Monday, October 18, 2004
5:45 P.M.

O-88

The effectiveness of recombinant versus urinary human chorionic gonadotropin in IVF. E. Borges Jr., A. Iaconelli Jr., T. C. Bonetti, L. G. Maldonado, M. Bibancos, W. C. Busato. Fertility − Assisted Fertilization Center, Sao Paulo, Brazil.

OBJECTIVE: IVF cycles include multiple injections of follicle stimulating hormones to increase the development of oocytes inside the ovary and one injection of hCG, which mimic LH surge, to induce final maturation of oocytes. If the action of hCG fail, immature oocytes are retrieved, reducing the possibilities to produce viable embryos. The objective of this study was to assess whether the use of Ovidrel® (rhCG), as the triggering agent sustained expected favorable embryologic parameters and pregnancy rates when compared with the standard urinary hCG treatment.

DESIGN: Prospective, randomized, comparative, two arms.

MATERIALS AND METHODS: 151 IVF cycles from 127 patients, ages between 28−41 years old, were evaluated. Patients were treated using a standard long luteal downregulation protocol using GnRH agonists. After achieving downregulation (E2 <50 pg/ml) patients started controlled ovarian stimulation protocol using Gonal-f® (rFSH) 225–300 IU s.c. daily for 5 days and then adjusted up or down according to ovarian response. E2 levels were evaluated and ultrasound examinations to determine status of follicle development were performed. When the leading follicle attained mean diameter of 18 mm, and at least 2 others attained 16 mm, patients were randomized using in a 1:1 scheme to receive either 250 mcg of Ovidrel® SC or 10,000 IU of Profasi® IM. Ultrasound guided transvaginal follicular aspiration was performed 34–36 hours after hCG injection. The oocytes collected were evaluated for maturity and treated with ICSI. The embryos produced were transferred at day 3 using standard procedures. Pregnancy testing was performed 14 days after transfer, and clinical pregnancy was defined as the presence of gestational sac with heart beat on ultrasound. Statistical analysis was performed using t-test, $p < 0.05$ considered statistically significant.

RESULTS: The two groups of treatment did not differ significantly by age, BMI, total FSH, follicles >14 mm, eggs retrieved, mature eggs, fertilized eggs, # embryos transferred, % fertilization and fertilization rate per mature oocytes. The Table below shows the mean values for every variable + standard deviation.

Dose	Profasi® 10K.	Ovidrel® 250mcg	p
Number of patients.....	78	73	
Age & cycle start	**35.85 ± 4.93**	**34.87± 4.98**	**0.22**
BMI	22.66±3.96	22.78±3.33	0.78
Total FSH dose (IU)	2501 ± 592	2528 ± 605	0.77
Hours from hCG to OPU	35.45±0.54	35.60±0.76	0.16
Follicles >14mm	17.23 ± 11.80	19.52 ± 14.36	0.28
Total oocytes	11.09 ± 7.81	13.47 ± 9.98	0.10
Mature oocytes	8.28 ± 6.00	10.06 ± 7.60	0.11
Normal fertilized	6.30 ± 5.02	6.63 ± 4.89	0.69
Embryos transferred	3.37 ± 1.29	2.98 ± 1.46	0.08
Implantation rate	12.82 ± 20.14	14.07 ± 19.69	0.70

CONCLUSION: The results of this study showed no differences with respect to the number of mature follicles or eggs, number of normal fertilizations, number of embryos transferred and implantation rate. Our results suggest that lyophilized r-hCG 250 mcg is at least as effective as u-hCG 10,000 IU when used to achieve final follicular maturation in patients undergoing IVF.

Supported by: None

OUTCOME PREDICTORS-CLINICAL: ART I

Monday, October 18, 2004
2:00 P.M.

O-89

Towards single blastocyst transfers − preliminary experience. M. Meintjes, D. M. Bookout, S. J. Chantilis, A. J. Rodriguez, J. D. Douglas, J. D. Madden. Presbyterian Hospital ARTS Program, Dallas, TX.

