P-306 Delayed timing of human chorionic gonadotropin injection in combination with earlier insemination can improve the outcome of intrauterine insemination

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Introduction: Different protocols are used in intrauterine insemination (IUI) to improve the successful rate, but the results and the conclusions have been conflicting. Optimal timing of hCG administration and insemination protocol remains one of the controversial aspects of IUI cycles associated with ovarian hyperstimulation. Although it is currently believed that insemination at 32–38 h after hCG administration provides the best results, clinical evidence supporting this conclusion is scarce. Based on the hypothesis that endogenous luteinizing hormone (LH) surge before exogenous hCG administration is not inevitably detrimental in IUI cycles, if insemination can be given within a critical period for fertilization; and the knowledge that the fertilizable lifespan of human oocyte and sperm is estimated to be 12–24 and 48–72 h, respectively, we designed this randomized controlled study to re-evaluate the timing of hCG administration and insemination protocol in IUI cycles to improve the treatment outcome.
Materials and methods: Patients undergoing IUI from September 2003 to December 2005 were randomized allocated into two treatment groups. Ovarian stimulation was initiated with clomiphene citrate 100 mg daily from day 3 of the menstrual cycle for 5 days, in combination with 100 IU of recombinant FSH (rFSH) on alternate days starting on day 4. First follicular monitoring was performed on days 10–12. According to follicular size, patients were either received hCG 10,000 IU injection when at least one leading follicle was larger than 17 mm (Group A, controlled as in usual treatment protocol), or continued rFSH injection on alternate days until at least one leading follicle was larger than 20 mm (Group B, study protocol). IUI was performed 36–38 h (Group A) or 12–24 h (Group B) after hCG injection, respectively. Luteal phase supplement was achieved with micronized progesterone 200 mg transvaginally per day from the next day of insemination for at least 14 days.
Results: Group A consisted of 178 treatment cycles in 128 patients and Group B 183 cycles in 121 patients. The two groups had similar background characteristics in terms of mean age of the female patients, duration of infertility, sperm parameters and the indications for treatment (all $p>0.05$). There was no statistical significance in the number of stimulated follicles larger than 14 mm on the day of hCG injection (3.2±1.43 and 3.8±1.44, respectively). Importantly, the clinical pregnancy rates were 19.1% (34/178) per cycle in Group A and 30.6% (56/183) in Group B, which were statistically significant ($p<0.05$, Chi-square). Of these, the multiple pregnancy and miscarriage rate were both similar between the two groups ($p>0.05$).
Conclusions: Many confounding variables may influence the success rate of IUI, including patient selection, stimulation protocols, number of inseminations per cycle, methods of cycle monitoring, various techniques of sperm preparation and different modalities of insemination. Of these, most studies support and accommodate the administration of controlled ovarian hyperstimulation protocol similar to that used for IVF cycles. However, if considering the differences in biological characteristics between IVF and IUI, the protocol needs to be modified. Because the necessity to avoid premature endogenous LH surge in IVF cycles may contrarily result in iatrogenic premature LH administration in IUI patients. Delayed timing of hCG injection to avoid iatrogenic premature LH surge in combination with earlier insemination to eliminate the possible adverse effect of earlier ovulation can effectively improve the outcome of intrauterine insemination. Our protocol in this study offers the advantages of simplicity, easiness and effectiveness compared with the conventional ovarian hyperstimulation and timing of insemination adapted from IVF treatment.

POSTER SESSION

ART, clinical: outcome

P-307 Obesity and poor reproductive outcome: the subtle role of endometrium

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Introduction: Obese women present a poor reproductive outcome, either in natural and assisted conception cycles, leading to a lower chance for a healthy liveborn. Obesity could impair reproduction acting on the ovary and/or the endometrium. Many works have suggested the leading or exclusive role of the ovary. Employing the ovum donation model, in order to dissect both components, an anti-implantatory milieu has been discarded, suggesting that an ovarian-based alteration affects the quality of the oocyte and resulting embryos. However, only three previous studies have been performed to date in the ovum donation model, presenting several statistical flaws. The aim of the present work is to further explore the potential role of the endometrium on the reproductive outcome of obese patients, using the ovum donation model with a huge sample of recipients and correcting statistical flaws of previous studies.
Materials and methods: All first cycles of ovum donation performed in the Instituto Valenciano de Infertilidad (Valencia, Spain) from January 2001 to July 2005 with good quality embryos replaced and no risk factors for miscarriage were included (n=2656 recipients) and divided according to their BMI in four groups: lean<20 kg/m^2 (n=471; 17.7%); normal 20–24.9 kg/m^2 (n=1613; 60.7%); overweight 25–29.9 kg/m^2 (n=450; 17.0%); obese $\geq$30 kg/m^2 (n=122; 4.6%). Donors were young, healthy and with normal BMI ranges. Implantation, pregnancy, miscarriage, ongoing pregnancy and ongoing pregnancy per cycle rates were compared among them.
Results: Overall pregnancy, implantation, miscarriage and ongoing pregnancy rates were 59.0%, 33.8%, 16.4% and 74.5%, respectively. Similar implantation and pregnancy rates appeared in the four BMI groups considered, as well as biochemical, ectopic and miscarriage rates, despite a negative trend when BMI increased. Therefore, ongoing pregnancy rates did not differ according to BMI. However, ongoing pregnancy rates per cycle were worst in the overweight (38.9%) and obese (36.1%) groups than in the lean (46.7%) and normal (45.2%) groups ($p=0.017$), owing to the summatory effect of all these trends. In addition, women under 25 kg/m^2 (n=2084) presented an ongoing pregnancy rate per cycle rate of 38.3% in comparison to 45.5% in those with 25 kg/m^2 or more (n=572) ($p=0.002$).
Conclusions: Weight excess exerts a deleterious effect on the endometrium. It is subtle, but should be taken into account.

