

Results: The use of purified FSH + HCG in the IVM medium was the more effective hormonal combination ($P \leq 0.05$), establishing embryonic development at day 3 (8-cell embryo) as follows: G1 41.4%, G2 39.1%, G3 51.1% and G4 48.6%. At day 5, the corresponding results were: G1 24.1%, G2 30.7%, G3 47.8% and G4 16.4%. At day 7, results for embryos that reached blastocyst stage were: G1 15.8%, G2 22%, G3 38.1% and G4 9.1%.

Conclusions: The present study demonstrates that the type and combination of hormones have a profound effect on embryonic development, the best combination being the use of purified FSH and HCG; this combination of gonadotrophins and epidermal growth factor perhaps imitates the natural process of maturation more closely. This study represents, as far as is known, one of the first results using IVM and IVF in a bovine model in Mexico and the use of recombinant hormones for bovine IVM.

Efficacy of two-step embryo transfer: 2 years of experience

Yutkin EV¹, Zorina IV^{1,3}, Yakovenko SA^{1,2}

¹AltraVita IVF Clinic, 4A Nagornaya St., Moscow 117186, Russia; ²Biophysics Dept, Moscow State University, Vorobiev Gory, Moscow 117234, Russia; ³e-mail: altravita@mail.ru

Introduction: Embryo transfer in IVF is usually performed on day 3 or 5 after egg retrieval. The advantage of cleavage-stage embryo transfer is the opportunity for the embryo to provide various signalling factors necessary for implantation. The rationale for culturing up to blastocyst stage is to improve uterine and embryonic synchronicity and self-selection of viable embryos, thus resulting in higher implantation rates. The study combined embryo transfer on day 3 and day 5, performed two-step embryo transfer and determined the groups of patients for whom it may be useful.

Materials and methods: Two-step embryo transfer on day 3 and day 5 was performed from April 2006 to February 2008 for 285 patients. The age of the patients varied from 27 to 43 years. All the patients were divided into two groups, under and above 38 years old. The main condition for double transfer was the presence of four good-quality embryos on the third day of development. The patients had had from one to five previous IVF cycles which did not result in pregnancy. The condition of embryo culture was the same in all cases. Depending on the patient's age, two or three embryos were transferred. Control groups consisted of the patients with one-step transfer of two blastocysts.

Results: Implantation rate (IR) was 33% in patient group under 38 years old and 24% in patients group more than 38 years old. Pregnancy rate (PR) was 60% and 46% accordingly. No significant differences were found between the groups under consideration and control groups. But implantation and pregnancy rates between the groups reached significance when patients with three or more previous IVF failures were considered. Patients under 38 years old with three or more failed IVF cycles had 29% IR and 42% PR in cases with double embryo transfer in comparison with 21% IR and 33% PR in cases with one-step two-blastocyst transfer. Patients after 38 years of age with three or more negative IVF cycles had 21% IR and 32% PR in cases with two-step embryo transfer in comparison with 16% IR and 24% PR in cases with one-step two-blastocyst transfer.

Conclusions: Two-step embryo transfer may be useful for patients of all age groups with previous implantation failure.

Sonohydrohysteroscopy in evaluation of infertile patients

Dessole S, Dessole F, Capobianco G

Gynecologic and Obstetric Clinic, University of Sassari, Italy

The evaluation of the uterine cavity and the assessment of tubal patency are part of all infertility investigations. Sonohydrohysteroscopy (SHG) consists of transvaginal ultrasonography (TVU) with concomitant instillation of contrast medium into the uterine cavity by using a catheter inserted through the cervical os. SHG has a high sensitivity and specificity for the study of the uterine cavity and determination of tubal patency; results concord well with those of hysteroscopy (HYS) and hysterosalpingography (HSG). Saline solution is a contrast medium that distends the uterine cavity and permits a precise morphological definition. Echogenic contrast medium is a combination of air and a solution of galactose microparticles. This contrast medium permits the visualization of intramural and isthmus tract of the tube. The main indications of SHG are sterility, primary or secondary infertility and abnormal uterine bleeding in both fertile and peri- or post-menopausal women. In the evaluation of infertile patients, especially before performance of an assisted reproductive treatment, study of the uterine cavity, the diagnosis of Mullerian malformations and anatomical abnormalities such as submucous myomas, polyps and sinechiae are mandatory. In fact, the presence of myomas and polyps could make implantation of an embryo difficult and increase the risk of miscarriage. Furthermore, Mullerian malformations, myomas and polyps are found in 15–27% of women with chronic fetal wastage. Thus, SHG is performed in this university hospital as a first-line diagnostic procedure for abnormal uterine bleeding and Mullerian malformations, to investigate infertile patients undergoing treatment and to programme endoscopic surgery. In about 90% of women with abnormal uterine bleeding, SHG could substitute diagnostic hysteroscopy and select patients who should directly undergo operative hysteroscopy or other surgical interventions. A study was performed to evaluate side effects, complications, difficulties and related solutions associated with SHG done in 1153 patients. A total of 1074 (93%) procedures were performed correctly, but the investigation was not completed in 79 (7%) women because of severe cervical stenosis or insufficient cervical seal, presence of uterine myomas, occurrence of pelvic pain or vaginal symptoms. By using specific techniques, a second attempt was successful in 60 of these 79 patients. In this study, side effects such as moderate or severe pelvic pain, vaginal symptoms, nausea and vomiting were reported in 102 (8.8%) women. Complications such as fever and peritonitis occurred in 11 (0.95%) of patients. As with every handling procedure, there is a learning curve and the diagnostic accuracy and interpretation of SHG are improved by experience. SHG is a simple, safe and well-tolerated technique that has a low side-effect rate and rare complications.