

r-hLH supplementation has a clinically relevant benefit in increasing the number of oocytes and the clinical pregnancy rate for Poor Ovarian Responders.

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OVARIAN VASCULARIZATION ANALYZED BY 3D POWER DOPPLER ANGIOGRAPHY ULTRASOUND PREDICTS THE NUMBER OF MATURE OOCYTES IN POOR RESPONDER PATIENTS. B. Moliner, J. Ll acer, F. Sellers, L. Luque, J. Guerrero, R. Bernabeu. Reproductive Medicine, Instituto Bernabeu, Alicante, Spain.

OBJECTIVE: To evaluate the predictive ability of Doppler Angiography (3D-PDA) performed the day of hCG administration in the number of mature oocytes collected.

DESIGN: Prospective clinical trial.

MATERIALS AND METHODS: We include for the study a group of very low responders stimulated for IVF in our institution from January 2012 and April 2013. All patients fulfilled Bologna Criteria and received conventional controlled ovarian stimulation with standard dose of gonadotropins (300 UI/day) using agonist down regulation or antagonist protocol. Ultrasound exploration was performed the day of hCG triggering. Virtual organ computer-aided analysis (VOCAL) was used to calculate volume of interest (ovary), after that, angiopower Doppler signal within this volume was quantified. Ovarian vascularity was measured by 3D-PDA indexes (vascularization index (VI), flow index (FI), and vascularization flow index (VFI)). Univariate analysis was performed by a Spearman correlation establishing potential confounders. We performed a multiple linear regression adjusting for confounding variables.

RESULTS: 33 patients were included. The median age was 37,23 (SD 1,6). An average of 3,64(SD = 1,97) oocytes and 2,61(SD = 2,13) mature oocytes were obtained. No predictive relationship was established between the number of oocytes and ovarian vascularization. Number of mature oocytes retrieved was significantly correlated to 3D-PD indexes. (VI: $r = 0.876$, $r(2) = 0.751$, FI: $r = 0.854$, $r(2) = 0.711$; VFI, $r = 0.878$, $r(2) = 0.756$). This correlation was significant regardless the number of dominant follicles.

CONCLUSION: Ovarian vascularization analyzed by 3D-PDA is a useful tool to predict the number of mature oocytes that we can retrieve in poor responder patients. The decision to cancel or go ahead with the oocyte collection depends on the number of mature eggs expected in patients with a very low ovarian response to stimulation and 3D-PDA could be a helping biomarker in the decision making process.

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MICRODOSE GnRH AGONIST FLARE-UP VERSUS FLEXIBLE GnRH ANTAGONIST PROTOCOL IN POOR RESPONDERS UNDERGOING IN-VITRO-FERTILIZATION (IVF) CYCLES: A RANDOMIZED CONTROLLED TRIAL. N. Malhotra, N. Singh. ART Centre, Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, New Delhi, Delhi, India.

OBJECTIVE: Optimal stimulation protocol for poor responders remains undefined. The aim of this study was to compare the efficacy of microdose flare-up GnRH agonist (GnRH-a) and multiple dose flexible GnRH antagonist protocols in poor responders.

DESIGN: Prospective randomized clinical trial.

MATERIALS AND METHODS: Forty one women classified as poor responders as per Bologna criteria were recruited for study and randomized to receive either microdose flare-up GnRH agonist or GnRH antagonist protocol for controlled ovarian hyperstimulation during IVF cycle. Seventeen women (Group I) received microdose lupride acetate (50 micrograms twice daily), beginning second day of withdrawal bleeding and twenty four women (GROUP II) received 0.25 mg of cetrorelix daily from the day the lead follicle reached 14mm in diameter. Primary outcome was clinical pregnancy rate. Secondary outcome assessed included serum E(2) levels, number of mature oocytes, dose of gonadotropin used, cancellation, fertilization and implantation rate.

RESULTS: There was no difference in the demographic, clinical and baseline hormonal profile of women in both groups. The mean serum E(2) concentration on the day of hCG administration (1362 ± 208 pg/ml vs 1020 ± 162 pg/ml, $p=0.03$) and number of mature oocytes (5.2 ± 1.8 vs 2.8 ± 1.2 , $p=0.01$) were significantly higher in Group I than Group II. The dosage

of Gonadotropin use was non-significantly lower in Group I than Group II (3140 ± 880 vs 3654 ± 1080 IU, $p=0.2$). The cancellation, fertilization, and implantation rate were similar in both groups. The clinical PRs per started cycle of microdose GnRH-a and GnRH antagonist groups were not significantly different (17.6% vs 12.5%, $p=0.4$). There were no statistically significant differences in fertilization and implantation rates between the two groups.

