Sibling Donor Oocytes Linked to Fewer Problems

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Copenhagen — The higher rate of obstetric complications documented in donor oocyte pregnancies is confined to those pregnancies in which the oocyte donor is not related to the recipient, according to Korean researchers.

In fact, pregnancies achieved through in vitro fertilization procedures involving oocytes donated by a sibling have a complication rate similar to that of in vitro fertilization pregnancies that do not involve donor oocytes, reported S.H. Cha, M.D., in a study that was directed by M.K. Koong, M.D., from Samsung Cheil Hospital, Sungkyunkwan University, Seoul.

This is the first report linking different degrees of oocyte allogenicity to obstetric complications, suggesting that this phenomenon could be due to immunologic factors, Dr. Cha said during the annual meeting of the European Society for Human Reproduction and Embryology.

It has been well documented that pregnancies achieved using donor oocytes demonstrate increased rates of pregnancy-induced hypertension and first-trimester bleeding, Dr. Cha said. Possible explanations for these findings include primiparity, the higher rate of multiple pregnancies, and the increased maternal age of this obstetric population.

Dr. Cha's study compared 61 pregnancies resulting from oocyte donation and 127 pregnancies from standard, nondonor in vitro fertilization (controls). Of the donor pregnancies, 36 involved oocytes from siblings and 25 involved oocytes from nonsiblings.

As expected, the donor group had a much higher rate of early pregnancy loss (34% vs. 13%), second-trimester bleeding (13% vs. 1%), and pregnancy-induced hypertension (12.5% vs. 4%), compared with the controls.

Complications in IVF Pregnancies Highest When Nonsibling Donor Oocytes Used

	Percentage of Pregnancies Using:		
	Nonsibling donor oocytes	Sibling donor oocytes	No donor oocytes
Early pregnancy loss	40.0%	28.0%	13.0%
Second-trimester bleeding	29.0%	4.2%	1.0%
Pregnancy-induced hypertension	20.0%	8.0%	3.7%

Note: Based on data from 61 pregnancies resulting from donor IVF and 127 resulting from nondonor IVF.
Source: Dr. Cha

But when the donor group was subdivided into sibling and nonsibling donors, the complications were largely concentrated in the nonsibling donor group. The sibling donor group showed a complication rate that was only slightly (and not statistically significantly) higher than that of the controls, Dr. Cha said. (See table.)

"These data suggest that PIH [pregnancy-induced hypertension] appears to occur more often in pregnancies following oocyte donation from immunologically unrelated donors. Therefore, women who become pregnant after oocyte donation from immunologically unrelated donors should be considered as high risk," she noted. ■

Carrier Couples Have Same Chance of Having Healthy Baby, Despite Miscarriages

Copenhagen — The chances of having a healthy newborn are similar among patients with a history of recurrent miscarriage, regardless of whether they have chromosomal abnormalities, Maureen T.M. Franssen, M.D., reported during the annual meeting of the European Society of Human Reproduction and Embryology.

But carriers of chromosomal abnormalities have a higher risk of repeat miscarriage before eventually achieving their successful pregnancies.

Dr. Franssen of the Center for Reproductive Medicine, Academic Medical Center, Amsterdam, and her associates analyzed 705 couples who had experienced recurrent miscarriage and had been tested for chromosome abnormalities.

Parents who are carriers of chromosomal abnormalities have a higer risk of repeat miscarriage before eventually achieving their successful pregnancy.

A total of 278 couples were identified as carriers, meaning that they had chromosome abnormalities. In carrier couples, products of conception can sometimes have an unbalanced karyotype, resulting in miscarriage, stillbirth, or the birth of a child with major congenital handicaps, she explained.

The study compared the reproductive outcomes of carrier couples with those of the 427 noncarrier couples (controls) over a mean follow-up period of 5.8 years.

A significantly greater percentage of the carrier couples than controls (16% vs. 6%) decided to stop trying to get pregnant. The main reason given by carriers was their risk of giving birth to a viable but unhealthy child. Among controls, the main reason was advanced maternal age.

