

Oocyte Freezing Protocol Said To Boost Pregnancy Rates

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MONTREAL — Preliminary results from an ongoing study of oocyte cryopreservation show “the highest pregnancy rates so far reported,” making egg freezing “a viable clinical option,” according to John K. Jain, M.D., the principal investigator.

“Egg freezing has turned a corner—it’s arrived,” said Dr. Jain, of USC Fertility, which is the nonprofit fertility practice of the University of Southern California’s Keck School of

cine and the Canadian Fertility and Andrology Society.

The pregnancy rate per transfer of 55.6% is “the highest I’ve seen reported,” Dr. Jain said in an interview.

A recent metaanalysis of all published frozen-egg pregnancies (118) suggests a worldwide live birth rate of 21.6% per transfer in women with a mean age of 33 years, reported Kutluk Oktay, M.D., in a separate presentation at the meeting (see accompanying story). Unpublished data from this year’s World Congress on Human Oocyte Cryopreservation suggest that the highest U.S. success rate until now has been a 34% pregnancy rate per transfer at Assisted Fertility Services of the Community Health Network in Indianapolis.

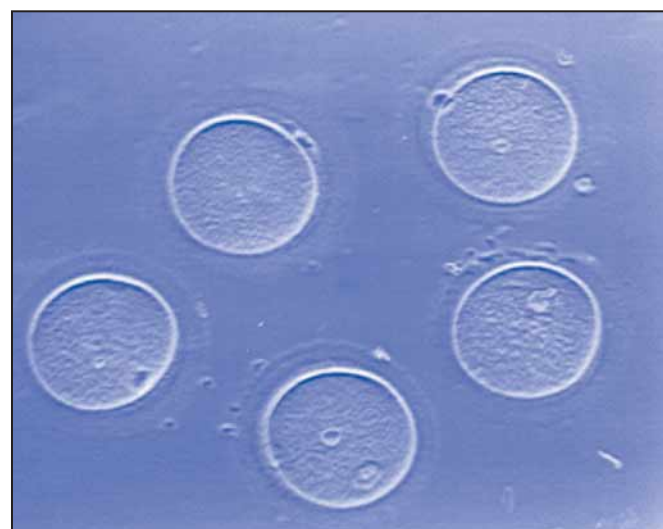
Dr. Jain attributes the success of his egg freezing protocol to a combination of culture medium and freezing method. The center uses a slow-freeze protocol in sodium-depleted, choline-substituted medium—an approach favored by many other leading centers in the world.

Two of the five women have delivered singletons, with the other pregnancies (including a set of triplets) well into their second or third trimesters, he said.

Each transfer procedure in the study included an average of 3.2 embryos, compared with an average of 2.7 embryos per transfer reported in the egg freezing metaanalysis.

The American Society for Reproductive Medicine currently recommends that in women younger than 35, to reduce the risks of multiple pregnancy, no more than two embryos should be transferred; it also recommends that consideration be given to single embryo transfer in patients with the best prognosis.

The optimal number of embryos to transfer following oocyte cryopreservation is still undetermined, Dr. Jain said.



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Slow freezing of mature oocytes, shown here before cryopreservation, is said to have led to high pregnancy rates.

Medicine, Los Angeles.

A total of 20 women (mean age 31 years) with tubal factor infertility have been enrolled in the study, which provides them with in vitro fertilization at no charge. To date, five of eight women have become pregnant after having their eggs removed and frozen for 1 month, then thawed and fertilized by intracytoplasmic sperm injection, followed by subsequent embryo transfer.

He reported the findings in a poster presentation during the joint annual meeting of the American Society for Reproductive Medi-

Metaanalysis Compares Egg Freezing, Fresh IVF Results

MONTREAL — Women who freeze their eggs at age 33 hoping to pause their biological clocks until they are ready to conceive at age 42 are actually no better off than if they simply underwent a fresh IVF cycle—if necessary—at age 42, according to new research.

The first metaanalysis of oocyte cryopreservation success rates shows the technique is 4-5 times less efficient than standard in vitro fertilization with fresh oocytes, reported Kutluk Oktay, M.D., of Cornell University, New York.

“I think the current success rates with oocyte freezing justify its use when a medical indication exists, but the same cannot be said for elective freezing at the present time,” Dr. Oktay said in an interview.

A total of 118 babies worldwide have been born from frozen oocytes—97 from the slow-freeze technique and 11 from vitrification techniques, he said at the joint annual meeting of the American Society for Reproductive Medicine and the Canadian Fertility and Andrology Society. Previous estimates of about 180 frozen-egg births might have been confused by overlapping reports in the literature, he explained.

