Corifollitropin alfa is a new recombinant gonadotropin with sustained follicle stimulating activity that has been proven in the Engage trial (Devroye et al. 2009) to provide equally high ongoing pregnancy rates compared with daily recombinant follicle-stimulating hormone (rFSH). As the ultimate goal of controlled ovarian stimulation (COS) for assisted reproductive technology (ART) is achieving healthy offspring, follow-up trials from the Engage trial have been conducted to assess live birth rates from patients who became pregnant following fresh embryo transfer (ET) and cumulative ongoing pregnancy resulting from ET of frozen-thawed embryos (FTET).

**Material and Methods:** In Engage, the largest double-blind, randomized trial ever performed in in vitro fertilization, 1506 patients (mean age 31.5 years; body weight 68.6 kg) were treated with either a single dose of 150 μg corifollitropin alfa (Elonva, N.V. Organon) or daily 200 IU rFSH (follitropin beta, Puregon Pen, N.V. Organon) for the first 7 days of ovarian stimulation in a GnRH antagonist (ganirelix, Orgalutran, N.V. Organon) protocol. As a follow-up, live-birth deliveries were recorded. In addition, data on patients with cryopreserved embryos in the intervention cycle were evaluated to assess the cumulative ongoing pregnancy rates. In total, 541 patients with ongoing pregnancies from the Engage trial were followed up to delivery. In line with the ongoing pregnancy rates after fresh ET (38.9% and 38.1% for the corifollitropin alfa and rFSH groups, respectively), equally high live birth rates per started cycle of 35.6% and 34.4% were observed in the corifollitropin alfa and rFSH treatment groups, respectively. A total of 659 infants were live born: 196 from singleton pregnancies and 148 from multiple pregnancies after corifollitropin alfa treatment, and 202 from singleton and 113 from multiple pregnancies after rFSH treatment. Of the 344 patients with cryopreserved embryos who were included in the follow-up trial there were 148 patients in the corifollitropin alfa group and 147 in the rFSH group with at least one ET. In total, 225 FTET cycles were performed in the corifollitropin alfa group and 224 FTET cycles in the rFSH group, leading to cumulative ongoing pregnancy rates of 47.2% in the corifollitropin alfa group and 44.9% in the rFSH group. Extrapolating the cumulative ongoing pregnancy data with the rate of pregnancy loss as observed after fresh ET would provide cumulative live birth rate estimates of 43.4% in the corifollitropin alfa group and 41.3% in the rFSH group.

**Conclusions:** Corifollitropin alfa has been proven to be a highly effective treatment option and comparable to rFSH in terms of the live birth outcome from patients pregnant following fresh ET and in terms of the cumulative pregnancy rate from cryopreserved embryos. Per treatment cycle of corifollitropin alfa in a GnRH antagonist protocol cumulative ongoing pregnancy rates over 45% were achieved.

**Reference:**

**Disclosures:** Financial support for this study was provided by Schering-Plough Corporation, now Merck & Co., Inc., Whitehouse Station, NJ, USA.

**O-120 Outcome of fresh IVF/ICSI cycles in relation to the number of oocytes collected: A review of 4,701 treatment cycles**

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**Introduction:** The success of IVF/ICSI cycles depends on satisfactory ovarian response to stimulation. The number of oocytes collected per stimulation cycle has been used among other parameters to assess adequate response in controlled ovarian stimulation with gonadotropins. However, the optimal number of retrieved oocytes that maximises cycle outcome is not known.

**Material and Methods:** Cycle outcomes were assessed in relation to the number of oocytes collected after controlled ovarian stimulation. Logistic regressions were used to assess the effect of women’s age, BMI, early follicular FSH, days of FSH stimulation, number of stimulated follicles and oocytes collected (as dependant variables), on the clinical pregnancy rates and on the chances of having embryos to freeze (as independent variables).

**Results:** A total of 4,701 consecutive fresh IVF/ICSI cycles carried out between September 2004 and October 2009 were included. The mean (SD) age of women was 36 (4.48) years, the mean (SD) daily dose of FSH for stimulation was 277 iu (101.1), while the mean (SD) number of stimulated follicles and eggs collected was 11.1 (7.0) and 10.6 (6.9), respectively. The mean (SD) number of embryos replaced was 1.8 (0.51) and a total of 1403 (30%) women achieved a clinical pregnancy.

