An evaluation of the efficacy of using oocyte donors aged 36-39

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Summary

Purpose: To determine if oocyte donors aged 36-39 can provide adequate pregnancy rates for recipients.

Methods: Retrospective analysis of clinical, ongoing/delivered pregnancy and implantation rates for a group of recipients receiving oocytes from a pilot group of older donors.

Results: Comparable pregnancy and implantation rates were found in recipients transferring embryos derived from donors aged 36-39 as recipients using oocytes from donors ≤ 35.

Conclusions: The demonstration of adequate outcome following embryo transfer from embryos derived from fertilization of oocytes from donors aged 36-39 should expand the pool of donor oocytes and reduce the long waiting times for recipients.

Key words: Age; Recipient; In vitro fertilization.

Introduction

The first pregnancies using donated oocytes were reported in 1983 and 1984 [1-3] from a donated oocyte fertilized by the recipient's husband transferred frozen because of a failed fresh embryo transfer (ET) [1], a donor oocyte fertilized by the donor sperm [2] and a donor oocyte fertilized by the sperm of the recipient's husband transferred fresh [3].

The source of oocytes can be from infertile donors [4-7] or paid donors [8]. Whichever the source, there seems to be a need for more donors since waiting times for most recipient programs are long.

Most in vitro fertilization (IVF)-ET centers including the Cooper Center for IVF, have an age restriction for donors of ≤ 35 yrs of age. The study presented here allowed a pilot group of infertile or compensated women aged 36-39 to be placed on the list of prospective donors from which recipients could choose.

Materials and Methods

Thirty-nine women aged 36-39 waiting to be oocyte donors were given permission to be included on the donor oocyte list along with the younger donors. All donors were screened to have day 3 serum follicle stimulating hormone (FSH) levels to be < 8 mIU/ml and did not have a serum FSH ≥ 10 mIU/ml following a clomiphene challenge test.

All donors were treated with a luteal phase leuprolide acetate (0.5 mg x 10 days from the mid-luteal phase decreasing to 0.25 mg if serum estradiol (E2) < 50 pg/ml and serum progesterone (P) < 2 ng/ml) and gonadotropins (300 IU daily - various combinations of FSH only or FSH and human menopausal gonadotropin) were started.

Recipients were started on an oral graduated E2 regimen (2-6 mg and sometimes 8-10 mg) on the sixth day of the donor's leuprolide acetate until an endometrial thickness of 8 mm was obtained. Then P 200 mg twice daily by vaginal suppositories and 100 mg IM P were started and the E2 dosage was maintained. Embryo transfer occurred on the fourth day of P.

Ultrasounds were performed at 6, 8, and 12 weeks' gestation. A clinical pregnancy was considered if ultrasound showed a gestational sac and an ongoing/delivered pregnancy had to demonstrate a viable pregnancy of appropriate size at 12 weeks if they had not as yet delivered.

Results

A comparison of pregnancy rates in recipients receiving oocytes from donors aged 36-39 versus those aged ≤ 35 during the same time period is seen in Table 1. Also listed are the pregnancy rates of the infertile donors according to age.

The clinical and ongoing/delivered pregnancy and implantation rates were very similar no matter from

Table 1. — *A comparison of pregnancy rates in recipients receiving oocytes from donors aged 36-39 versus those aged ≤ 35 during same time period.*

Group	Donor ≤ 35	Recipient ≤ 35	Non-donor ≤ 35	Donor 36-39	Recipient 36-39
No. cycles	158	379	761	22	36
Avg. no. embryos/transfer	2.9	3.1	3.0	3.0	3.5
% clinical pregnancy rate/transfer	48.7	56.2	44.9	40.9	50.0
# ongoing/ delivered	73	193	320	6	17
% ongoing/ delivered pregnancy/ transfer	46.2[a]	50.9	42	27.3[a,b]	48.5[a,b]
% implanted	31.3[a]	27.4	23.5	13.8[a,b]	22.5[a,b]

[a]$p < .05$; [b]$p < .05$

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which age group they received oocytes. The older donors themselves, however had a significantly lower ongoing/delivered pregnancy and implantation rate then younger (age ≤ 35) ones. The ongoing/delivered pregnancy rates and implantation rates were lower in the older infertile donors than their respective recipients.

The implantation and ongoing/delivered pregnancy rates were similar comparing recipients should reced recipients receiving oocytes from the younger group vs the younger infertile donors. However these parameters were significantly lower in older donors compared to the recipients receiving oocytes from older donors. Older donors were also comparable to non-donors having hypothetically twice as many embryos to improve selection of embryos.

Discussion

The older donors were freely chosen by recipients who were probably anxious to begin the program and did not want to wait a longer time period. Choices for donors in the donor oocyte program at the Cooper Center for IVF are based on registration seniority. The recipients choosing the older donors thus averted waiting for several months or longer for the selection of a younger one.

These data showed comparable pregnancy and implantation rates in recipients following ET using oocytes from older donors vs younger donors. Hopefully these data will make recipients even more confident in choosing older donors. Donor oocytes are at a premium and long waiting times for most IVF programs is the rule rather then the exception. By expanding the age allowance for both infertile and paid donors, availability of donor eggs will increase and should somewhat shorten the waiting time. Furthermore, these data will provide an opportunity for older patients who need financial help in order to proceed with IVF for their own infertility problem to have a change to correct their infertility problem.

A previous study found markedly higher clinical and viable pregnancy rates and implantation rates in recipients than their respective donors [9]. However, due to improvements in embryo media and other technical advances, embryos are heartier and result in higher pregnancy rates. Thus the difference in pregnancy rates between donors and recipients has been reduced so that there was only a difference in implantation rates in a subsequent study [10]. For the data presented here there were differences in the outcome of the older donors vs the recipients but no reduced pregnancy or implantation rates were seen in younger donors vs recipients. This suggests that the adverse effect of controlled ovarian hyperstimulation may be more likely to occur in older vs younger women.

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