P-308 Slow and intermittent embryo transfer: a prospective cohort study

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Introduction: This cohort study is a part of a controlled prospective randomized study enrolled now in our center. Our aim was to compare slow and intermittent embryo transfer with the classical rapid instantaneous embryo transfer technique.
Materials and methods: This study involved 110 infertile women who applied to our IVF center over the last 3 months period. All patients had a long protocol with a combination of the GnRH agonist and recombinant FSH. Women included were of good prognosis and only fresh embryo transfers were included. All patients received ultrasound-guided embryo transfer using a soft catheter (Labotech) and day 2 transfer was performed in all cycles. In the standard instantaneous embryo transfer technique, after aspirating 10 µl of medium, the embryos were aspirated at once, then 10 µl of medium was aspirated again and the embryos were transferred all at once at the same endometrial point; however, in the intermittent ET technique the embryos were aspirated in intermittent way, one by one with adequate medium and the

transfer was performed slowly at different endometrial points over a 10–15 s period. The amount of medium given in the two groups was the same, 30 μl per transfer. Main outcome measure: Pregnancy rates.
Results: Findings revealed no significant differences between the two groups regarding the demographic characteristics (Women's age, day 3 FSH levels, fertilization rate and number of good quality embryos). Overall, pregnancy rates per transfer using intermittent and instantaneous embryo transfers were 52.3 and 30.8% (p=0.041), respectively. No difference was found in embryo retention rate. Implantation rate, biochemical pregnancy and ectopic pregnancy rates will be compared later.
Conclusion: In this prospective cohort study, slow and intermittent embryo transfer technique resulted in a significant increase in pregnancy rate.

P-309 Outcome of spontaneous pregnancies within an ART setting

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Introduction: As evidence mounts on a slight increase in malformations, chromosomal anomalies and imprinting defects among ART (assisted reproduction technologies) children compared to spontaneously conceived children in fertile couples, the goal of this study is to report the outcome of spontaneous pregnancies within an ART setting.
Materials and methods: Data on 78 spontaneous pregnancies reported to our tertiary assisted reproduction centre between 1 January 2004 and 31 December 2005 were retrieved and analysed.
Results: Of the 78 spontaneous pregnancies achieved, 34 of these pregnancies were reported before initiating ART treatment. Twenty-eight of these patients consulted for primary sterility on the average after 1.73 years of unprotected sex and aged between 28 and 40 years (average age=32.18 years). The remaining six patients in this group (average age=34.8 years) had miscarried an average of 1.33 times before consulting and three of these (average age=34 years) had one healthy child. After reporting the spontaneous pregnancy, only 1 of these 34 patients has returned to our centre due to a miscarriage at 11 weeks. No pathology report was available on the aborted conceptus. No further follow-up was pursued in the other 33 patients. The 44 remaining patients got pregnant spontaneously after having undergone some type of the ART treatment. The average time of sterility or infertility of these couples was 3 years. The patients' ages ranged from 25 to 41 years (average age=34.4 years). Thirty-three patients had never been pregnant before and were between 25 and 40 years old (average=36.08 years). Seven patients had miscarried an average of 1.57 times. Four patients had 1 healthy child. These 44 patients had undergone some form of failed ART treatment and then who became pregnant spontaneously, had gone through the following treatments: 1 patient underwent a clomiphene citrate cycle, 8 had gone through an average of 2.75 artificial insemination cycles (AI) and 11 had after an average of 2.72 AI cycles completed 1 *in vitro* fertilization (IVF) cycle before achieving the spontaneous pregnancy. Three patients underwent an average of 2 AI before undergoing 1 IVF cycle and then an average of 1.3 intracytoplasmic sperm injection (ICSI) cycles. One of these patients had failed fertilization in both the IVF and ICSI cycles. One patient underwent 1 AI then 1 ICSI cycle, 1 patient did a half IVF/half ICSI cycle, 6 underwent an average of 1.83 IVF cycles and 11 patients followed an average of 1.54 ICSI cycles. Till date, the outcome of the 44 spontaneous pregnancies is as follows: 8 have been lost in follow-up and 12 babies have not yet been born. Of the 24 remaining pregnancies 18 healthy babies have been born (75%). One pregnancy was terminated at 20 weeks after amniocentesis due to a mosaic trisomy 16 (4.16%). That patient was 32 years old at the time. Five abortions (20.83%) (average age of patient=35.4 years) have been reported. All 5 patients who aborted had first consulted with primary sterility.
Conclusions: Although the sample is small, the abortion rate of spontaneous pregnancies in our study is higher than the expected abortion rate in primiparous women at 35.4 years (20.83% vs. 10.7%). One mosaic trisomy 16 in 24 pregnancies is much higher than the expected rate of trisomy for a 32–year-old woman (1/24 in our series vs. the expected 1/492 in the general population). Clearly, more work needs to be performed to evaluate to what extent subfertility determines pregnancy outcome.

P-310 Birth weight of singletons after assisted reproduction is higher after single than after double embryo transfer

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Introduction: Single embryo transfer has proven efficient in reducing multiple pregnancy rates after assisted reproduction. This study aims to compare outcome of singleton pregnancies after single and double embryo transfer.
Materials and methods: The database from the Gent University Hospital Infertility Centre was analysed from 2000 to 2004. Gestational length and birth weight were compared between 404 single and 431 double embryo transfer patients who entered the IVF/ICSI program and delivered from a singleton child of >500 g after fresh embryo transfer in a first, second or third cycle. Adjustments were made for maternal age, primiparity, cycle rank number, indication for assisted reproduction, assisted reproductive method, embryo characteristics and gender of the child.
Results: Singletons born after double embryo transfer have a significantly lower birth weight than singletons after single embryo transfer (3204.3±617.5 g vs. 3324.6±509.7 g, p<0.01). Also preterm birth (<37 weeks) (OR 1.77, 95% CI=1.06–2.94) and low birth weight (<2500 g) (OR 3.38, 95% CI=1.86–6.12) are significantly more common in double embryo transfer—singletons.
Conclusions: Outcome of singletons after single embryo transfer is advantageous compared to double embryo transfer. This sheds new light on the reasons why singletons after assisted reproduction do worse than spontaneously conceived singletons in outcome studies of *in vitro* fertilization programs where double or multiple embryo transfer is the norm.