There was a significant association between the number of eggs collected and the chances of proceeding to embryo transfer (ET) \(P < 0.001\). There was no difference in the cumulative pregnancy rates or live birth rates \(< 0.001\). No significant association was noted between the fertilisation rates and number of eggs collected \(P > 0.05\). No further increase in the proportion of blastocyst transfers was noted beyond 15 eggs \(P > 0.05\). Clinical pregnancy rates increased as the number of eggs collected increased \(P < 0.01\). However, after adjusting for age and other variables through logistic regressions, the increase in the clinical pregnancy rates was only noted with an increase up to six eggs \(P < 0.001\). The proportion of women having blastocyst transfer increased as the number of eggs collected increased \(P < 0.001\). No further increase in the proportion of blastocyst transfers was noted beyond 15 eggs \(P > 0.05\). The proportion of women having at least one embryo frozen increased as the number of eggs collected increased \(P < 0.001\). No further increase in the proportion of blastocyst transfers was noted beyond 15 eggs \(P > 0.05\). Logistic regression analysis, showed that after adjusting for variables, the chances of having surplus embryo to freeze, increased as the number of eggs increased up to 18 eggs \(P = 0.02\). No significant improvement in women who had more than 18 eggs collected.

**Conclusions:** The proportion of women having blastocyst transfer and the clinical pregnancy rates, increased with the number of eggs collected. After adjusting for variables, the clinical pregnancies increased proportionately with the number of eggs collected, up to six eggs, but a plateau was noted beyond that. A similar increase was noted in the proportion of women having surplus embryos to freeze and this effect ceased beyond 18 eggs. This information could be useful in planning stimulation protocols and counselling women undergoing IVF/ICSI treatment.

**O-121 Effect of ethnicity on ivf outcome in the western world: a meta-analysis**

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**Introduction:** Several studies have addressed the effect of ethnicity on the outcome of IVF treatment producing inconsistent opinions. Further, the cause of any discrepancy in outcome remains ill understood and further studies are needed to establish if the ethnic background per se is pivotal in causing the difference...
or that the outcome is related to socio-economic factors of ethnically different population in the Western world. We carried out a meta-analysis of all the published studies to investigate the effect of ethnicity on IVF outcome.

**Materials and Methods:** A systematic review of the relevant literature was performed using the PubMed database which searched articles from MEDLINE and other life science journals from 1975 to May 2009. Participants included women undergoing non-donor IVF and data from IVF cycles recorded on the Society for Assisted Reproductive Technology (SART) database. Women undergoing donor IVF were excluded. Data was collected regarding; study design, population size and treatment protocol and outcome. Where possible, the data on age, BMI and infertility diagnosis was also collected for subgroup analyses.

The meta-analysis was performed using Review Manager, (version 4.2 for Windows; Copenhagen, Denmark, The Nordic Cochrane Centre, The Cochrane Collaboration) to combine and analyse the data. Each ethnic group (South Asian, African American, American Asian and Hispanic) was compared with a Caucasian control population for the primary and secondary outcomes. The primary outcome was to assess the effect of ethnicity on pregnancy rate. Secondary outcomes were to assess effect on; live birth rate, miscarriage rate, ectopic pregnancy rate and cycle cancellation rate. Dichotomous data was expressed as a combined odds ratio with 95% confidence intervals while continuous data was expressed as a weighted mean difference with 95% confidence intervals. Due to the nature of the studies a degree of heterogeneity was expected, this was assessed in each case by examining the \( \chi^2 \) and I\(^2 \) statistics and where relevant a sensitivity analysis was performed.

**Results:** Thirteen studies were included in the meta-analysis. African American women had a significantly lower pregnancy rate than Caucasian women (odds ratio 0.71; 95% confidence intervals 0.67 – 0.76) as did American Asians (odds ratio 0.67, 95% confidence intervals 0.65 – 0.70) and Hispanic women (odds ratio 0.89, 95% confidence intervals 0.85 – 0.93). Caucasian women were shown to be statistically more likely to achieve live births than African Americans (odds ratio 0.59, 95% confidence intervals 0.54 – 0.65), American Asian (odds ratio 0.79, 95% confidence intervals 0.65 – 0.97) and Hispanic women (odds ratio 0.9, 95% confidence intervals 0.85 – 0.95). Caucasian women were shown to be less likely to have a miscarriage than African American (odds ratio 1.69, 95% confidence intervals 1.64 – 1.79) and American Asian women (odds ratio 1.16, 95% confidence intervals 1.10 – 1.21). Caucasian women were less likely to have cycles cancelled that African Americans (odds ratio 1.46, 95% confidence intervals 1.19 – 1.78). There was no difference seen between any of the ethnic populations with regards to ectopic pregnancy rate when compared with a Caucasian control. There was no difference seen in any outcome measures between the UK-based South Asian women and the Caucasian control group.

