

first cycle donors who caused pregnancy trended toward increased success in subsequent cycles. However, the differences were not statistically significant, possibly due to the small sample size. If our findings become significant with a larger sample size and if confirmed by other centers, future selection criteria for oocyte donors may include a history of prior pregnancy or success in first donor cycle.

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P-92

EFFECT OF DURATION OF ESTROGEN TREATMENT ON IMPLANTATION AND PREGNANCY RATES IN AN EGG DONATION PROGRAM. J. Hernandez, V. Sanabria, V. Peña, E. China, R. Bennett, A. Palumbo. Centro de Asistencia a La Reproducción Humana de Canarias, La Laguna, Tenerife, Spain; Westchester Reproductive Medicine, Yorktown Heights, NY.

OBJECTIVE: The optimal duration of estrogen replacement for endometrial preparation in donor egg recipients is controversial. The aim of the present study is to determine whether the duration of estrogen treatment influences implantation and pregnancy rates in donor egg recipients.

DESIGN: Retrospective database analysis.

MATERIALS AND METHODS: Between January 2002 and March 2006, 148 egg donation cycles were performed in 112 patients between 29 and 54 years old. Ovulation induction in egg donors was carried out using either a downregulation or an antagonist protocol, with or without birth control pill pre-treatment. Recipients received either oral estradiol valerate or transdermal estradiol for a variable number of days depending on donor availability. Vaginal progesterone suppositories were started on the day of egg retrieval. Ultrasound guided embryo transfer was performed on day 3 in the great majority of cases (n=120), more rarely on day 2 (n=13) or 5 (n=15). The mean number of embryos transferred was 2.1, with 2 embryos transferred in most cases, 1 embryo in 13 cases and 3 embryos in 29 cases. Patients were divided into 2 groups based on duration of treatment: ≤ 19 (range 9 to 19) and ≥ 20 days (range 20 to 69). Differences were analyzed using the student t test and the X² test.

RESULTS: Overall, the clinical pregnancy rate (PR) per cycle was 56.1% the ongoing (>20 wks) PR per cycle was 40.5%. Results in the 2 groups are shown in the table below.

Table 1. Effect of the number of days of estrogen treatment on cycle outcome.

	9 to 19 days	20 to 69 days	Statistics
No. patients	44	75	
Mean Age	42.1	41.8	NS
No.embryos transferred	2.2	2.1	NS
No. Clinical pregnancies	33	50	NS
% Clinical pregnancy	58.9%	54.3%	NS
No. miscarriages	10	13	NS
% Ongoing pregnancy	41.1%	40.2%	NS
No. Twin pregnancy	5	10	NS
Implantation rate	38%	32.6%	NS

CONCLUSION: Our data show that duration of estrogen treatment does not affect implantation or pregnancy rates, allowing a great flexibility in an egg donation program. Increasing the number of patients, will permit the analysis of shorter time intervals, to confirm the present findings.

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P-93

THE INVOCELL, A NEW MEDICAL DEVICE FOR INTRA VAGINAL FERTILIZATION AND CULTURE. L. Bonaventura, P. Ahlering, R. Morris, J. Mouchel, M. Scheiber, J. Batzofin. Bonaventura Reproductive Medicine, Carmel, IN; SIRM St. Louis, Creve Coeur, MO; IVF1, Chicago, IL; Unite D'Aide Medicale a la Procreation Clinique du Tertre Rouge, Le Mans, France; Institute for Reproductive Health, Cincinnati, OH; SIRM-NY, New York, NY.

OBJECTIVE: The INVOcell is a device designed to achieve fertilization and early embryo development by incubating eggs, sperm and resulting embryos in the vagina. This clinical study was performed to evaluate the efficacy and safety of the INVOcell.

DESIGN: Multicenter, non randomized, non comparative clinical trial.

