

# SET Fine With Preimplantation Genetic Diagnosis

*Success rates were comparable to those of double embryo transfer in most women who needed PGD.*

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PRAGUE — Single embryo transfer does not lower success rates compared to double embryo transfer in most patients who need preimplantation genetic diagnosis, according to a study presented at the annual meeting of the European Society of Human Reproduction and Embryology.

However, one subset of patients needing preimplantation genetic diagnosis (PGD)—those with translocations—may need more than one embryo transferred to achieve adequate pregnancy and delivery rates, reported Dr. Patricio Donoso of

University Hospital, Dutch-speaking Free University Brussels, Belgium.

It has been suggested that patients undergoing PGD may have a smaller chance of getting pregnant after in vitro fertilization (IVF) than do patients who do not undergo PGD, Dr. Donoso said in an interview. Although there is still some debate about whether the PGD biopsy is slightly harmful to the embryo, the main reason for concern is that PGD often identifies many embryos as unsuitable for transfer. “In regular IVF, we usually select the most morphologically normal-looking embryo for transfer. In PGD patients, the healthy embryo is not necessarily the one with the

best morphology, so that makes embryo selection more difficult,” he said.

His retrospective study of PGD patients was performed both before and after a Belgian law mandated single embryo transfer (SET) in all women under 36 years of age undergoing their first trial of IVF. The study included 50 PGD patients who received double embryo transfer (DET) between 2002 and 2003 (before the law was implemented) and 55 PGD patients who received SET after implementation of the law in July 2004.

Most patients had experienced recurrent miscarriage, and indications for PGD included monogenic disorders, such as myotonic dystrophy and cystic fibrosis, and translocations.

The study found no statistical difference in delivery rates between the DET

and SET groups overall (32% vs. 25.5%); the rate of multiple pregnancies was significantly different—31% in the DET group and none in the SET group.

However, in the subgroup of patients with translocations, among those who received only one embryo there was a reduced delivery rate compared to those who received DET (18% vs. 40%). Although this trend did not reach statistical significance, Dr. Donoso said he expects it will with the addition of more patients. “If this trend continues, maybe we will have to discuss transferring more than one embryo in these patients, which would mean changing the law in Belgium,” said Dr. Donoso.

However, he said collecting a big enough series to explore this trend will be very difficult, because it is not a frequently occurring pathology. ■

## ‘Vanishing Twin’ Linked to Poor Obstetrical Outcomes

PRAGUE — Among babies conceived through assisted reproductive technologies, singletons that survive after the intrauterine demise of a twin have poorer obstetrical outcomes than do those that never had a twin.

The so-called vanishing twin effect can be seen in the surviving twin’s smaller size for gestational age, lower birth weight, and younger gestational age at delivery, compared with singleton babies. Moreover, the adverse effects of the twin’s demise rise with increasing gestational age, Dr. Anja Pinborg reported at the annual meeting of the European Society of Human Reproduction and Embryology.

She presented a retrospective cohort study involving 11 fertility clinics and 72% of the babies conceived via assisted reproductive technologies (ART) in Denmark between 1995 and 2001. Among these, 5,237 babies were singletons, and 3,678 were twins. The remaining 642 were survivors of a vanishing twin—in other words, two fetuses initially had been identified, but there was only one live birth.

A total of 66% of the vanished twins had disappeared before the eighth week of gestation, 29% had disappeared between 8 and 22 weeks’ gestation, and among 5% the demise had occurred after 22 weeks and was classified as a stillbirth. ■

Surviving twins were more likely to be small for gestational age (SGA)—meaning a birth weight that was below the 10th percentile for that age, compared with singletons (5.3% vs. 3.6%). After controlling for maternal age, parity, and child gender, having a vanishing twin was the only significant predictor of SGA in singleton births (odds ratio 2.1). Among twins who had both survived, the rate of SGA was 13%, she said.

Survivors of a vanishing twin were more likely to be SGA if the twin’s demise happened later in the pregnancy.

Similarly, mean gestational age was greater in singletons (39.5 weeks), compared with survivors.

And among babies delivered at term, low birth weight (defined as less than 2,500 g) was more frequent in survivors of a vanishing twin (3.8%), compared with singletons (2.3%), she said.

The magnitude of this effect increased with the gestational age at the time of the twin’s demise.

“Vanishing twin is one of the reasons for poorer obstetrical outcome among ART singletons compared to singletons conceived naturally,” Dr. Pinborg explained, adding that this further supports the argument for elective single embryo transfer. ■

## DHEA May Benefit Diminished Ovarian Reserve, Early Data Say

PRAGUE — Women with severely diminished ovarian reserve can experience dramatic improvements in ovarian function, pregnancy rates, and euploidy rates when treated with dehydroepiandrosterone, Dr. Norbert Gleicher reported at the annual meeting of the European Society of Human Reproduction and Embryology.

“We have very small numbers that we are presenting with great caution, but the benefits of DHEA are beginning to become apparent,” said Dr. Gleicher, who practices at a fertility center in New York.

“Over 90% of our DHEA patients have come to us from other programs with a

A 42-year-old woman with diminished ovarian reserve began taking the supplement without the physicians’ knowledge during her IVF treatment. Before she started taking DHEA, the woman’s estradiol level was 1,211 pmol/mL, but it rose to more than 18,000 pmol/mL after 7 months of DHEA treatment, said Dr. Gleicher. The patient underwent eight subsequent IVF cycles with DHEA treatment, resulting in a dramatic improvement in ovarian response and a total of 66 embryos. The woman did not get pregnant because she did not have any embryos transferred, choosing to cryopreserve them for future use, said Dr. Gleicher.

In another study, now in press, Dr. Gleicher compared 23 IVF patients before and after treatment with DHEA and noted a significant increase in fertilized oocytes after patients were treated (39% vs. 67%). “We did not look at pregnancy rates in this study because the numbers were too small, but this study confirms that DHEA improves egg and embryo numbers and egg and embryo quality,” he said.

Furthermore, a separate study comparing 88 DHEA-treated IVF patients with 99 controls (IVF patients who were not treated with DHEA) found higher clinical pregnancy rates (27% vs. 9%) and higher implantation rates (9% vs. 3%) in the treated group.

The study also found that preimplantation genetic diagnosis performed on the patients’ embryos identified a significantly higher rate of aneuploidy in the non-DHEA-treated embryos (78%) compared with that of the treated embryos (57%), he added.

IVF treatment with DHEA in his fertility center involves 4 months of DHEA prior to IVF, during which time he has noted “an unexpectedly large number of spontaneous conceptions,” within the first 2 months of DHEA treatment, Dr. Gleicher said. ■



**‘We have very small numbers ... but the benefits of DHEA are beginning to become apparent.’**

**DR. GLEICHER**

recommendation for egg donation. They are not only women with diminished ovarian reserve, they are women with horribly diminished ovarian reserve—and still we have a third of them getting pregnant. It’s remarkable.”

Several studies he presented at the meeting suggest that in women with diminished ovarian reserve, DHEA—a mild androgen supplement, given at a dosage of 25 mg three times a day—can improve spontaneous conception rates and in vitro fertilization (IVF) outcomes. “It seems to improve not just quantity but quality of oocytes,” said Dr. Gleicher in an interview.

In a case study published last year, Dr. Gleicher and his colleagues reported on their first experience with the use of DHEA in the context of IVF (Fertil. Steril. 2005;84:756.e1-3).

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