

Design: A single centre retrospective data-analysis of all transfers in the past six years.

Materials/Methods: The completed data sets of 8862 consecutive embryo transfers between January 1995 and December 2000 were analysed. The ongoing pregnancies were grouped into less than 100% implantation and 100% implantation. Ten potentially important variables were compared; age, primary or secondary infertility, duration of infertility, cause of infertility, IVF attempt, number of oocytes collected, fertilization rate, number of embryos cultured, number and quality of transferred embryos. Data were compared using the independent samples t-test or Chi-square were appropriate. The important variables identified were then used to filter a patient group that meets the criteria for SET and the effect of a fictive SET was calculated.

Results: The overall pregnancy rate (PR) was 24.8%; the ongoing PR was 19.3% of which 25.6% were multiple, 417 twins and 22 triplets. In 419 transfers the implantation rate was 100%; group A, in 1292 it was less than 100%; group B. The average age was significantly lower in group A; 32.9 (SD 3.65) vs 34.4 (SD 3.96) P < 0.001. More primary infertility was found in group A, 51.2% vs 48.7%, not significant (NS). Duration of infertility was equal 4.12 (A) vs 4.23 (B) years. The cause of infertility was also equally distributed. The number of IVF attempts were significantly lower in group A; 2.28 (SD 1.57) vs 2.54 (1.77) P = 0.007. The number of oocytes, embryos, and fertilization rate were equally distributed. The number of embryos transferred was significantly lower in group A; 1.92 (SD 0.37) vs 2.21 (SD 0.41), P < 0.001. In group A 254 patients received at least one Class 1 embryo, in group B 681 patients, 53.1% in group A received only Class 1 embryos vs 40.2% in group B (P < 0.001). In group A 289 patients received at least one Class 2 embryo, in group B 1016 patients, 58.5% in group A received only Class 2 embryos vs 49.8% in group B (P < 0.001). If we filter the patient group for age  $\pm$  35 years, attempt  $\pm$  2, two Class 1 embryos transferred 483 patients are selected. In this group is the ongoing PR 31.3%, 102 (67.5%) singletons and 49 (32.5%) twins. If we assume that the embryo that implanted was chosen in 50% of the singleton pregnancies had we performed SET, 100 singleton pregnancies would have been established. The ongoing PR would then have been 100/483 = 20.7%.

Conclusions: This analysis indicates that the most important variables are the age of the patient, the IVF attempt number, and the embryo quality. The calculated PR of 20.7 in a patient group eligible for SET is higher than the overall PR. This makes SET an acceptable procedure in a selected patient group, maintaining an acceptable PR with zero twin pregnancies.

#### P-174

**Clinical outcomes with transfer of blastocyst or cleavage stage embryos: high order pregnancies, newborn weights and sex ratios.** H. F. Rodriguez, M. Bustillo, J. LaPalme, E. Riley, J. Eisermann, K. Thompson. South Florida Institute for Reproductive Medicine, Miami, FL.

Objective: We have previously reported our preliminary clinical experience with the culture and transfer of blastocyst stage embryos. Here, we report results of a retrospective analysis compiling our clinical outcome experience for now two years (1999–2000 period).

Design: Retrospective analysis.

Materials/Methods: In a total of 599 consecutive unselected cycles in which couples were given the opportunity to have extended culture, implantation rates (gestational sacs/embryos transferred) were 16.5% (182/1100) after day 3 embryo transfers (D3 ET) and 27.2% (157/578) after blastocyst transfers (D5,6 ET), (P < 0.0001). The mean number of embryos transferred was  $3.2 \pm 0.9$  vs.  $2.3 \pm 0.6$  for D3 ET and D5,6 ET, respectively (P < 0.0001).

Results: Outcome measures for both groups are shown in the table below. The overall incidence of multiple pregnancy (defined as two or more gestational sacs) is not decreased with D5,6 ET; however, a significant reduction in the frequency of triplet pregnancies is observed with D5,6 ET (P < 0.01). At the time of writing 182 babies have been born. The sex ratio (males:females) in babies from D3 ET (49:51, n = 100) was not different from that of babies from D5,6 ET (47:55, n = 82), (P = 0.3). Likewise, no differences in birth weights were noted for male or female babies born after the transfer of blastocysts vs. cleavage stage embryos (male babies:  $2568.5 \pm 884.5$  grams vs.  $2574.2 \pm 779.6$  grams for D5,6 ET and D3 ET, respectively, P = 0.9; female babies:  $2789.6 \pm 720.0$  grams vs.  $2565.7 \pm 873.2$  grams for D5,6 ET and D3 ET, respectively, P = 0.2).