P-311 Infertile donor outcome following egg sharing

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Introduction: One source of donor oocytes for recipients in need of oocytes is from infertile women willing to share their oocyte harvest. The donation is usually associated with some type of relief of the financial burden for the donor's *in vitro* fertilization (IVF) cycle. One question that arises is whether the sharing of oocytes may be at the expense of a reduction in pregnancy rate by the donors. The present study evaluated the outcome of women undergoing controlled ovarian hyperstimulation and oocyte retrieval with sharing half of the oocytes with a recipient vs. women keeping all the oocytes themselves.
Materials and methods: Over an 8 year period, infertile women donating half of their oocytes collected to recipients in exchange for free IVF services were matched to the next woman going through IVF matching certain criteria who did not share oocytes. The match had to be in the same year, the age of patient within 6 months and the number of eggs retrieved within 1 (but could be 2 if otherwise matching would not be done in same year), and same infertility diagnosis. Pregnancy outcome following the first fresh embryo transfer was then compared. Sometimes because of the risk for ovarian hyperstimulation, all embryos were frozen. Therefore, the pregnancy rates were also calculated according to the pregnancy rate per first transfer which would include the first frozen embryo transfer if the fresh one was deferred. All embryos were transferred on day 3.
Results: There were 325 women having oocyte retrievals donating half their oocytes matched to 325 women having retrievals but not donating. There were 202 fresh transfers in donors and 254 in non-donors. Eight women had single embryo transfers in each group related to poor fertilization or patient choice. The clinical and delivered pregnancy rates per cycle for donors and implantation rates were 54.1%, 50.0% and 29.5% vs. 48.4%, 44.9% and 25.6% for non-donors. The clinical, and delivered pregnancy rates and implantation rates for first transfers (fresh or frozen) in donors (n=303) were 50.2%, 45.5% and 27.8% vs. 46.8%, 43.2% and 25.0% in non-donors (n=310 transfers). There were no significant differences in any of the comparisons. The average number of fresh embryos transferred for donors vs. non-donors was 2.9 and 3.0 and the mean ages were 31.0 and 31.1. The total number of oocytes retrieved was 3500 for donors vs. 3406 for non-donors.

Conclusions: Sharing of oocytes by an infertile donor with a recipient does not decrease the chance of pregnancy following fresh embryo transfer. Though the process of oocyte donation may lead to a greater risk for potential deferment of fresh transfer with cryopreservation, the greater number of first transfers for donors being frozen than non-donors did not negatively affect the pregnancy outcome following first embryo transfers. The only down side might be less frozen embryos available for future transfer.

P-312 Impact of changes in law on donor anonymity on gamete donation and recruitment strategies for the future

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Introduction: Gamete donation is a successful and established form of assisted conception treatment. There continues to be a debate regarding the rights of the donor conceived child to know their biological origins, with openness and altruistic donation being the ultimate objective in most ethical arguments. With the change in the law withdrawing the right of anonymity to potential gamete donors, there is uncertainty regarding the provision of this service, with increasing reliance on 'fertility tourism'. Previous studies have assessed the impact of the change in this law only on established or new donors. However, there is a big drop out between those who enquire about donation to those who actually proceed. The objective of this study was to assess public awareness of gamete donation and the impact of the change in law regarding loss of donor anonymity. It also looks at strategies to improve recruitment of gamete donors in the future.
Materials and methods: A total of 500 questionnaires were distributed to staff working in a large teaching hospital through the Pay Roll department over a 3 month period from September to December 2004.
Results: A total of 166 responses (33%) were received of which 142 (86%) were females and 22 (14%) were males. Only two (1.2%) responses were from previous gamete donors. Ninety percentage of the respondents were aware of gamete donation and 34% were willing to consider donating gametes. However, only 27 respondents (16%) were willing to donate if donor identity was traceable by donor conceived children. There was no difference to these responses when analysed by gender or marital status. The awareness of friends or family requiring gamete donation or fertility treatment did not appear to influence their decision. Of those willing to donate, 44% were below the age of 35 years and 30% were between the ages of 36 and 45. Of the 48 respondents below the age of 35 years who were aware of gamete donation, 44% were willing to donate, but only 21% would donate if identity was traceable. Forty-six percentage of the respondents carried organ donor cards. In this subgroup there was a significantly greater awareness of the need for gamete donation ($p=0.014$), though willingness to donate were identity traceable was not greater. There was no relationship between the awareness of gamete donation and the willingness to donate irrespective of whether identity was traceable.
Conclusion: Provision of gamete donation treatment depends on the availability of suitable gamete donors. This survey highlights the need to improve public awareness of the continued need for gamete donors as only 34% were willing to consider gamete donation. Loss of donor anonymity reduces this by half. There has to be continued targeted information to known altruistic groups similar to those carrying donor cards by national/local agencies with clarification of legal and financial responsibilities, to prevent a serious crisis in the continued provision of this service.

P-313 ART outcome in HIV-infected patients

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Aim: To assess assisted reproductive techniques (ARTs) outcome in couples affected by HIV, who were accepted in our ART program.
Materials and methods: Briefly, when the man is infected and artificial insemination with donor sperm has been refused by the couple, washed sperm is considered for intrauterine insemination (IUI) or *in vitro* fertilization (IVF) with intracytoplasmic injection of one spermatozoon into the oocyte (ICSI). The proof of absence of HIV DNA and RNA in the sperm pellet is mandatory. When the woman is infected, and auto insemination is ineffective or not indicated, IUI, IVF, ICSI is offered to reduce the transmission risks and/or to solve their fertility problems.
Results: Between I/2000 and VI/2005, 85 couples out of 153 were accepted in the ART program after multidisciplinary assessment. In 33 couples only the woman was infected: 34 IUI cycles were performed in 8 couples resulting in 7 pregnancies, clinical pregnancy rate (cpr)/insemination: 24% (five singletons, one twin pregnancy, one miscarriage). A total of 26 IVF cycles were performed in 16 couples (mean age of the woman: 35.7±3.3 years), resulting in 7 clinical pregnancies, cpr/transfer: 37.5% (2 miscarriages, 4 singletons and 1 twin). A total of 30 ICSI cycles were performed in 14 couples (mean age of the woman 35.6±3.5 years) resulting in 3 clinical pregnancies, cpr/transfer 18.8% (1 ectopic pregnancy and 2 singletons). Treatment was cancelled for 24 IVF/ICSI (43%) and 6 IUI cycles (18%). No complications (ovarian hyperstimula syndrome bleeding, infection) but two retrieval failures occurred during IVF and ICSI procedures. In 45 couples the man was infected: 85 IUI cycles were initiated for 25 couples resulting in 10 pregnancies, cpr/insemination 14.7% (1 miscarriage, 1 twin and 8 singletons). A total of 62 ICSI cycles were performed in 20 couples leading to 11 pregnancies, cpr/transfer 23.4% (6 singletons, 3 twins and 2 miscarriages). Treatment was cancelled for 15 ICSI (25%) and 17 IUI cycles (20%). In 14 couples the two partners were infected: None of the four performed IUI cycles was successful. A total of 35 ICSI cycles were performed in 14 couples resulting only in three pregnancies, cpr/transfer 12.5% (3 miscarriages). Treatment was cancelled for 11 ICSI (31%) and 1 IUI cycles (20%).