**Conclusions:** There is evidence that ethnicity may affect the outcome of in vitro fertilisation procedures, particularly in women of African American descent. However it is possible that this is influenced primarily by socioeconomic factors that manifest itself as lack to access to medical treatment leading to higher age at first encounter and higher prevalence of tubal disease and obesity which are more common in the African American population. Asian women in the UK seem to have similar outcome to white Caucasians however, the sample size remain small despite the meta-analysis.
with body mass index 23.1 (CI 22.9-23.2), and E2 the day of hCG of 2028.0 (CI 1998.5-2057.5) pg/ml.

From the survival curves, CPLB was 52% (CI 51 to 53) for the patients in which SoET was 5, representing approximately an increase of 10% per ET. In patients in whom up to 10 embryos were replaced, CPLB was 69% (CI 68 to 70), which means an increase of approximately 3.6% per ET when SoET to reach live-birth was between 5 and 10. When up to 15 embryos in consecutive cycles until reaching live-birth or abandon were replaced, CPLB was 79% (CI 78 to 80), with an 2.8%increase per ET in this category. Finally, in patients needing >30 ET, the maximum stated CPLB was 92% (CI 89 to 96), only slightly increased (approximately 0.5% per embryo transferred) in comparison with the cases where between 10 and 15 embryos were needed.

Among patients <35y, CPLB after 5 ET was 54% (CI 53 to 55), decreasing significantly, as age increased, moderately down to 39 % (CI 34 to 43) in women aged 38-40y and dramatically reduced women >40y (17%, CI 12 to 22), being in the latter group the plateau reached with 10 ET, limiting the CPLB to 31% (CI 20 to 42).

When only one single cause of infertility was identified in the couple, the maximum results reached were better in patients with tubal occlusion (97%, CI 91 to 100) and polycystic ovarian syndrome (92%, CI 88 to 96), decreasing mildly in azoospermia and testicular sperm extraction (86%, CI 75 to 98) because azoospermia and idiopathic infertility (86%, CI 74 to 98), and having the worse results in endometriosis patients (83%, CI 75 to 90).

Conclusions: CPLB depending on the SoET provide with realistic, accurate and precise information regarding the likelihood of IVF success, and can be used to guide patients and practitioners in the decision-taking process after failed IVF attempts, also showing the differences depending on women’s age and infertility aetiology.

O-124 Prediction of pregnancy outcomes in coasted ivf/icsi cycles by absolute drop in serum fsh level and mean level of fsh on the day of hCG administration

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Introduction: Serum estradiol (E2) levels on the day of human gonadotropin hormone (hCG) administration has been suggested to bare correlation with clinical outcome in women being coasted to minimise risk of ovarian hyper-stimulation syndrome (OHSS) during in-vitro fertilisation/ intra-cytoplasmic sperm injection (IVF/ICSI) treatment. Our study aimed to explore if serum FSH levels could predict clinical pregnancy (CP) outcome during coasting.

Material and Methods: This is a retrospective analysis of 3-years database (2006 to 2008) in a tertiary Reproductive Medicine Unit (St. Bartholomew’s Hospital, London, UK). Women at or below 40 years of age, who underwent IVF/ICSI treatment with down-regulation, followed by gonadotropin stimulation protocol and were coated to prevent OHSS. All the subjects had serum E2 and FSH levels measured from the start of coating to the day of hCG administration and the decline of serum FSH levels through the coating period was calculated.

We compared women who had CP with those non-pregnant (NP). Multiple regression analysis was performed to correlate the association of 1) serum FSH levels on the day of hCG administration and 2) absolute FSH fall during coating period with the CP. Receiver Operating Characteristic (ROC) curves were generated to determine the cut-off serum FSH level to predict CP.