CONCLUSION: Microdose Gn RH-a flare up protocol and GnRH antagonist protocol have similar efficacy in terms of clinical pregnancy rate in poor responders.

CRYOPRESERVATION - LABORATORY/BASIC

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LASER COLLAPSING OF BLASTOCYSTS PRIOR TO VITRIFICATION LEADS TO BETTER EMBRYONIC SURVIVAL AND IMPROVED OVERALL IVF CYCLE OUTCOME. R. A. Fields,^a H. J. Werland,^a J. Nguyen,^a K. R. Sieren,^a T. G. Turner,^a K. M. Silverberg.^b ^aAustin IVF, Austin, TX; ^bTexas Fertility Center, Austin, TX.

OBJECTIVE: To determine if laser collapsing blastocysts prior to vitrification leads to better blastocyst survival upon warming raising the likelihood that patients can successfully undergo frozen embryo transfer (FET).

DESIGN: Retrospective observational study.

MATERIALS AND METHODS: Human embryos were cultured to the blastocyst stage using Quinn's Advantage sequential media in an environment of 6%CO₂, 6%O₂, 88%N₂. After embryo transfer, quality blastocysts were vitrified on D5 or D6. Irvine Vitrification media and the Cryolock device were used in the collapsed group (study) and the non-collapsed group (control). Blastocysts in the study group were collapsed using a Research Instruments laser (.435 mS). Embryos were placed back into culture for a minimum of 10 minutes before vitrification. All blastocysts were warmed using Irvine Warming media.

RESULTS: The study group consisted of 449 embryos vitrified from 220 patients undergoing IVF. The control group consisted of 131 embryos vitrified from 54 patients. 266 FET cycles were initiated in the study group, while 68 cycles were initiated in the control group. Vitrified embryos survived warming in 265 of 266 study cycles, vs 61 of 68 control cycles (99.6% vs 89.7%; $p<0.05$). 432 of 449 (96.2%) warmed embryos in the study group survived, vs 91 of 131 (69%) warmed embryos in the control group ($p<0.001$). There were no differences in the number of embryos per FET (1.63 (study) vs 1.52 (control), $p=NS$). Although the overall pregnancy rate per cycle was significantly greater in the study group (72.2% vs 54.4%, $p<0.01$), there were no differences in overall pregnancy rate/FET (72.5% vs 60.7%; $p=0.07$), clinical pregnancy rate/cycle (53.0% vs 41.2%; $p=0.08$), or clinical pregnancy rate/FET (53.2% vs 45.9%; $p=0.3$).

CONCLUSION: Laser collapsing blastocysts prior to vitrification significantly improves survival upon warming. Increased embryonic survival allows a greater percentage of patients to successfully undergo FET, thereby offering a better overall outcome per IVF cycle.

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IMPLEMENTATION AND COST-EFFECTIVENESS OF FROZEN DONOR EGGS. L. B. Davis, N. A. Klein, A. R. Criniti, G. D. Ball, B. J. Senstra, M. R. Soules. Seattle Reproductive Medicine, Seattle, WA.

OBJECTIVE: To describe the successful implementation of a frozen donor egg program and compare the cost-effectiveness of fresh, fresh shared, and frozen donor egg cycles.

DESIGN: Retrospective cohort study.

MATERIALS AND METHODS: Between March 2012 and February 2013, 113 fresh donor egg recipients were compared with 29 shared recipients and 77 frozen recipients. Statistical analyses were performed with GraphPad Prism 5.0. The Chi-Square test was used for categorical data, and the Kruskal-Wallis test was used for non-parametric continuous data.

RESULTS: The clinical pregnancy rate per embryo transfer (CPR/ET) was 60% for fresh cycles, 58% for shared cycles, and 57% for frozen cycles ($p=0.98$). The clinical pregnancy rate per cycle start (CPR/start) was 53% for fresh, 47% for shared, and 57% for frozen cycles ($p=0.87$). Cancellation