The pregnancy rates were the worst for couples with both infected partners (difference not statistically significant). The cancellation rates were high among the three groups, ranging between 18% and 43%. These were often due to poor ovarian response. All the children who were born had a negative HIV test.
Conclusion: In this series of patients, an acceptable pregnancy rate was obtained. More importantly, none of the born children was HIV infected at birth and no women were infected using washed sperm. However, when both partners were infected, a very low pregnancy rate was obtained, ending in miscarriages. The cancellation rates are higher among HIV infected couples than in uninfected patients.

P-314 Endometrial receptivity after oocyte donations in recipients with a history of cancer treatment

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Introduction: Information is very scarce regarding the outcome of oocyte donation (OD) in patients with a history of cancer treatment by chemo and/or radiotherapy. We conducted a matched controlled analysis on the outcome of OD in this particular subgroup of oocyte recipients.
Materials and methods: Between January 2000 and November 2005, 43 OD cycles with fresh embryo transfer were performed in 30 patients with a history of chemo and/or radiotherapy (study group). Matching was performed to the chronological closest patient without a history of cancer therapy by number of days of hormonal substitution before embryo replacement (±5 days), number of replaced embryos, day of embryo transfer (day 2 or day 3) and origin of sperm (control group).
Results: The primary diseases of the patients were Hodgkin's lymphoma (n=13), non-Hodgkin's lymphoma (n=2), leukaemia (n=7), ovarian cancer (n=4), Ewing's sarcoma (n=2), breast cancer (n=1) and histiocytosis X (n=1). Twenty-nine patients had undergone chemotherapy, 18 both chemo and radiotherapy and 1 radiotherapy only.

The mean age of the recipients was 33.5 years (95% CI=31.6–35.3) and 39.3 (95% CI=37.2–41.4) in the study and control groups, respectively. All but four patients (five cycles) had a premature ovarian failure. The average number of inseminated oocytes was 7.9 (95% CI=6.9–9.0) and 8.0 (95% CI=6.7–9.3) in study and control groups, respectively. The mean number of transferred embryos per cycle was 2.0 (95% CI=1.9–2.1) in both groups. Twenty-three pregnancies were obtained in both groups (53.5%) who gave an ongoing

pregnancy in 18 cycles in the study group (41.9%) and 16 in the control group (37.2%) (NS). Implantation rate was 31.8% and 24.7% in study and control groups, respectively (NS).

Conclusions: The results of this study suggest that patients having a history of cancer treatment have a similar pregnancy rate after oocyte donation than the other ones. As matching was performed according to the main confounding factors in oocyte donation, we can conclude that chemo and/or radiotherapy do not have an impact on endometrial receptivity in these patients.

P-315 An antisense approach can improve pregnancy rate

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Introduction: Pre-implantation human embryos are characterized by various degrees of cytoplasmic fragmentation. The degree of fragmentation during early cleavage is universally used as an indicator of embryo quality during human *in vitro* fertilization treatment. Extensive fragmentation has been associated with reduced blastocyst formation, implantation and pregnancy rate. Recent observations suggest that cellular fragmentation in a subset of human pre-implantation embryos could be regulated by certain components of a genetic programme of cell death. The potential for modulating gene expression by the use of antisense oligonucleotides (AsODNs) has become increasingly interesting in recent years. AsODNs are complementary nucleic acid fragments that hybridize to target sequences within RNA to form a DNA–RNA duplex, resulting in the block of translation of mRNA into the protein.

Materials and methods: In the present work natural AsODNs, complementary to the mRNA of the one of apoptosis-related genes, was examined as therapeutic agents for embryo gene therapy. Human oocytes and then pre-implantation embryos from 86/85 patient cycles were incubated with/without specific AsODNs for 3 days. Embryos were classified on days 2–3 according to the percentage of fragmentation and degree of developmental abnormalities. Good morphology 3–5 days embryos were transferred in uterus.

Results: Total number of embryos without fragmentation on days 2 and 3 in the study group was found to be significantly higher ($p<0.05$), compared with the control group. Embryo fragmentation on day 2 in the study group was found to be significantly lower, ($p\leq0.009$), compared with the control group. Developmental abnormalities on day 2 were significantly lower ($p<0.001$), in the study group. The pregnancy rate in the treatment group was 41.38% (36/87) compared to 31.40% (27/85) in the control group.

Conclusion: The outcome of this study shows that antisense approach can effectively improve embryo condition during IVF treatment. The higher pregnancy rate in the study group demonstrates that embryos after therapeutic influence have an improved developmental potential.

P-316 Which outcome for Y microdeleted patients: a follow-up of 63 Y micro-deleted infertile men

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Introduction: Microdeletion of the Y chromosome (Ydel) is a genetic cause of male infertility concerning up to 15–20% of men with major spermatogenetic impairment. When spermatozoa are available, intracytoplasmic sperm injection (ICSI) may help these men to become father with their own gametes. However, ICSI outcome has been reported only in a small number of cases.

We report the follow-up of 63 men with Ydel who requested assisted reproductive technique (ART) in four French centres from 1997 to 2005.

Materials and methods: The men were 35.1±0.7 years old (27–58) and had a primary infertility except in two cases. Azoospermia was found in 38 men (60.3%). Oligospermia was severe ($<10^6$/ml) in 23 men and moderate ($1–5\times10^6$/ml) in two cases. Most microdeletions were found in the AZFc region of the Y chromosome, either isolated (45/63, 71.4%), combined with AZFb deletion (8/63, 12.7%), with AZFa deletion (1/63, 1.6%) or with AZFa+b (1/63, 1.6%). Deletion in the AZFb region alone was found in 6 men (9.5%) and associated with AZFa deletion in 1 man (1.6%). Deletion of the only AZFa region was found in 1 man (1.6%). In the 25 men with spermatozoa in the ejaculate, the Y deletion was only in the AZFc region.

An abnormal karyotype was found in 8 of 59 men (13.5%). The 8 men were azoospermic, 6 had a combined deletion of the AZF b+c region, 1 a large deletion of AZFa+b+c region and 1 had a deletion in AZFa region only. Testicular biopsies were made in 27 azoospermic men and spermatozoa were found in only 5 cases.

Results: To date, 33 ICSI attempts have been performed with either testicular (n=4) or ejaculated (n=29) sperm in 20 couples. In all cases, the men had on isolated AZFc deletion. The fertilization rate was lower when using testicular compared to ejaculated sperm (37.5% vs. 57.8%, respectively). Ten clinical pregnancies were obtained, all with ejaculated sperm (30.3% of oocytes pick up). There were three miscarriages and four births of five children (four boys), three pregnancies are ongoing. Furthermore two pregnancies were obtained after frozen embryo transfer, leading to a miscarriage and to the birth of a boy.