Results: Eighty-three women were included in the study, of which 38 (45.8%) had achieved CP. Between the groups of women with CP and without, the mean of the women’s age (32.9 ± 3.7 vs 33.6 ± 4.3; p = 0.36), basal serum FSH level (6.4 ± 2.0 vs 6.0 ± 1.4; p = 0.66), body mass index 24.3 ± 3.3 vs 24.3 ± 3.2; p = 0.89), duration of infertility (4.7 ± 2.5 vs 4.9 ± 2.9; p = 0.77), starting dose (205.1 ± 87.7 vs 205.4 ± 77.0; p = 0.75) or total gonadotropin dose (2150.7 ± 1604.0 vs 1940.2 ± 758.2; p = 0.58), days of stimulation (14.8 ± 1.1 vs 14.1 ± 3.4; p = 0.22), days of cooling (3.4 ± 1.5 vs 3.4 ± 1.8; p = 0.07), and days of decreased gonadotropin doses (3.4 ± 1.8 vs 2.4 ± 1.9; p = 0.44) were similar. Polycystic ovarian syndrome was the cause of infertility in 28.9% and 15.5% women in CP and NP cycles respectively (p = 0.15).

The mean FSH levels on the hCG day were 4.0 ± 1.9 IU/l and 3.7 ± 1.7 IU/l in CP and NP cycles respectively (p = 0.07). The mean fall in FSH levels during coating between the two groups were 8.9 ± 4.6 IU/l and 7.5 ± 2.8 IU/l respectively. The absolute fall was statistically significant on multiple regression analysis (p < 0.05).

The ROC analysed revealed that the best discriminative cut-off level of FSH (on hCG day) and its absolute fall were 3.3 IU/l and 11 IU/l respectively, in predicting CP outcome.

Conclusion: In women who were coated in IVF/ICSI treatment to reduce the risk of OHSS, the level of decline in serum FSH values through coasting period may predict clinical outcome.

SELECTED ORAL COMMUNICATION SESSION
SESSION 33: PSYCHOLOGY & COUNSELLING 2
Tuesday 29 June 2010 10:00 - 11:30

O-125 Reproductive decision making: a systematic review

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Background: The deliberation and decision-making involved in starting families is of growing interest because of contemporary trends showing declining fertility rates, increased maternal age at first birth and reduced family sizes. The aim of the present systematic review was to examine the reproductive decision making literature to identify which factors are important in influencing whether and when to become a parent.

Methods: A search strategy was developed and tested according to Cochrane and National Institute Clinical Excellence guidelines. The search strategy included broad reproductive terms (e.g. reproduction, fertility, parenthood) that were refined through the employment of sub terms (e.g. delay, values and motivation) for the period 1990 – 2009 applied to twelve electronic databases (e.g. Medline, British humanities index, Psychinfo). Only prospective and/or cross-sectional studies employing quantitative analysis of the relationship between preconception psychosocial or other decisional drivers and childbearing intention/behaviour were included.

Results: A total of 17,475 papers were identified; 4497 duplicates, 5506 unrelated papers (e.g., fertile soil) and 6628 that did not meet the inclusion criteria were removed. From the remaining 844 titles pertinent to the research, 419 abstracts were thoroughly reviewed, resulting in 186 full texts being examined. After full examination, 68 papers were included in the systematic review and subjected to full critical appraisal and data extraction. The studies assessed a total of 7 childbearing outcomes: child desire (N = 8), parenting motivations (N = 7), intentions (N = 15), childbearing plans (N = 8), timing of first birth (N = 14), likelihood of first birth (N = 10) and voluntary childlessness (N = 16), with some articles covering more than one outcome. The results revealed that younger age, higher education, being in a stable and supportive relationship and having religious affiliations significantly predicted a greater likelihood of first birth. In contrast higher professional status and income significantly increased postponement of childbearing but a minority of studies produced other patterns of association. Only 28% of the studies focused solely on women (n = 19), only 1 out of the 68 examined male-only data and finally, the majority of studies (62%) were cross-sectional.

Conclusion: The factors helping to initiate parenthood are more diverse (e.g. demographic, relational, social) than those causing delays in starting a family (career/socioeconomic). These findings may help explain contemporary reproductive trends. However there is a lack of studies examining other predictors of reproductive decision making and behaviour, i.e. psychological and biological factors. Further, we know little about how men deliberate about starting families. These gaps in knowledge emphasise the need for prospective research with men and women that cover psychological, social and biological drivers.

O-126 Awareness, attitudes & intentions to fertility medical & non-medical treatment. Findings of the international fertility decision-making study (IFDMS)

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