced on day 6 ET than day 5 ET (OR 0.40 vs OR 0.69). Day 6 ET live birth rates were moderately lower when P was in the normal range, but became much lower when P was > 1.5ng/ml (Table 1). The ROC for P predicting live birth was higher in day 6 embryos than day 5 embryos (0.58 vs 0.54). Interaction testing of P on day of ET demonstrated P<0.0001, further suggesting that the effect of P was more pronounced on a day 6 ET.