A total of 31 couples asked for sperm donation either as a first option (n=5), after negative testis biopsy (n=22) of after ICSI failure (n=4).

One couple is under investigation and 15 are still in the ART program of the centres.

Conclusion: Only a minority of men with Y del may use their own spermatozoa to try to become father. In our experience the probability to extract sperm cells from the testis of these men is very low but, when spermatozoa available, ICSI can give some real chances to have a child to such couples. In addition, azoospermic men with Y deletion, especially when the microdeletion involves more than the AZFc region, should be offered alternative ways to become father.

P-317 Cancelled transfers for OHSS and subsequent frozen embryos transfers results. French register Fivnat experience

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Introduction: In some cycles where good quality embryos were obtained, the risk of ovarian hyperstimulation syndrome (OHSS) is high enough to consider a transfer cancellation and a subsequent transfer of frozen embryos. One of the questions is to evaluate the pregnancy chance in order to justify the physician's decision. However, this situation is not so frequent (<1%), and analysis needs a large multicenter database. The objectives of the present study were to determine the frequency of this situation, to describe its risk factors (patients and cycles characteristics), and to analyse the pregnancy rates of the frozen embryo transfers (FET) realized subsequently.

Materials and methods: This study was based upon all the ART cycles included in the Fivnat register between 1993 and 2003 (n=336,479), for which an embryo transfer and/or an embryo freezing had been realized, meaning the presence of good quality embryos (n=275,493, 81.9%). Among them, 1838 cycles (0.67%) had an embryo freezing without transfer. They were classified into four groups. Severe OHSS: 20 oocytes and/or estradiol >3000 pg/ml, and/or clinical signs: n=712 (0.26%). Moderate OHSS: no clinical signs, 15–20 oocytes and estradiol=3000 pg/ml, or estradiol between 2501 and 3000 pg/ml and oocyte number=20: n=232 (0.08%). Satisfactory stimulation: no OHSS clinical signs, 11–15 oocytes, estradiol=2500 pg/ml: n=210 (0.08%). Other transfer cancellations: n=679 (0.25%). Then the two first groups were regrouped because of their similarities and the same was performed for the two last groups. Patients and cycles characteristics were compared. Then, the results of FET issued from cancelled transfers with OHSS (n=668) were compared with FET from patients with cancellation for other reason (n=429) or without cancellation (n=27,152). Finally, a pregnancy potential was calculated, taking into account the number of frozen embryos per

recovery, the number of thawed embryos per FET and the pregnancy rates for FET and for fresh transfers (in uncancelled cycles).
Results: The cancellation rate for hyperstimulation decreased with women's age (from 0.57% for those aged <25 years to 0.16% at 40 years, p<0.001), which was not true for other cancellations. The highest rates were observed in women with PCOs (0.96%, p<0.01). The patients with hyperstimulation cancellation were given less units of gonadotropins (2058±884 IU vs. 2548±1169, p<0.001), and got more oocytes and embryos (18.4±9.0 and 9.6±6.2 vs. 9.6±5.7 and 5.0±3.0, respectively, p<0.001 for both). They had, on average, 7.0±4.0 frozen embryos, compared to 3.7±2.6 for other cancellations and 1.1±2.3 when no cancellation was performed (p<0.001). The FET pregnancy rate was 21.4% when the fresh transfer had been cancelled for hyperstimulation, 15.5% for cancellations for other reason and 15.0% for FET when no cancellation had been performed (p<0.001). The number of thawed embryos per FET cycle was, respectively, 3.2±1.8, 2.6±1.3 and 2.9±3.8 (p<0.001). Thus, the pregnancy potential per thawed embryo was 6.7%, 6.1% and 5.1%. When applying this potential to the recovery cycle numbers of thawed embryos, this corresponded to a theoretical pregnancy rate of 47.0%, 22.4% and 5.5%, respectively. For the last group, where fresh transfer had resulted in a pregnancy rate of 25.9%, the overall PR was 29.9% per recovery.
Conclusion: The transfer cancellations to prevent hyperstimulation risk are relatively rare. Subsequent FETs are associated with a relatively satisfactory pregnancy rate, which gives arguments to propose this policy to these women instead of taking a risk of OHSS risk, since this condition is life threatening.

P-318 Does the proportion of mature oocytes in a cohort of retrieved oocytes affects the fertilization and pregnancy rates in ICSI cycles?

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Introduction: A proportion of retrieved oocytes in an IVF/ICSI cycle remains meiotically immature at the germinal vesicle (GV) or metaphase I (MI) stage. The proportion of mature oocytes to meiotically immature oocytes has been shown to be between 15 and 20%. Although the exact mechanism of this condition is unknown, some explanations include that small antral follicles are aspirated during oocyte retrieval or follicles may be at different stages of development when ovarian hyperstimulation with gonadotropins is started, resulting in the collection of oocytes of varying degrees of maturation. The proportion of mature oocytes may also be influenced by patient characteristics including reduced oocyte quality. We aimed to determine whether the proportion of immature oocytes reflects the oocyte quality by correlating with clinical outcomes of ICSI treatment.
Materials and methods: In this retrospective analysis, 513 ICSI cycles between January 2001 and December 2003 were included. Cycles resulted with at least one embryo transfer were included in this study. All patients had long GnRH agonist protocol and FSH for controlled ovarian hyperstimulation. Cycles were triggered with hCG when two dominant follicles were ≥18 mm. Age, peak serum estradiol, number of MII oocytes and proportion of mature oocytes were used as independent variables to analyze their effect on fertilization rate, clinical and ongoing pregnancy rate by logistic regression analysis.
Results: Mean number of retrieved oocytes was 13.2±5.6. Mean fertilization rate and mean MII oocyte rate (MII oocytes/all retrieved oocytes) was 71.5% and 79.5%, respectively. Mean number of 2PN oocytes correlated negatively with age (r=−0.24, p<0.001), and positively with peak estradiol level (r=0.45, p<0.0001), mean number of MII oocytes (r=0.83, p<0.0001). Mean grade I embryo rate correlated positively with mean number of 2PN oocytes (r=0.22, p<0.001), peak estradiol level (r=0.14, p<0.01), mean number of MII oocytes (r=0.15, p<0.001). On logistic regression analysis, neither MII oocyte rate (mean−SD) nor age (≥35 years) and peak estradiol value (mean−SD) failed to predict lower fertilization rates when cut-off values for fertilization rate were below mean, mean−SD, or mean−2SD. Having four or less oocytes after retrieval also did not predict lower fertilization rates. However, age [exp (B)=0.54, CI=0.36−0.78, p<0.001] and having four or less oocytes after retrieval [exp (B)=0.38, CI=0.21−0.69, p<0.001] predicted lower clinical pregnancy rates. Age [exp (B)=0.45, CI=0.30−0.67, p<0.001] and having four or less oocytes after retrieval [exp (B)=0.31, CI=0.15−0.63, p<0.001] also predicted lower live birth rates.
Conclusion: Quantity but not the proportion of mature oocytes in the cohort of ICSI cycles is an independent predictor of clinical pregnancy and live birth rates.

