Table I. Luteal GnRH-an Group Characteristics and Outcomes.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Protocol (n=18)</th>
<th>GnRH-an (n=18)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycles Initiated</td>
<td>54</td>
<td>54</td>
<td>1.00</td>
</tr>
<tr>
<td>Age (years)</td>
<td>37.42 (5.97)</td>
<td>36.97 (5.97)</td>
<td>0.55</td>
</tr>
<tr>
<td>BMI (kg/m2)</td>
<td>23.98 (5.00)</td>
<td>25.00 (5.00)</td>
<td>0.07</td>
</tr>
<tr>
<td>Basal FSH of preceding cycle (mIU/mL)</td>
<td>10.14 (7.30)</td>
<td>7.21 (7.30)</td>
<td>0.03</td>
</tr>
<tr>
<td>Basal FSH of index cycle (mIU/mL)</td>
<td>6.62 (0.01)</td>
<td>5.15 (0.01)</td>
<td>0.005</td>
</tr>
<tr>
<td>Peak E2 (pg/mL)</td>
<td>1523.00 (1716.96)</td>
<td>567.05 (657.95)</td>
<td>0.005</td>
</tr>
<tr>
<td>Oocytes retrieved</td>
<td>5.14 (2.38)</td>
<td>5.32 (2.38)</td>
<td>0.49</td>
</tr>
</tbody>
</table>

CONCLUSION: In patients with persistent elevations in basal FSH, the use of a luteal GnRH-an prior to gonadotropin administration may provide an acceptable outcome. Extensive counseling with regard to prognosis, as well as alternative options including adoption and oocyte donation should be undertaken prior to initiating such a cycle.

Supported by: None.

P-822
WITHDRAWN

P-823
DIFFERENTIAL OVARIAN RESPONSE AND CLINICAL OUTCOME IN CONTROLLED OVARIAN HYPERSTIMULATION PROTOCOLS BY THE COMMON SINGLE NUCLEOTIDE POLYMORPHISM OF FSH RECEPTOR GENE. H. Lee, S. Cha, I. Song, M. Koong, I. Kang, J. Jun. Cheil General Hospital, Sungkyunkwan Univ School of Medicine, Seoul, Republic of Korea.

OBJECTIVE: Several studies have shown high variability in clinical outcome of women undergoing controlled ovarian hyperstimulation (COH). Recently, single nucleotide polymorphism (SNP) in FSH receptor (FSHR) gene could predict patterns of ovarian response by exogenous FSH. In this study, we evaluated the association of FSHR-SNP with ovarian response and clinical outcome of COH cycles in patients undergoing IVF.

DESIGN: Analysis of genetic screening data and clinical outcome of COH cycles in patients undergoing IVF in 2005 were included in this trial. All patients were stimulated with our standard oral contraceptive/leuprolide acetate down-regulation protocol. Both groups were stimulated with individualized doses of recombinant FSH. Statistical evaluations were performed with Student’s t-test, Wilcoxon rank-sum test and multivariate regression analysis.

RESULTS: We observed a strong correlation between number of oocytes retrieved and peak E2 levels in group I (r = 0.13). The mean of peak E2/oocyte ratio was 271 pg/mL (SEM 13.3) in group I compared to 373 pg/mL (SEM 48.8) in group II (p = 0.005). The correlation between number of dominant follicles (>18mm) and number of oocytes retrieved was maintained in group I (r = 0.08, F < 0.0001) but not in group II (r = 0.05, F = 0.16). In addition, age was inversely associated with number of oocytes, independent of peak E2 (r = -0.03). In a multivariate regression model, both age and E2 were found to be independent predictors of the number of oocytes retrieved (r = 0.37).

CONCLUSION: In women over 41 years of age undergoing IVF, both the peak estradiol levels and the number of lead follicles are less useful in predicting the number of oocytes retrieved than in younger women. The high E2/oocyte ratio in older women implies that with advancing age, granulosa cell function is intact despite absence of oocytes.

Supported by: None.

P-824
FOLLICLE NUMBER AND PEAK ESTRADIOL LEVELS ARE LESS USEFUL IN PREDICTING NUMBER OF OOCYTES RETRIEVED IN OLDER WOMEN UNDERGOING IN VITRO FERTILIZATION (IVF). A. D. Wold, F. Sanguineti, E. Kuczynski, P. Pasquale. Yale Univ. School of Medicine, New Haven, CT.

OBJECTIVE: To determine if peak estradiol levels (E2) and follicle measurements remain useful clinical parameters in predicting number of oocytes retrieved in older women undergoing IVF treatment.

