

# PGD Calls for Realistic and Vigilant Approach

BY JANE SALODOF MACNEIL  
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SCOTTSDALE, ARIZ. — Physicians referring infertile couples for preimplantation genetic diagnosis need to be realistic with their patients and vigilant in assessing the center that will do the testing, according to Estil J. Strawn Jr., M.D.

"You cannot say [to the patient] with any assurance that the baby is going to be perfect and you are going to have a good outcome," Dr. Strawn told practitioners at the annual meeting of the Central Association of Obstetricians and Gynecologists.

Preimplantation genetic diagnosis (PGD) has a proven track record with several thousand births worldwide over the past 15 years, said Dr. Strawn, director of the division of reproductive endocrinology and infertility at the Medical College of Wisconsin in Milwaukee.

Nonetheless, it does not lead to a successful pregnancy more often than not. Dr. Strawn described the U.S. experience as comparable with the 25% pregnancy rate per embryo transfer reported by the European Society for Human Reproduction and Embryology PGD Consortium. In women aged 39 and older, he noted, the rate drops to 12%.

The consortium represents 66 centers, including 10 in the United States, according to Dr. Strawn. He said it reported 4,055 cycles reached the egg retrieval stage from 1999 to 2002 and 70% of those cycles

reached the embryo transfer stage.

Summarizing PGD results at his own center, he said 22 retrievals for 18 patients have produced 156 embryos, 124 of which could be biopsied. Of those, 96 (77%) could be diagnosed by PDG, and 56 of those were deemed to be normal embryos.

The process led to four pregnancies in women up to age 37, but one turned out to be a blighted ovum. Despite more retrievals, transfers, and embryos in women older than 37 years, the result also was four pregnancies, three of which ended in miscarriage.

Two cycles in the younger patients did not result in transfers because aneuploidy was diagnosed in all the embryos. Dr. Strawn said the two women were encouraged to consider egg donation, and both are now pregnant. Though the numbers are small, he said more couples likely will be helped as technology improves.

Currently, most centers are screening for 6-8 chromosomes (13, 15, 16, 18, 21, 22, X, and Y), Dr. Strawn said. "What about the other 15 pairs?" he asked, noting that an embryo could carry a genetic defect for which PGD screening is not yet available.

Commonly screened conditions include Duchenne's and Becker's muscular dystrophy, hemophilia A, X-linked mental re-

tardation, cystic fibrosis, spinal muscular atrophy, thalassemia, myotonic dystrophy, Huntington's disease, and balanced translocations, according to a list he presented from the European consortium.

If a couple decides to try PGD after being advised of its limitations, Dr. Strawn urged physicians to investigate a center's resources and standards before making a referral. "You need to look at quality control in your center," he said, emphasizing that no certifying body regulates PGD.

The process is complex and prone to pitfalls such as contamination, Dr. Strawn said. "PGD is limited by the extreme complexity of setting up appropriate standardized accurate assays for single gene disorders." Even if the clinician is experienced, he warned that tests from a single cell can be difficult to interpret. He cited false-negative rates of 1%-2% in the medical literature and said false positives can be as high as 10% depending on the criteria used. In some cases, he said, uncer-

tainty can lead to good embryos being discarded.

Express mailing of specimens is an unresolved issue for Dr. Strawn. About half of centers mail specimens to outside laboratories, according to a telephone survey he conducted of all U.S. centers performing at least 200 cycles of in vitro fertilization in 2001. Among 101 programs that responded, 65 offered PGD; only 30 of these did their own analyses on site.

Staffing is another issue he urged referring physicians to investigate. Citing his own center's experience in developing its PGD program, he estimated that 1-2 years of preparation go into offering the service.

"Our people practiced in mouse embryos before we went live," he said, noting that a high level of expertise is required for those doing the procedure and analyzing the results.

Similarly, Dr. Strawn recommended asking not only whether the center offers genetic counseling, but also about the training of the person doing the counseling. "A lot of people are offering PGD because they want to compete," he said, urging physicians to look for a team effort: "It's not just one doctor who says he can do ... everything." ■

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## Education May Overcome Patient Resistance to Single Embryo Transfer

MONTREAL — Patient resistance to having a single embryo transferred after in vitro fertilization may be overcome by education, according to Christopher Newton, Ph.D.

Patient goals in requesting multiple embryo transfer may be quite different, however, so their educational needs may vary. Some patients are focused on simply increasing their chances of conceiving. "They think more is better in terms of getting pregnant," Dr. Newton, a psychologist at London (Ontario) Health Sciences Center, said in an interview.

But there is also a subset of patients who would prefer a twin pregnancy to a singleton one, he reported at the joint annual meeting of the American Society for Reproductive Medicine and the Canadian Fertility and Andrology Society.

Dr. Newton surveyed 79 female IVF patients and 53 male partners about their attitudes toward single embryo transfer (SET). He found that 75% of participants rated double embryo transfer (DET) as highly desirable, and 72% rated a twin pregnancy as highly desirable.

Some participants preferred DET to SET because they saw it as a means to increase their chances of pregnancy; others considered DET as a way of optimizing their chance of conceiving twins.

When provided with accurate information about the risks associated with twin

pregnancies and the success rates of SET versus DET, the participants' desire for twins decreased and they reported more acceptance of SET. However, women remained more resistant to SET than men.

A separate study presented at the meeting found that infertile women are twice as likely as fertile women to prefer a multiple pregnancy over a singleton pregnancy.

A comparison of 440 general gynecology patients (fertile) with 464 infertility patients found that 20% of the latter expressed a desire for a multiple pregnancy, compared with 10% of the fertile group, reported lead investigator Ginny L. Ryan, M.D., of the University of Iowa, Iowa City.

In the combined population, a lack of knowledge about the risks of a multiple pregnancy along with nulliparity and a diagnosis of infertility independently predicted a desire for multiples.

"We've now started an educational campaign to see if we're impacting their knowledge," Dr. Ryan said in an interview.

"We started a mandatory single embryo transfer policy in our best responders last year, so we're in a luxurious position where we can actually tell our patients that this isn't going to decrease their pregnancy rate and it will greatly decrease their multiple rate."

—Kate Johnson

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