P-319 Cumulus cell proliferation capacity in the prediction of outcome of ICSI

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Introduction: Since cumulus cell steroidogenesis and the quality of oocyte are interacted, we aimed to evaluate cumulus cell proliferation capacity in culture dish to predict the outcome of ICSI.
Materials and methods: Cumulus cell masses were collected with hyase procedure from a total of 1752 oocytes, which formed embryos in 200 ICSI cycles. The indications for ICSI were moderate male factor infertility. Women were otherwise healthy. Mean age of women was 36.4 (24–37). Selection criteria of moderate male factor cases were to have problem in at least one of three basic parameters of spermiogram but to have normal sperm morphology not less than 4% by Kruger's criteria of morphology, sperm concentration not less than 5 million/ml and sperm progressive motility not less than 25%. Cumulus cell (CC) suspensions were cultured in HTF medium (10% HSA) for 48 h and were examined for proliferation capacity and cell morphology. Before culture, the proliferation capacity and morphology of CC were recorded in groups as followed. In Group I, highly proliferative and polygonal granular cells were included. Group II consisted of less proliferative and fibroblast-like cells. In Group III it consisted of non-proliferative cumulus cells whereas Group IV consisted of proliferative but darkened cells that accumulated. Group V included highly proliferative and few darkened cell areas.
Results: Groups I–V consisted of 86, 33, 25, 30 and 26 cases, respectively. Pregnancy was observed in 33 cases (38.3%) in Group I, whereas 2 (6.6%) in Group II, 0 (0%) in Group III, 5 (16%) in Group IV and 9 (34.6%) in Group V. Similar trends were observed for embryo grading. A 50.3% of oocytes (548/1088) in Group I created grade I embryos whereas only 14.3% (32/224) in Group II, 28.5% (8/28) in Group III, 3.85% (4/104) in Group IV and 40.2% (124/308) in Group V. When evaluated for grade I or II embryo formation by groups of cumulus cells, 92.9% of oocytes (1012/1088) in Group I created grade I or II embryos, whereas 73.2% (164/224) in Group II, 67.0% (16/28) in Group III, 57.3% (60/104) in Group IV and 92.1% (284/308) in Group V.
Conclusion: These results suggest that proliferation capacity of cumulus cells might predict the outcome of ICSI.

P-320 IVF technologies may exacerbate differences in newborn sex ratios

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Introduction: With improving IVF techniques, culture and grading systems our ability to provide patients with an optimal IVF cycle has improved greatly. The chances that patients will now achieve a successful cycle by transferring two excellent quality embryos are greater now than they have ever been. This study looks at the outcome of these 'ideal' cycles and compares the sex ratios to general IVF populations.
Materials and methods: A retrospective analysis involving three IVF patient populations under the age of 39, between 1 January 2000 and 1 January 2005. Group 1: All IVF cases. Group 2: Patients with an 'ideal' IVF cycle. An ideal cycle was determined as having a day 3 embryo transfer, at least six oocytes retrieved, two 8-cell embryos transferred and freezing of supernumerary embryos. Group 3: 8-cell embryos from patients who underwent pre-implantation genetic diagnosis (PGD) (1 January 2002–1 January 2004). The sex ratios of live births were determined for Groups 1 and 2, and day 3 embryo sexing was used for Group 3. These data were used to provide a foundation on gender distribution of embryos and relate it to developmental stage. The number of male and female offspring were registered for each cycle. Comparative statistical analysis using the Chi-squared test determined any significant trends, p<0.05 was considered to be significant.
Results: In Group 1 there were 2727 patient cycles, 1162 (43%) had a positive FCA, in all 624 (52%) male babies were born and 580 (48%) females. There

was not a significant difference in between sexes (P=NS). In Group 2, there were 284 IVF patient cycles, 155 (55%) had a positive FCA. A total of 164 children were born, 101 (62%) male and 63 (38%) female, there were significantly more males (p<0.006). There were significantly more boys born (68%) than girls (32%) from multiple gestations: two sets of triplets (three males and two males and one female), 15 twin boys, 4 twin girls and 18 mixed twins (p<0.005). In Group 3, the PGD group, 139 (50%) embryos were sexed as being male and 140 (50%) female (P=NS).

Conclusions: Epidemiology data show the national sex ratio at birth in the United States as 1.05 male(s)/female (source: http://www.cia.gov). Our overall IVF data (Group 1: all IVF cycles) gives a sex ratio of 1.08 male(s)/female, not significantly different. However, there is a significantly higher number of males born after an 'ideal' IVF cycle where the ratio was 1.6 male(s)/female. This is unexpected because when analyzing PGD embryos there is no significant difference in the number of male and female embryos at the 8-cell stage on day 3; hence, an equal number of males and females available to transfer. It has been suggested that male embryos developing faster can skew results in this manner; however, further study is required to determine whether it is the selection process or the embryo's ability to survive within the uterine environment. The results of this study demonstrate the importance in understanding of how new technologies can impact treatment outcomes, including sex ratios.

P-321 Impact of laser-assisted hatching on pregnancy rate in fresh and frozen-thawed cycles

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Introduction: Routine assisted hatching (AH) is not recommended but AH should improve implantation in women with advanced age, repeated implantation failures or freezing-induced zona hardening. The aim of this work is to determine the influence of laser AH on pregnancy rates (PR) both in fresh cycles (women from 36 years) and in frozen-thawed cycles.

Materials and methods: Prospective randomization between AH and control groups was performed on the basis of even or odd month of birth. In Experiment 1 (fresh cycles), all patients from 36 years undergoing IVF treatments between October 2004 and July 2005 were included (n=134) and 97 were allocated to studied groups. Four classes were defined according to the age (36–37 and ≥38) and the rank of trial (1–2 and ≥3). In Experiment 2 (frozen-thawed cycles), only patients at their first thawing cycle during the ongoing IVF treatment (n=202) were included (between October 2004 and October 2005) and 189 were allocated to AH or control groups. Two classes were defined depending on the age (<30, ≥30) and the total number of implantation failures in all previous IVF attempts was recorded. Assisted hatching was realized by half thinning of the zona pellucida on a quarter segment by laser shots 1–2 h before transfer, which was performed on day 2 or day 3 of culture. Pregnancy rate was defined as a positive β-hCG 2 weeks after transfer.