DESIGN: Retrospective analysis

MATERIALS AND METHODS: A total of 270 normogonadotropic women over 35 years of age completed 284 cycles of IVF between January 2004 and December 2005. The ovarian response was monitored with serial ultrasound measurements of follicular growth in combination with serum E2 levels. In the study population, 217 cycles were in patients between 35 and 41 years of age (group I) and 67 were in patients older than 41 years (group II). The majority of patients in group I received luteal phase suppression with leuprolide acetate while the majority of patients in group II received mini flare-up leuprolide acetate. Both groups were stimulated with individualized doses of recombinant FSH. Statistical evaluations were performed with Student’s t-test, Wilcoxon rank-sum test and multivariate regression analysis.

RESULTS: We observed a strong correlation between number of oocytes retrieved and peak E2 levels in group I (r = 0.41), as opposed to group II (r = 0.13). The mean of peak E2/oocyte ratio was 271 pg/mL (SEM 13.3) in group I compared to 373 pg/mL (SEM 48.8) in group II (p = 0.005). The correlation between number of dominant follicles (>18mm) and number of oocytes retrieved was maintained in group I (r = 0.08, F < 0.0001) but not in group II (r = 0.05, F = 0.16). In addition, age was inversely associated with number of oocytes, independent of peak E2 (r = -0.03). In a multivariate regression model, both age and E2 were found to be independent predictors of the number of oocytes retrieved (r = 0.37).

CONCLUSION: In women over 41 years of age undergoing IVF, both the peak estradiol levels and the number of lead follicles are less useful in predicting the number of oocytes retrieved than in younger women. The high E2/oocyte ratio in older women implies that with advancing age, granulosa cell function is intact despite absence of oocytes.

Supported by: None.

P-825
RECOMBINANT FSH ALONE VS. COMBINATION FSH/LH STIMULATION (IVF). A. D. Wold, F. Sanguineti, E. Kuczynski, P. Pasquale. Yale Univ. School of Medicine, New Haven, CT.

OBJECTIVE: Despite an abundance of clinical trials over the past several years, significant controversy persists regarding the optimal stimulation protocol for normal responders undergoing in vitro fertilization. This study was designed to compare the outcomes achieved with the use of recombinant FSH alone to the use recombinant FSH plus urinary hMG.

DESIGN: Prospective, trial in a large private infertility practice.

MATERIALS AND METHODS: A total of 270 normogonadotropic women over 35 years of age completed 284 cycles of IVF between January 2004 and December 2005. The ovarian response was monitored with serial ultrasound measurements of follicular growth in combination with serum E2 levels. In the study population, 217 cycles were in patients between 35 and 41 years of age (group I) and 67 were in patients older than 41 years (group II). The majority of patients in group I received luteal phase suppression with leuprolide acetate while the majority of patients in group II received mini flare-up leuprolide acetate. Both groups were stimulated with individualized doses of recombinant FSH. Statistical evaluations were performed with Student’s t-test, Wilcoxon rank-sum test and multivariate regression analysis.

RESULTS: We observed a strong correlation between number of oocytes retrieved and peak E2 levels in group I (r = 0.41), as opposed to group II (r = 0.13). The mean of peak E2/oocyte ratio was 271 pg/mL (SEM 13.3) in group I compared to 373 pg/mL (SEM 48.8) in group II (p = 0.005). The correlation between number of dominant follicles (>18mm) and number of oocytes retrieved was maintained in group I (r = 0.08, F < 0.0001) but not in group II (r = 0.05, F = 0.16). In addition, age was inversely associated with number of oocytes, independent of peak E2 (r = -0.03). In a multivariate regression model, both age and E2 were found to be independent predictors of the number of oocytes retrieved (r = 0.37).

CONCLUSION: In women over 41 years of age undergoing IVF, both the peak estradiol levels and the number of lead follicles are less useful in predicting the number of oocytes retrieved than in younger women. The high E2/oocyte ratio in older women implies that with advancing age, granulosa cell function is intact despite absence of oocytes.

Supported by: None.
RESULTS: There were no differences between the 2 groups in terms of patient age, days of stimulation, total FSH dose, or peak estradiol level. Similarly, there were no differences in the number of oocytes retrieved, the number of embryos transferred, or the number of embryos frozen. Ongoing/delivered pregnancy rates were also similar. Group 2 patients did receive significantly more injections ($p<0.01$) and, although the total gonadotropin cost was lower in Group 2 ($1955.31 vs. $2060.23$), this difference was offset by the additional expense ($307.18$) incurred with the sono-guided ET.

CONCLUSION: Normal responders undergoing IVF responded similarly to recombinant FSH alone and combination r-FSH and hMG. While stimulation parameters did not differ significantly, patients receiving combination therapy paid approximately $105 less for their medications, but required twice as many injections. Although Group 2 patients had their ETs performed using ultrasound guidance, which added approximately $307$ to the cost of their cycle, the pregnancy rates were not statistically different between the two groups. Neither the addition of urinary gonadotropin nor the routine use of ultrasound guided ET appears to increase overall pregnancy rates.