OBJECTIVE: Most IVF programs can limit triplet pregnancies to less than 5% by transferring no more than 2 embryos per patient. However, twin pregnancy rates as high as 80% in good-prognosis patient populations are common in this program. Twin pregnancies may be curtailed further only by transferring single embryos. Single blastocyst transfer (SBT) may be the ideal approach to realize this goal, provided the existence of an effective blastocyst cryopreservation program. Therefore, the objectives of this study were to evaluate the patient acceptance rate and the clinical outcomes when offering SBT to selected patients.

DESIGN: The following treatment groups were considered: 1) Treatment 1 − patients accepting a SBT recommendation, 2) Treatment 2 − patients refusing a SBT and 3) Treatment 3 − retrospectively identified patients that should have been offered a SBT.

MATERIALS AND METHODS: SBT was offered over a 3-year period to patients ≤36 years of age or patients using donor oocytes if they had two or more quality blastocysts for transfer. A quality blastocyst was defined as expanded with an ICM-grade of C or better (A the best, F the worst) and a trophoblast grade of B or better (A the best, D the worst). Differences in the endpoints measured were detected with Chi-square analyses.

RESULTS: Implantation rates were not different for SBT (73.3%) and two-blastocyst transfers (70.7%). Three sets of monozygotic triplets resulted from the group of patients not accepting a SBT.

CONCLUSION: Even though the fresh pregnancy rate was slightly lower for patients having a SBT compared with patients with two blastocysts transferred, the same cumulative fresh/frozen-thawed pregnancy rate was possible. Furthermore, twin pregnancies were reduced from 65% to 2% when transferring a single blastocyst. Roughly, one third of patients offered a SBT accepted. All patients electing SBT in this study had a second chance if the reason for not conceiving had been other than blastocyst quality. In contrast, almost half (44%) of patients electing two blastocysts for transfer did not have cryopreserved embryos. These results suggest that we have an obligation to encourage more patients to consider SBT when meeting the criteria used in this study. Live birth rates should no longer be compromised when transferring single blastocysts to selected patients. On the contrary, the chances for a healthy infant may be improved.

Supported by: Thanking Rita Basuray, Serono Inc. for assistance with data analyses.

Pregnancy outcomes for patients ≤36 years of age with or without SBT

Treatment Group	Number of Patients	Number of Blastocysts Transferred	Fresh Ongoing/Live Births (%)	Cumulative Fresh/Frozen Twins (%)	Cumulative Fresh/Frozen Ongoing/Births (%)
Patients ≤36 years					
Treatment 1	43	1	29 (67.4)	0^{a} (0)	34 (79.1)
Treatment 2	97	2	76 (78.4)	48^{b} (60.0)	80 (82.5)
Treatment 3	63	2	48 (76.2)	32^{b} (65.3)	49 (77.8)
Total for patients ≤36 years and donor oocytes					
Total no SBT	239	2	189^{A} (79.1)	131^{a} (64.9)	202 (84.5)
Total SBT	60	1	41^{B} (68.3)	1^{b} (2.0)	49 (81.7)

^{A,B}Numbers within columns with different superscripts are different. χ^2, P<0.06.
^{a,b}Numbers within columns with different superscripts are different. χ^2, P<0.05.

Pregnancy outcomes for patients ≤36 years of age with or without SBT

Treatment Group	Number of Patients	Number of Blastocysts Transferred	Fresh Ongoing/Live Births (%)	Cumulative Fresh/Frozen Twins (%)	Cumulative Fresh/Frozen Ongoing/Births (%)
Patients ≤36 years					
Treatment 1	43	1	29 (67.4)	0^{a} (0)	34 (79.1)
Treatment 2	97	2	76 (78.4)	48^{b} (60.0)	80 (82.5)
Treatment 3	63	2	48 (76.2)	32^{b} (65.3)	49 (77.8)
Total for patients ≤36 years and donor oocytes					
Total no SBT	239	2	189^{A} (79.1)	131^{a} (64.9)	202 (84.5)
Total SBT	60	1	41^{B} (68.3)	1^{b} (2.0)	49 (81.7)

^{A,B}Numbers within columns with different superscripts are different. χ^2, P<0.06.
^{a,b}Numbers within columns with different superscripts are different. χ^2, P<0.05.