MATERIALS AND METHODS: Approximately 75 women younger than 38 years old will be treated at 6 IVF centers. To date 60 women have been enrolled. Severe endometriosis, egg donors and men with severe male factor necessitating ICSI were excluded. Controlled ovarian hyperstimulation was achieved using standard protocols. Egg retrieval was performed under IV sedation. To evaluate fertilization and embryo development in the INVOcell, no less than 4 eggs and no more than 10 eggs were placed with sperm in the inner part of the device with culture medium. In some patients excess eggs were inseminated using traditional IVF or ICSI techniques. The INVOcell inner chamber was inserted into an outer chamber and the completely assembled INVOcell device was placed in the vagina with a vented diaphragm to effect retention. The INVOcell remained in the vagina for 3 days. After 3 days the diaphragm and INVOcell were removed. The diaphragm was discarded and the INVOcell device was cleaned. The inner part of the device was then placed upright for 15 minutes in an incubator at 37 °C. After 15 minutes the embryos were collected from the microchamber at the base of the INVOcell and observed to determine their stage of development and quality. At this point 1 to 3 embryos were transferred into the uterus. Study endpoints include fertilization, embryo development and pregnancy rates.

RESULTS: To date the first 29 procedures have been completed, resulting in 9 pregnancies (31%, ITT). The observed fertilization rate was 48% and the lead embryos were between 6 and 14 cells. Treatment of an additional 50 patients will be completed within the next few weeks and full clinical results, as well as a study on patient acceptance, will be available at the time of presentation.

CONCLUSION: Fertilization and early embryo development were effectively achieved intra vaginally within the INVOcell device and several pregnancies are ongoing. This device reduces the need for complex laboratory equipment and provides multiple options for the physician and the IVF patient.

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P-94

THE EFFECT OF BODY MASS INDEX ON IVF OUTCOME. J. P. Stassart, G. D. Ball. RMIA, Woodbury, MN.

OBJECTIVE: The objective of this study was to evaluate the effect of Body Mass Index (BMI) on In Vitro Fertilization (IVF) outcomes.

DESIGN: This was a retrospective analysis of patients undergoing routine IVF. Patients were grouped into 5 categories based on BMI: <21 (group 1), 21-25 (group 2), 26-30 (group 3), 30-35 (group 4), and >36 (group 5). None of the patients were diagnosed as having polycystic ovarian stimulation syndrome. All patients were less than 36 years of age at stimulation start. To control for possible confounding of embryo quality at transfer and BMI grouping, sub-analyses were performed that included only patients that received two "top quality" embryos at transfer.

MATERIALS AND METHODS: All patients underwent ovarian stimulation with injectible gonadotropins and received hCG to induce final follicle maturation. A transvaginal oocyte retrieval was performed 36 hr post hCG injection. Fertilization was achieved either by insemination or ICSI and embryo transfer was performed on days 3, 4 or 5 post oocyte retrieval. At the time of transfer, Day 3 embryos were evaluated and assigned a quality score based on morphological characteristics (number of cells, blastomere multinucleation, degree of fragmentation, and blastomere symmetry). Day 4 embryos were scored based on degree of compaction and symmetry of compaction. Day 5 embryos were scored based degree of blastocoel formation, integrity of the inner cell mass and integrity of the trophoblast. Clinical pregnancy was defined as an intrauterine gestation sac with documentation of fetal heart beat.

RESULTS: When all patients were included in the analysis, the clinical pregnancy rates for groups 1-5, respectively, were 47.1% (n=34), 54.8% (n=186), 48.9% (n=94), 40.4% (n=47), and 0% (n=9). The R² value for the calculated linear regression was 0.61 (Figure 1). When inclusion criteria were limited to only patients that received two embryos graded as "top quality", pregnancy rates for groups 1-5, respectively, were 63.6% (n=11), 67.9% (n=53), 60% (n=25), 56.3% (n=16), and 0% (n=2). The R² value for the calculated linear regression was 0.61 (Figure 2).