Supported by: None

P-826

GONADOTROPIN-RELEASING HORMONE ANTAGONISTS: A FIRST LINE OVARIAN STIMULATION PROTOCOL FOR IVF?

OBJECTIVE: Gonadotropin releasing hormone (GnRH) antagonists have been increasingly used to provide hypothalamic suppression in IVF cycles over the past 5 years. This study examines in good prognosis patients whether antagonist protocols generate equivalent implantation rates (IR), pregnancy rates (PR), and live birth rates (LR) compared to GnRH agonist down-regulated protocols. Such an outcome would support the use of GnRH antagonist in first line ovarian stimulation protocols for IVF.

DESIGN: Retrospective case control study with institutional review board approval at a University-based IVF program.

MATERIALS AND METHODS: From 2003 to 2005, 62 patients (<37 years) with no prior IVF cycles underwent an antagonist cycle on the basis of their clinical history and physical exam. Patients with polycystic ovarian syndrome or diminished ovarian reserve secondary to an oophorectomy were excluded. Gonadotropins were started on day 2 when FSH < 12 mIU/mL, estradiol (E2) < 75 pg/mL, and no ovarian cysts were noted by sonography. Antagonist was initiated when serum E2 levels exceeded 1000 pg/mL and/or lead follicle diameter exceeded 13 mm. The control group (n=185) had the same inclusion criteria but were down regulated with leuprolide beginning on day 21. Randomization was performed using a random number table to choose 3 age matched patients for each patient in the antagonist group. Cycles were evaluated for the number of oocytes retrieved, IUs gonadotropins used, and IR, PR, and LR.

RESULTS: Mean gonadotropin use was the same in antagonist and agonist cycles, (2427 ± 169 vs. 2467 ± 53 IU; $p=0.96$). Fewer oocytes per cycle were retrieved in the antagonist group than in the agonist group (11.5 ± 0.8 vs 15.6 ± 0.5, $p<0.001$). The number of embryos transferred per cycle was the same in the two groups (2.2 ± 0.1 and 2.2 ± 0.1, $p=0.98$). IR and PR were not significantly different in the antagonist group ($p=0.47$ and $p=0.65$, respectively in Table 1). LR did not differ significantly between the two groups ($p=0.47$).

CONCLUSION: GnRH antagonists were introduced to clinical practice 5+ years ago. Nonetheless, many centers reserve these protocols for patients with a poor prognosis or who have failed down-regulated leuprolide cycles. With few injections and side effects, antagonists are appealing. Although several studies have suggested lower PRs in antagonist vs agonist cycles, these studies did not look at first time, good prognosis patients. Our retrospective data indicate that, when this patient group is examined, there is no significant difference in IR, PR and LR when antagonist and agonist treatment protocols are followed. A randomized, prospective controlled trial comparing the two protocols should be performed in order to determine whether the two protocols generate comparable outcomes.

Supported by: None

P-827

GONAL F-RFF VS. GONAL F MULTI-DOSE FOR IVF STIMULATION: A PROSPECTIVE, SEQUENTIAL TRIAL.
K. M. Silverberg, T. L. Minter, R. Basaray. Texas Fertility Center, Austin, TX; Serono, Inc., Boston, MA.

OBJECTIVE: Several previous studies have suggested efficiency differences for different formulations of Gonal F. It has also been suggested that all by mass technology should attenuate or eliminate these differences. This study was designed to compare the outcomes achieved with the use of Gonal F multi-dose and Gonal F-RFF for IVF stimulation in normal responders.

DESIGN: Sequential trial of two different formulations of recombinant FSH in a large private infertility practice.

MATERIALS AND METHODS: 109 normal responders undergoing IVF with Gonal F multidose or Gonal F-RFF were included in this trial. All patients were stimulated with our standard oral contraceptive/leuprolide acetate down-regulation protocol. r-hCG was administered when the largest follicle achieved a mean diameter of 20 mm, and transvaginal oocyte retrieval was performed 36 hours later. 57 patients were stimulated with Gonal F multidose (Group 1), while 52 received Gonal F-RFF (Group 2). Statistical analysis was performed using ANOVA, Wilcoxon sign-rank testing, and Chi Square analysis.

RESULTS: There were no differences between the 2 groups in terms of patient age, days of stimulation, or starting FSH dose. Similarly, there were no differences in peak E2 levels, total number of oocytes retrieved, or number of embryos transferred. Group 2 patients required significantly less gonadotropin, they had more mature follicles on the day of hCG administration, and ongoing/delivered pregnancy rates were significantly greater in Group 2 as well.