Results: In Experiments 1 and 2, there was no significant difference between AH and control groups in patient age, type of treatment, number or quality of transferred embryos.

In fresh cycles (Experiment 1), for first and second trials, PR under 38 was, respectively, 20% (2/10) and 46% (6/13) in AH and control groups, while from 38, this rate reached the same value in both groups (12%, respectively, 3/25 and 3/26 in AH and control groups). Concerning three and more trials, under 38, PR in control group was 20% (1/5) and no data were available in AH group, whereas from 38, PR also reached the same value in AH and control groups (11%, 1/9).

In frozen-thawed cycles (Experiment 2), under 30, AH group showed a PR of 11% (3/28) and control group a rate of 33% (6/18). From 30, PR reached 22% (15/68) in AH group and 24% (18/75) in control group. No effect on the number of previous implantation failures (0–4) was observed in studied frozen-thawed groups.

No significant difference in PR was observed between AH and control groups (Chi-square test, p>0.05) neither in fresh cycles nor in frozen-thawed cycles and the same observation was made for the implantation rate (data not shown).

Conclusions: These preliminary results must be confirmed by a more extended study but some tendencies, although no significant, can be noticed. In fresh cycles under 38, AH seems to have a deleterious effect in the first two trials. From 38, no influence of AH is observed whatever the rank of trial. In frozen-thawed cycles, AH seems to be unfavorable under 30 and ineffective from 30. In contrast to fresh cycles, the number of previous implantation failures has no effect.

As a consequence, it does not seem to have an advantage of applying assisted hatching for fresh or frozen-thawed cycles, even in a selected patient population.

P-322 Live birth rate in IVF cycles is significantly higher after stimulation with highly purified menotrophin compared with recombinant FSH

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Introduction: Live birth is the outcome of interest to couples seeking infertility treatment. There is increased regulatory demand for documenting efficacy in terms of live birth rate for products in fertility treatment. Large randomized controlled trials are needed to precisely estimate the difference in live birth rate between gonadotropin preparations. Integrating individual patient data obtained from large randomized comparative trials conducted with identical preparations in similar populations, and following a similar protocol for controlled ovarian hyperstimulation should provide a precise estimate of the treatment difference in live birth rate. The objective of this investigation was to compare live birth rate between a highly purified menotrophin (HP-hMG) preparation and a recombinant FSH (rFSH) preparation in IVF cycles in large randomized controlled trials.

Materials and methods: Data from two large randomized controlled trials comparing identical HP-hMG and rFSH preparations were used for this investigation: MERIT (Menotrophin vs. Recombinant FSH *in vitro* Fertilization Trial) and EISG (European and Israeli Study Group) trials. MERIT (n=731) and EISG (n=727) were prospective, randomized, multicentre, multinational trials in women undergoing a long GnRH agonist protocol and stimulated with either highly purified menotrophin (MENOPUR, Ferring Pharmaceuticals) or recombinant FSH (follitropin alfa, GONAL-F, Serono). All patients in MERIT (n=731) and the patients in the IVF stratum in EISG (n=255) (in EISG, patients were stratified at randomization according to IVF or ICSI) were included in this analysis: HP-hMG (n=491) and rFSH (n=495). Eligibility criteria were similar in both studies. Age, reason for infertility, duration of infertility, BMI, number of previous cycles and main baseline characteristics were comparable between studies and treatment groups. Tubal and unexplained infertility were the primary reasons for infertility in both studies. The treatment difference between gonadotropin preparations was estimated using a logistic regression analysis adjusting for age (<35 or ≥35 years) and study. The difference between treatments was summarized as an odds ratio with 95% confidence interval. Test of treatment difference and test of treatment-by-study interaction was based on the likelihood ratio test.

Results: The live birth rate was significantly (p<0.05) higher with HP-hMG (26%) compared with rFSH (21%). The odds of a live birth was 36% higher with HP-hMG than with rFSH (OR=1.36 [95% CI=1.01–1.83)]. Both the ongoing pregnancy rate per cycle initiated and for cycles with embryo transfer was significantly (p<0.05) higher with HP-hMG than rFSH. The ongoing pregnancy rate per cycle initiated was 27% with HP-hMG and 21% with rFSH (OR=1.38 [95% CI=1.03–1.86]). The ongoing pregnancy rate for patients with transfer was 33% with HP-hMG and 25% with rFSH (OR=1.42 [95% CI=1.05−1.92]). A significantly (p<0.05) higher implantation rate was also noted with HP-hMG (24%) compared to rFSH (19%) (OR=1.38 [95% CI=1.04−1.83]). Regarding safety outcomes, there were no statistically significant differences between HP-HMG and rFSH in miscarriages (OR=0.73 [95% CI=0.45−1.20]), multiple pregnancies (OR=0.77 [95% CI=0.43−1.37]), ectopic pregnancies (OR=0.60 [95% CI=0.12−2.48]) or moderate/severe OHSS (OR=0.99 [95% CI=0.38−2.56]). There was no statistically significant heterogeneity between studies for any of the parameters tested.

Conclusions: The cumulative evidence indicates that controlled ovarian hyperstimulation with HP-hMG results in statistically significantly higher live birth rate than rFSH in IVF cycles. No differences in clinically relevant safety parameters were noted between HP-hMG and rFSH. Based on adequate and

well-controlled trials, the benefit/risk ratio favours HP-hMG over rFSH in IVF cycles.

P-323 IVF or ICSI in low responder patients older than 37 years

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Introduction: Since low responders have few retrieved mature oocytes, choosing the right technique of fertilization is of great importance. In the daily clinical practice, patients older than 37 years old with less than six oocytes retrieved are frequently seen. Doubts arise when semen parameters are normal, and both techniques are suitable for obtaining fertilized oocytes.
Materials and methods: During two years period (2003–2004), 124 low responder patients >37 years of age and without male factor infertility, were included in this study. They were divided into two groups according to the procedure used for fertilization: 78 couples were submitted to conventional IVF and 46 couples to ICSI. The mean female age in the IVF group was 40.5 while in the ICSI group was 40.8 years old. All males presented normal sperm parameters according to IVI-Madrid standard procedures. When semen presents more than 15×10^6 spz/ml and more than 30% of spz type B motility, we consider that is suitable to do conventional IVF.

