Results: A total of 642 oocytes were retrieved from 32 unstimulated PCOS patients with (16) or without hCG injection (16 patients) and no statistical difference ($P>0.05$) was found in the number of retrieved oocytes between the treatments (18.9 ± 6.5 vs. 21.3 ± 12.2). Overall comparison of IVF-ET outcome was firstly made and there were no significant treatment effects on the number of morphologically normal oocytes (16.4 ± 2.1 vs. 16.9 ± 2.1), the rates of maturation (55.2 vs. 59.5%), fertilization (44.3 vs. 46.7%), two pronuclei formation (40 vs 41.2%) and cleavage (91.7 vs 97%), and pregnancy outcome (26.7 vs. 31.3%). Comparison was secondly made to evaluate how hCG affects the maturation of retrieved oocytes. More retrieved oocytes were at the intermediate stage [expand cumulus cells with no germinal vesicle (GV)] in hCG injected patients than in no hCG injected patients (0 vs. 44.7%). When compared the developmental competence of oocytes at the same maturation stage, however, GV oocytes retrieved from hCG injected patients had lower rates of morphological normality (75.5 vs. 86.8%), maturation (44.4 vs. 59.5%), fertilization (38.7 vs. 44.3%) and two pronuclei formation after IVF (30.3 vs. 41.2%) than those retrieved from no hCG injected patients. Furthermore, the developmental competence of intermediate oocytes retrieved after hCG injection was similar to that of GV oocytes retrieved after no treatment.

Conclusion: The results of this study suggests that hCG priming before oocyte aspiration in our ART program does not improve IVF-ET outcome. Although hCG priming increased the number of retrieved oocytes initiating their maturation process, it could not further improve the developmental competence of the oocytes.

** Supported by a grant from the Interdisciplinary Research Program of the KOSEF (1999-2-205-002-5).*

Tuesday, October 24, 2000
4:45 P.M.

O-090

Induction of Ovulation With a Single Dose of Metrodin-HP in P.C.O.S. S. Ghosh, S. Goswami, B. N. Chakravarty. Institute of Reproductive Medicine, Salt Lake City, Calcutta-700 091, India.

Objective: To determine whether a single dose of 75 IU of Metrodin-HP produced follicular response in patients with clomiphene-citrate resistant polycystic ovary syndrome.

Design: This study was done at the Institute of Reproductive Medicine, Calcutta, during the period March 1999 to December 1999. Two hundred patients with clomiphene-citrate resistant PCOS were enrolled in this study.

Materials and Methods: Clomiphene Citrate resistance was defined as failure to ovulate after the administration of clomiphene citrate in incremental doses of up to 150 mg per day from day 3 to day 7 of the menstrual cycle, over at least three cycles. All the patients were in the age group of 28 yrs to 35 yrs, had primary infertility, male factor was normal and tubes were patent. PCOS was the only diagnosis as the cause of infertility in all of them. Ovulation was induced with a single dose of 75 IU of Metrodin-HP on day 3 of the treatment cycle, along with Clomiphene citrate from day 3 to day 7. Ultrasound scan was performed from the 9^{th} day of the cycle and follicular development was monitored. Endometrial response was also assessed. Ultrasound scan was done initially on alternative days and thereafter daily. When the dominant follicle had developed to a size of at least 17 mm, 5000 IU of HCG was administered. Ovulation was detected and IUI was performed in all the patients who ovulated.

Results: Out of the 200 patients, 158 exhibited a good follicular response and all of them ovulated. 42 patients had initial development of follicles up to 12 mm size, but the growth became stunted after that. Out of the 158 patients who ovulated, 55 (34.1%) became pregnant. Seven resulted in spontaneous abortions, two had stillborn deliveries, 10 had viable deliveries and the rest 36 are ongoing pregnancies.

Conclusion: Metrodin-HP can be used successfully as a single dose to induce ovulation in women with clomiphene citrate resistant PCOS. This yields a limited number of follicles and hence prevents OHSS, which is a common complication in PCOS treated with gonadotropins.