Both groups had similar rates of successful reproductive outcomes, meaning the birth of a healthy child (83% for carriers and 84% for controls), but the carrier group had a significantly higher rate of miscarriage before a successful pregnancy (49% vs. 30%).

Both groups had similar rates of ectopic pregnancy, stillbirth, and neonatal death. In the carrier group these adverse outcomes were sometimes, but not always, the result of chromosomal abnormalities.

Both groups also had similar rates of pregnancy termination (2%), and in carrier couples two pregnancies were terminated because of an unbalanced structural chromosome abnormality.

Finally, in the 550 pregnancies in the carrier group two children (0.2%) with an unbalanced structural chromosome abnormality and major congenital abnormalities were born. One of these children died immediately after birth.

"In carrier couples …the risk of viable unbalanced offspring is very low," Dr. Franssen said. "These couples have a good prognosis toward successful reproductive outcome, which is similar to noncarrier couples, even though their risk of miscarriage is higher."

But a North American expert in miscarriage said she is concerned that the researchers grouped together all carriers without identifying the causes of miscarriage in each couple.

"We need to address each couple individually because there are couples whose specific chromosome abnormalities increase the likelihood of their pregnancy being unbalanced. But there are also many couples [with chromosome abnormalities] who are having miscarriages for other reasons," she said during an interview.

In a study that she presented last year at the American Society for Reproductive Medicine's annual meeting, Dr. Stephenson showed that among carrier couples, only one-third of miscarriages are due to fetal chromosomal abnormalities, while two-thirds are not. To counsel recurrent miscarriage patients using only parental chromosome analysis without analyzing their products of conception is to disregard a big piece of the puzzle, she said.

For example, in the subgroup of carrier couples whose adverse reproductive outcomes are directly linked to their chromosome abnormalities, the chances of a successful outcome are much lower than in the group as a whole.

"The important part is to send the miscarriage specimen for cytogenetic analysis to try to get as much information as to why the miscarriage occurred. Then we can counsel the couple appropriately," Dr. Stephenson said. ■

Lower β-HCG Threshold For Pregnancies of Unknown Location?

Copenhagen — Roughly 20% of pregnancies currently regarded as failing intrauterine pregnancies may actually be viable, results of a prospective, observational study suggest.

Serum HCG guidelines for recognizing intrauterine pregnancy viability should be revised to reflect this information, Emma Kirk, M.D., said at the annual meeting of the European Society of Human Reproduction and Embryology.

Evidence suggests that about one-third of pregnancies of unknown location (PUL) are actually intrauterine pregnancies that are too small to visualize on transvaginal ultrasound. Guidelines issued by the American Society for Reproductive Medicine advise that in such cases a suboptimal rise in the β-HCG level—defined as a rise of less than 66% over 48 hours or an HCG ratio (HCG at 48 hours to HCG at 0 hours) of less than 1.66—is predictive of nonviability, Dr. Kirk said.

In many cases, such HCG findings would prompt an intervention, such as laparoscopy, to look for a possible ectopic pregnancy, but clinicians should be aware that in some cases this could interrupt a viable pregnancy, said Dr. Kirk of the early pregnancy unit at St. George's Hospital, London.

In a prospective, observational study of 985 PULs in her unit between June 2001 and October 2004, Dr. Kirk's team documented 115 (12%) with suboptimally rising HCG. Of these 115 pregnancies, 31% were eventually identified as intrauterine pregnancies, 43% were ectopics, and 26% were "failing," that is, HCG levels had begun to decrease.

The mean HCG ratio in the intrauterine pregnancy group was 1.46. While most of these pregnancies (81%) eventually failed, 19% remained viable. Among these viable pregnancies, the lowest HCG ratio was 1.33 and the mean was 1.56.

"PULs with suboptimally rising HCG should be managed conservatively because interventions when the HCG ratio is as low as 1.33 could interrupt a viable pregnancy," Dr. Kirk said.

She said the pregnancy unit she works in attempts interventions in such pregnancies only if the patient has symptoms. ■