

FP18

DETERMINING THE OPTIMUM NUMBER OF OOCYTES FOR RETRIEVAL.

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Objectives: The availability of highly purified and recombinant gonadotropin preparations have made it possible to generate large numbers of mature oocytes by controlled ovarian hyperstimulation. In addition, continuing refinements to embryo culture systems are increasing the number and quality of embryos available for transfer and cryopreservation. However, excessive stimulation occasionally makes it necessary to cancel embryo transfers because of extravascular fluid accumulations which either pose a risk to maternal health or decrease the likelihood of implantation. In addition, embryos resulting after these levels of stimulation may be unsuitable for cryopreservation. The objective of this study is to identify a range of follicular development which maximizes embryo number and quality while minimizing extravascular fluid accumulation.

Methods: Information was reviewed for patients undergoing IVF and ICSI cycles at our clinic. Study groups were created on the basis of ultrasound follicle measures recorded on the day of hCG (approximately 48 hours prior to retrieval). Follicles >15 mm were counted and the following groups were compared: 1-5 follicles (Group 1); 6-10 follicles (Group 2); 11-15 follicles (Group 3); 16 to 20 follicles (Group 4) and greater than 20 follicles (Group 5). For each of these groups values for serum estradiol at hCG injection; oocytes retrieved; oocytes fertilized; total embryos on luteal day 3; total embryos with minor (<10%) fragmentation; embryos cryopreserved; and pregnancy rate were compared. Incidences of remarkable extravascular fluid accumulation and cancelled embryo transfers were also compared.

Results: Estradiol, oocytes retrieved, oocytes fertilized and total embryos all increased from Groups 1 through 5. Group 1 had no embryo freezing while groups 2 to 4 had similar numbers of embryos frozen (1.50±0.50 to 1.83±0.77). More embryos were frozen for Group 5 (4.8±2.8) but this included 1 patient where all embryos were frozen. Pregnancy and ongoing pregnancy rates were highest in Group 4 with no ongoing pregnancies in Group 5. Incidences of extravascular fluid appeared to increase from Groups 3 to 5.

Conclusion: The initial results of this ongoing study indicate that increasing the numbers large ovarian follicles increases the numbers of embryos available for transfer or cryopreservation. However, with more than 20 follicles (>15 mm), pregnancy and ongoing pregnancy rates may be adversely affected by extravascular fluid accumulations and potentially decreased embryo quality.

FP19

INCREASING NUMBER OF EMBRYOS TRANSFERRED INCREASES PREGNANCY RATE IN IVF CYCLES.

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Objective: To determine if increasing number of embryos transferred increased pregnancy rate.

Design: Data from 1993-1998 were analyzed for number of embryos transferred and pregnancy status.

Materials and Methods: Patients (23 to 49 years old; average 35 ± 4.9; means ± SD) had transfer of anywhere from 1 to 11 embryos in their IVF cycles. Pregnancy was defined as detection of at least one fetal heart beat by ultrasonography. Data were analyzed among patients who had 1-2 embryos transferred, those who had 3-4 embryos transferred, and those who had 5 or more embryos transferred.

Results: Results are shown in the table below.

Variable	Number of embryos transferred		
	1-2	3-4	5 or more
Number of patients	239	198	283
Pregnancy rate	5% ^a	15% ^b	24% ^c

^{abc}Percentages that do not share a common superscript letter within row differ (P<0.01)

Conclusion: Transferring more embryos from 1-2 to 3-4 to 5 or more results in better pregnancy rate. The differences are quite startling.