LATE-BREAKING NEWS IN RESEARCH AND TECHNOLOGY

Tuesday, October 24, 2000
2:00 P.M.

O-257

High Frequency of Meiosis II Aneuploidies in IVF Patients of Advanced Maternal Age. Y. Verlinsky, J. Cieslak, V. Ivakhnenko, S. Evsikov, C. Strom, A. Kuliev. Reproductive Genetics Institute, Chicago, IL.

Objective: It is well established that most chromosomal abnormalities originate from female meiosis, contributing considerably to pregnancy failures particularly in women of advanced maternal age. Based on DNA polymorphism studies in children with chromosomal syndromes and their parents, it was suggested that these abnormalities are mainly of meiosis I origin, although no direct observations of the outcomes of the first or second meiotic divisions have been available so far.

Design: We introduced pre-selection and transfer of aneuploidy free embryos in IVF patients of over 35, using the first and second polar body (PB1 and PB2) analysis. Because PB1 and PB2 are by-products of meiosis I & II, they provide a unique possibility for a direct analysis of the frequency of chromosomal abnormalities originating from the first and second meiotic divisions.

Materials and Methods: PB1 and PB2 were removed following maturation and fertilization of oocytes from 153 IVF patients of over 35, and analyzed by FISH, using specific probes for chromosomes 13, 16, 18, 21 and 22 (Vysis). Overall, 1145 oocytes were obtained from 188 clinical cycles and subjected to PB sampling and FISH analysis, with the results available in 966 oocytes (84.4%), of which 78.3% were with both PB results, 12.5% with only PB1 and 9.5% with only PB2.

Results: 542 (56.1%) of 966 oocytes with FISH results were predicted aneuploid. 357 (40.8%) of 874 oocytes had aneuploid PB1, compared to 357 (42.1%) of 848 oocytes with PB2 aneuploidies. Both PB1 and PB2 were abnormal in 172 (31.7%) oocytes. The types of aneuploidies differed significantly in PB1 and PB2. 196 (54.9%) of PB1 abnormalities were nullisomics, 59 (16.5%) disomics and 102 (28.6%) complex, with different types of aneuploidies involving two or more chromosomes. The proportion of PB2 disomics and nillisomics were 136 (38.1%), and 133 (37.3%), respectively, the rest (24.6%) being of complex origin. In contrast to the expected predominant meiosis I origin of chromosome 16 and 21 errors, and predominant meiosis II origin of chromosome 18 errors, our data showed no significant difference in the origin of chromosome 21 errors, and the opposite tendency for chromosome 16 and 18 errors. The majority of chromosome 16 errors were observed in meiosis II, and the majority of chromosome 18 errors in meiosis I. Chromosome 22 errors were found equally in both meiotic divisions, while chromosome 13 errors originated predominantly from meiosis I, in agreement with previous DNA polymorphism data. Overall, of 424 pre-selected aneuploidy-free oocytes, 285 were transferred in 142 treatment cycles, resulting in 35 (24.6%) clinical pregnancies and birth of 17 healthy children, with 14 pregnancies still ongoing, suggesting a positive clinical outcome following oocyte aneuploidy testing in IVF patients of advanced maternal age (average of 38.1 years).

Conclusions: The results present the first demonstration of the high frequency of aneuploidies originating from the second meiotic division, suggesting the clinical significance of detection and avoidance from transfer of the embryos resulting from the oocytes with meiosis II errors in IVF patients of advanced maternal age.

Tuesday, October 24, 2000
2:15 P.M.

O-258

Endothelial Nitric Oxide Synthase Gene Polymorphism in Women with Idiopathic Recurrent Miscarriage. [1]C. Tempfer, [2]G. Unfried, [2]F. Nagele, and [2]J. Huber. [1]Dept. of Gynecology and [2]Dept. of Endocrinology, University of Vienna School of Medicine, Vienna, Austria.

Objective: Lack of endothelium-derived nitric oxide is associated with vasospasm and vascular infarction. We investigated the relation between