SD), using 1934 ± 722 UI of FSH. 19,4 ± 7,7 oocytes were retrieved in the first cycle, and 18,7 ± 6,4 in the second. Immature oocytes were 0,7 ± 1,6 and 0,8 ± 2,2 for the first and second cycle, respectively. Atresic oocytes were 0,2 ± 0,5 and 0,007 ± 0,3. Values for the group who had three cycles are shown in Table 1. No differences were found in the number of mature oocytes, neither in immature or atresic oocytes, in two or three identical COS cycles.

Table 1. COS characteristics in donors with 3 cycles (n = 18).

	Cycle 1	Cycle 2	Cycle 3
Donor age[a]	24,8 ± 4,4	25,2 ± 4,4	25,7 ± 4,3
Days of gonadotrophin administration[a]	9,7 ± 0,6	9,7 ± 0,6	9,7 ± 0,6
Doses of FSH (in IU)[a]	1920 ± 540	1920 ± 540	1920 ± 540
Retrieved mature oocytes[a,b]	20,2 ± 6,8	19,3 ± 6,8	19,6 ± 8,7
Retrieved immature oocytes[a,c]	0,6 ± 1,4	1,2 ± 4,0	1,2 ± 2,9
Retrieved atresic oocytes[a,d]	0,2 ± 0,5	0,005 ± 0,2	0,4 ± 0,9

[a] mean ± SD. [b] p ≥ 0,84. [c] p ≥0,73. [d] p ≥ 0,22.

Conclusions: Retrieved oocyte rate in young, healthy voluntary donors is maintained through repeated COS cycles. This suggests that successive stimulation cycles do not impair ovarian response in this selected group of women.

P-54

Beneficial use of ganirelix in controlled ovarian hyperstimulation (COH) cycles in older women undergoing in vitro fertilization (IVF). M. W. Jurema, M. N. Posada, N. J. Bracero, N. P. Vlahos, J. E. Garcia. Div of Reproductive Endocrinology and Infertility, Dept of Gynecology and Obstetrics, Johns Hopkins Univ Sch of Medicine, Baltimore, MD.

Objective: Published data describing the use of GnRH antagonists in COH-IVF protocols has been limited to a population of infertile women ≤38 years of age. Hence, a study was designed to evaluate the role of ganirelix in COH-IVF protocols in women ≥38 years of age.

Design: Retrospective study.

Materials/Methods: Fifty-one patients ≥38 years of age enrolled in our fertility center from July to December 2000 to undergo COH-IVF using a GnRH antagonist (ganirelix) protocol. All patients met the following criteria for initiation of gonadotropin stimulation: cycle day 2 serum follicular stimulating hormone (FSH) concentration <13 mIU/ml and estradiol (E2) concentration between 20 and 60 pg/ml. A screening transvaginal ultrasound was performed to exclude the presence of follicles or any significant pathology. According to protocol, recombinant FSH (300 IU) and human menopausal gonadotropins (150 IU) were administered for the first 4 days. Thereafter, gonadotropin doses were adjusted according to ovarian response as determined by serial ultrasounds and E2 concentrations. A daily dose of ganirelix (0.25 mg SQ) was administered once the leading follicle had reached a diameter of 14 mm or when serum LH concentration exceeded 10 mIU/L. Human chorionic gonadotropin (10,000 IU IM) was given when at least 3 follicles had reached 18 mm in diameter. Oocyte retrieval followed 36 hours later. Transcervical embryo transfers were performed 72 hours (day 3) after retrieval. We evaluated cycle characteristics, stimulation response and clinical outcomes in this group of patients.

Results: The mean age of patients was 41.0 ± 1.9 years. The mean day 2 serum FSH, LH and E2 levels were 7.4 ± 2.2 mIU/L, 3.3 ± 1.8 mIU/L and 38.8 ± 19.7 pg/mL, respectively. Seventy-one cycles were initiated, 10 (14%) were cancelled and 5 (7%) did not undergo embryo transfer. The average duration of gonadotropin stimulation was 9 ± 2 days and the average number of days of treatment with ganirelix was 5 ± 1. The mean peak E2 concentration was 1170 ± 682 pg/mL. The mean number of oocytes retrieved was 6.4 ± 3.9 with a fertilization rate of 75%. This procedure resulted in a median of 2 (range 0-10) 6-8 cell embryos per patient available for transfer on day 3. The mean number of total embryos transferred per patient was 2.7 ± 1.3 resulting in an implantation rate of 6%. Clinical pregnancy rate was 10% (7/71) per initiated cycle and 12% (7/56) per embryo transfer.