Clinical outcomes after transfer of Day 3 embryos or Blastocyst stage embryos.

Parameter	Day 3 ET (No. and %)	Blastocyst ET (No. and %)	P value (Fisher's exact test)
Chemical pregnancies (Positive HCG's)	149/343 (43.4)	123/256 (48.0)	n.s.
Clinical pregnancies (gestational sacs)	118/343 (34.4)	108/256 (42.2)	0.06
Singletons	68/118 (57.6)	63/108 (58.3)	n.s.
Overall frequency of multiples	50/118 (42.4)	45/108 (41.7)	n.s.
Twins	37/118 (31.3)	42/108 (38.8)	n.s.
Triplets	12/118 (10.2)	2/108 (1.9)	0.01
Quadruplets	1/118 (0.8)	1/108 (0.9)	n.s.
Monozygotic twins	3/118 (2.5)	1/108 (0.9)	n.s.

Conclusions: The high rate of twins with D5,6 ET (38.8%) warrants evaluation of single blastocyst transfers.

#### P-175

**Estradiol (E2) and progesterone (P4) endometrial tissue levels in artificial estrogen replacement cycles after progesterone administration by intramuscular and vaginal routes.** A. Gracia, C. F. Chillik, M. Borghi, J. C. Calamera, G. E. Fiszbjn. Ctr de Estudios en Ginecología y Reproducción (CEGYR), Buenos Aires, Argentina; Lab de Estudios en Reproducción (LER), Buenos Aires, Argentina.

Objective: The purpose of this study was to compare the serum progesterone levels, the tissue progesterone concentrations and the endometrial appearance using ultrasound measurement when micronized intravaginal progesterone and intramuscular oil progesterone were administered.

Design: Randomized, Prospective and comparative study.

Materials/Methods: Eleven postmenopausal volunteers on estrogen-replacement therapy (17 b estradiol patches to mimic a physiologic follicular phase) were randomized to one of two groups: group 1 (n = 5) received intravaginally micronized progesterone (200 mg every 8 Hs) and group 2 (n = 6) received intramuscular injections of progesterone (100 mg/day). Serum estradiol and progesterone concentrations, endometrial thickness and pattern by transvaginal ultrasound, and endometrial biopsy (to evaluate estradiol and progesterone tissue concentrations) were obtained during days 21 and 26 of the artificial cycle.

Results: Serum progesterone concentration on day 21 was  $104 \pm 107$  in group 1 vs.  $7.55 \pm 4.9$  ng/ml in group 2. Estradiol and Progesterone tissue levels on day 26 were significantly higher in group 1 ( $25.76 \pm 13.5$  vs.  $12.5 \pm 5.6$  pg./protein mg and  $8.80 \pm 7$  vs.  $0.78 \pm 0.5$  ng/protein mg, respectively). No significant differences were found when the remaining parameters were evaluated including: ultrasound endometrial evaluation, serum estradiol levels on days 21 and 26, serum progesterone concentration on day 26 and E2 and P4 tissue levels on day 21.

Conclusions: According to our results vaginal micronized progesterone administration seems to enhance the progesterone tissue concentrations at the target organ. This suggest a more efficient absorption when the intravaginal administration route is used.

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#### P-176

**Adoption of ultrasound guidance for embryo replacement improves pregnancy rate for multiple providers.** K. F. Miller, C. E. Sinoway, T. Falcone, M. Attaran, J. M. Goldberg, B. J. Andrews. The Cleveland Clinic Foundation, Cleveland, OH.

Objective: ART pregnancy rates have increased with improvements in technology. In spite of improvements in ovarian stimulation and embryo culture, implantation and pregnancy rates remain suboptimal. One variable that has received little attention is the role of the ET provider. This report