The metaanalysis included 30 reports in peer-reviewed journals—26 detailing slow-freeze techniques and 4 detailing vitrification. The live birth rate per thawed oocyte is 1.9% for slow freeze and 2% for vitrification.

Dr. Oktay compared data from the 118 frozen egg pregnancies

(from 397 thaw cycles) with data from a control group of 397 fresh intracytoplasmic sperm injection (ICSI) transfer cycles at his institution. Women who had cycles involving frozen eggs had a mean age of 33; those who had ICSI cycles had a mean age of 33.6.

When assessing the number of live births per injected oocyte, the rates in the frozen egg cycles were 3.4% (slow freeze) and 4.5% (vitrification), compared with 6.6% in fresh IVF/ICSI and 7.5% with the addition of subsequent frozen-embryo transfers.

There are insufficient data to assess the vitrification method, he said, but compared with slow-freeze oocyte cycles, fresh IVF plus subsequent frozen embryo cycles had an implantation rate per transferred embryo almost four times higher (36.9% vs. 12.8%; odds ratio 3.68).

Similarly, live births per transfer were significantly higher (OR 3.58) in the fresh-IVF/frozen-embryo cycles (50%) compared with slow-freeze oocyte cycles (21.6%).

Egg freezing in women aged 33 has success rates comparable with those achieved using fresh IVF in women aged 41 and 42 years, he concluded.

“We cannot recommend this strategy for routine clinical use, since we do not have an accurate assessment for risk/benefit,” he said. “When ovarian failure is highly likely as a result of medical treatments, this is an easy decision. When dealing with reproductive aging, the data are not there yet.”

Standard Ovulation Induction May Promote Ca in Predisposed Women

MONTREAL — Ovulation induction for in vitro fertilization may promote the growth of breast cancer in patients who are predisposed to the disease, suggest results of a case series of seven IVF patients later diagnosed with the disease.

“A breast cancer family history should be included in the pre-IVF work-up, and women with a positive history should be considered candidates for an alternate IVF stimulation protocol,” recommended Kutluk Oktay, M.D., who reported the findings in a poster at the joint annual meeting of the American Society for Reproductive Medicine and the Canadian Fertility and Andrology Society.

In a case series of seven breast cancer patients who had undergone ovarian stimulation for in

vitro fertilization (IVF), Dr. Oktay’s team found more than half (57%) had a family history of breast cancer. It is normally expected that only about 10% of breast cancer patients will have a family history of the disease.

All women had estrogen- and progesterone-receptor-positive breast cancer, when normally it is expected that about 40% of breast cancer patients will have this type of disease, said Dr. Oktay, of Cornell University in New York.

Ovulation induction exposes women to supraphysiologic levels of estrogen, which may be problematic in women with a family history of breast cancer, Dr. Oktay suggested.

“Not that IVF necessarily causes their cancer, but it may promote it,” he said in an interview. “Counseling should include the fact that if you have a family his-



Patients with a family history of breast cancer should follow a letrozole/FSH protocol.

DR. OKTAY

tory of breast cancer, this may increase your risk—but it may simply facilitate the appearance of the disease and so patients should be closely examined before IVF and followed after.”

The mean age of the patients

was 39.8, and the mean duration from the time of their IVF treatment until their breast cancer diagnosis was 8.5 months.

One patient had a breast lesion biopsied before undergoing IVF, and it was initially negative for malignancy. However, after her IVF treatment, the mass grew, and a second biopsy revealed stage I invasive ductal carcinoma.

One other patient had stage I invasive ductal carcinoma, three had stage IIA disease, and two had carcinoma in situ. Tumor size was less than or equal to 1.5 cm in all except one patient.

Dr. Oktay, also of the Center for Reproductive Medicine and Infertility of New York-Presbyterian Hospital/Weill Cornell

Medical Center, recommends that IVF patients who face an elevated risk of breast cancer based on their family history should undergo ovulation induction with a letrozole/FSH protocol instead of standard ovulation induction, which exposes patients to high levels of estrogen. Letrozole, an aromatase inhibitor that also is used to treat breast cancer, can stimulate oocyte production without raising estrogen levels, making it ideal for this patient population, he said.

“Obviously, if they conceive, they are going to be exposed to high levels of estrogen anyway—but there will be an increase in many other hormones as well—and the studies so far don’t suggest that pregnancy necessarily increases the risk of cancer.”