Conclusions: To our knowledge this is the first report describing the use of ganirelix in COH-IVF cycles for women ≥38 years of age. The stimulation response and clinical outcomes observed in this study were comparable to those reported from our center using a GnRH agonist protocol. This suggests that COH-IVF protocols with ganirelix can be used safely in this age group. In addition, these patients may also benefit from the convenience and cost reduction of shorter stimulation cycles.

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P-55

Serum oestradiol/FSH ratio to predict poor responders among patients undergoing IVF and ICSI. C. Manna, A. Rahman, G. Grimaldi, V. Unfer, H. Sallam. Genesis Ctr for Human Reproduction, Rome, Italy; Alexandria Fertility Ctr, Alexandria, Egypt.

Objective: The aim of this work was to evaluate the plasma E2/FSH ratio as an index of ovarian stimulation response and a predictor of poor response in patients undergoing IVF and ICSI treatment, compared to plasma E2 or FSH alone.

Design: Stepwise regression analysis in a group of patients attending ART procedures in year 2000.

Materials/Methods: A total of 47 female patients attending the assisted conception unit for IVF or ICSI treatment were studied, consisting of 8 patients who responded poorly and 39 patients with good response to ovarian stimulation. Plasma E2, serum FSH, and E2/FSH ratio were measured and calculated in daily blood samples obtained on days 1 to 7 of ovarian stimulation.

Results: Stepwise regression analysis revealed that the number of oocytes retrieved was significantly dependent on the E2/FSH ratio measured on day 3 of ovarian stimulation ($R2 = 0.551$; $P < 0.05$). Comparing the values of E2, FSH and E2/FSH ratio in the poor responders (n = 8) to those in the good responders (n = 39) revealed that statistically significant differences between both groups regarding E2/FSH ratio started on day 2 of ovarian stimulation ($P < 0.05$). Statistically significant differences between both groups regarding plasma E2 started on day 3 of ovarian stimulation ($P < 0.005$), while significant differences between both groups regarding plasma FSH levels started on day 4 of ovarian stimulation ($P < 0.05$). An E2/FSH value of <6 on day 4 of ovarian stimulation was associated with a 100% sensitivity and a 87.2% specificity in predicting cycle cancellation.

Conclusions: It is concluded that E2/FSH ratio is a better index of ovarian stimulation response compared to either plasma E2 or FSH alone among patients treated with IVF or ICSI and can give an earlier index to predict cycle cancellation in poor responders.

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P-56

Does measurement of ovarian stromal blood flow by color Doppler predict IVF outcome? V. Isaza, J. García-Velasco, J. Martinez-Salazar, A. Requena, A. Landazabal, C. Simón. IVI-Madrid, Madrid, Spain; IVI-Madrid, Madrid, Spain; Inst Valenciano de Infertilidad, Valencia, Spain.

Objective: To study the predictive value of ovarian stromal blood flow (OSBF) measured by Doppler after pituitary suppression in ovarian response to controlled ovarian hyperstimulation (COH) and IVF outcome.

Design: Prospective, observational study, that included 105 IVF cycles from March 1 to December 31, 2000.

Materials/Methods: Patients received a long protocol for pituitary suppression, had a normal FSH level (<10) and had no ovarian cysts. Their mean age was 30.4 ± 0.6. A vaginal ultrasound was performed on day 1,2 or 3 of menses, to ascertain ovarian quiescence and OSBF indices were studied in both ovaries. Blood flow velocity waveforms (BFVW) were recorded on paper for subsequent analysis. Both ovaries were measured in their three-dimensional diameters, ovarian volume was calculated by the formula: $V = D1 \times D2 \times D3 \times 0.523$ and the total count of antral follicles was registered. Then, COH was started as previously described (Simón et al, Fertil Steril 1998;70:234–9), without considering the ultrasound measurements. When ≤4 follicles were found, the cycle was cancelled due to low response (LR). Patients were allocated in two groups, according to whether ovarian stromal BFVW were obtained bilaterally by Doppler ultrasound (Group 1, n = 82) or in Group 2 (n = 23) when no BFVW could be measured in one or both ovaries, because no stromal blood flow could be detected.