After the ultrasound-guided oocyte retrieval, the oocyte–cumulus complexes (OCC) were placed into 50 μl droplets of IVF (Medicult) covered by paraffin oil and incubated in a 6% CO_2 incubator at 37°C.

For the ICSI procedure, the removal of cumulus was carried out by exposing the OCC to hyaluronidase (80 UI/ml) for no more than 1 min. In order to remove completely the corona radiata, the oocytes were aspirated in and out using Pasteur pipettes of different diameters until no cells were adhered to the zona pellucida. Oocytes were then rinsed in 50 μl droplets of IVF (Medicult), and only metaphase II oocytes were injected.

Pronuclei evaluation was carried out 17–20 h after insemination. Embryonic development was assessed 41–44 and 65–68 h after insemination or injection. Embryo transfer was performed ~48 or 72 h after insemination or injection.
Results: Both groups were comparable in terms of age, basal FSH levels, number of retrieved oocytes and in cumulus expansion of the oocyte–cumulus complexes. Data showed that ICSI provided similar fertilization rates (66.0% vs. 62.4%) than conventional IVF. The embryo quality on day 2 and day 3, were comparable as much in the number of blastomeres as in percentage of fragmentation. No significant differences were observed in pregnancy rate or implantation rate.

The only differences between both groups were observed in cancellation rate and complete fertilization failure. Cancellation rate was significantly higher when we did ICSI procedure (41.3%) compared to conventional IVF (19.2%). Also complete fertilization failure rate was significantly greater in ICSI (17.8% vs. 3.9%). We observed small differences in cancelled embryo transfers by poor embryo quality but differences were not significant.
Conclusions: We suggest based on our results, that in low responder patients with normal sperm parameters and without total fertilization failure in previous IVF cycles, conventional IVF would be the technique of choice since it reduces possible technical problems that may take place during ICSI, and it also reduces the risk of damaging poor quality oocytes that are more fragile or with a more resistant zona pellucida. This way, we would obtain similar pregnancy and implantation rates, reducing cancellation and total fertilization failure rates.

P-324 IVF-ICSI for the prevention of viral transmission in HIV-1 serodiscordant couples: Columbia University 7 year experience

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Introduction: Nearly one million Americans are infected with HIV-1. Most patients are young, sexually active and reproductively competent. Many desire to have children but are concerned about the known risks of sexually transmitting HIV to their uninfected partner through intercourse. The purpose of this project was to assess the clinical utility and safety of performing IVF-ICSI in couples where the male is HIV-1 seropositive and the female is HIV-1 seronegative in order to lessen disease transmission.
Materials and methods: Retrospective review of patients who enrolled in the IVF-ICSI program for HIV-1 serodiscordant couples at Columbia University between 1997 and 2005.
Results: A total of 277 initiated cycles were performed in 135 couples. The mean age of the females was 33.7±4.9 years (21–48), whereas in men the mean age was 37.2±5.5 (22–49). Of the HIV-1 positive men, 40% (53/135) had an unknown route of transmission, 35% (48/135) contracted HIV-1 via sexual contact, 20% (27/135) via blood transfusion, 5% (7/135) via IV drug use. Eighty-six percentage (117/135) were on antiretroviral therapy, and 56% (76/135) had an undetectable viral load. The average time since diagnosis of HIV-1 infection was 8.3±5.6 years (1–20). The total initiated cycles consisted of 84.1% (233/277) fresh non-donor cycles, 12% (33/277) frozen embryo transfers, 3.8% (10/277) donor egg cycles and 1 donor embryo cycle. Of non-donor retrievals, 9.8% (23/233) were cancelled owing to poor ovarian response. The mean number of oocytes retrieved per retrieval was 15.8±9.3 (2–62), yielding 12.9±7.1 (0−52) mature oocytes suitable for ICSI, of which 9±8 (0−32) normally fertilized. We transferred 2.8±1 (1−5) embryos per transfer. The overall clinical pregnancy rates per fresh and frozen ET were 47% (96/203) and 45% (15/33), respectively. The ongoing/delivered pregnancy rate per fresh and frozen ET were 41% (84/203) and 39% (13/33), respectively. Sixty-three percentage (85/135) of couples successfully conceived, with two successive pregnancies in 11 couples, for a cumulative ongoing/delivered pregnancy rate per couple of 71.9%. Of delivered pregnancies, there was a 43% (33/77) multiple birth rate, consisting of 38% (28/77) twins and 5% (4/77) triplets, yielding a total of 112 babies. There were no cases of HIV-1 transmission in female patients or delivered babies.
Conclusion: IVF-ICSI effectively allows HIV-1 serodiscordant couples the opportunity to conceive without the apparent risks of disease transmission. Serodiscordant couples can expect high rates of success but also are subject to complications of IVF, most notably multiple births.

POSTER SESSION

ART, clinical: ovarian stimulation

P-325 Initiation of GnRH antagonist (GnRH-ant) administration on day 1 and introduction of rec-FSH in a flexible mode: more flexibility/better results

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Introduction: In current practice, GnRH-ant are used to prevent premature LH surges during ovarian stimulation. Initiation of GnRH-ant is carried out either as a fixed scheme on day 6 of ovarian stimulation or as a flexible scheme when follicular growth is present in ultrasound. Moreover, administration of GnRH-ant on day 1 of ovarian stimulation has been also shown to be clinically effective. In all these IVF protocols using GnRH antagonists, rec-FSH is initiated on day 2 of the cycle. However, no information is available up to date describing the biological and clinical impact of delaying the rec-FSH administration after initiation of GnRH antagonist on day 1 of the cycle.
Objective: The present study was assessed to study the effect of altering the timing of rec-FSH initiation after the administration of GnRH-ant from day 1 of the cycle on the hormonal environment, follicular development and clinical results.
Materials and methods: Three hundred women undergoing IVF treatment were invited to participate in a prospective randomized study. Patients were randomized to three treatment groups. All three groups were treated with a GnRH-ant (Orgalutran; 0,25 mg/day, s.c.) commencing on day 1 of the cycle. Ovarian stimulation was commenced on day 2 (Group A), day 7 (Group B) or day 12 (Group C) of the cycle with a fixed daily dose of 200 IU rec-FSH (Puregon) per day. Ovulation triggering was performed using rec-hCG (Ovitrelle) as soon as at least three follicles of at least 17 mm were present on US scan and oocyte retrieval was scheduled 35 h later. Subsequently, IVF with or without ICSI was performed, and a maximum of two embryos were transferred 3 days thereafter. Serum FSH, LH, E_2 and P levels were measured at the