Europe's Pregnancy Rates Hold in Move to SET

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PRAGUE — Europe maintained its in vitro fertilization success rates in 2003 compared with the previous year despite a reduction in multiple pregnancies, according to data presented at the annual meeting of the European Society of Human Reproduction and Embryology.

The European in vitro fertilization (IVF) clinical pregnancy rate was 29.5% per embryo transfer, reported Dr. Anders Nyboe Andersen, coordinator of the European IVF Monitoring (EIM) Consortium.

In comparison, the latest figures (2004) from the United States' Society for Assisted Reproductive Technology (SART) show a 40.6% pregnancy rate per embryo transfer, said California fertility expert Dr. David Adamson in an interview.

In the United States, that figure translates to a live birth rate of roughly 33% per embryo transfer across all age groups (42.5% in women under age 35 years), said Dr. Adamson. The European live birth rate per embryo transfer is not known because the EIM Consortium includes 28 European countries and does not routinely follow IVF patients beyond the ultrasound confirmation of a gestational sac, said Dr. Andersen, also of the University of Copenhagen. However, assuming similar rates of miscarriage in Europe and the United States, the European live birth rate per embryo transfer would be roughly 24%. (In its 2002 World Report on IVF, the International Committee for Monitoring Assisted Reproduction reports an IVF delivery rate of 17% for Europe and 25% for the United States.)

Although this calculation suggests Europe has lower IVF success rates compared with the United States, Europe also reports lower multiple pregnancy rates—but an exact comparison is difficult to make. The latest figures from the EIM Consortium show that 22% of all IVF deliveries in Europe

were twins and 1.1% were triplets (down from a twin rate of 23% and a triplet rate of 1.3% the previous year). However, given the fact that the consortium does not keep a final tally of all IVF deliveries, its figure on multiple birth rates can only be an estimate. In comparison, the United States records multiple pregnancies, not multiple births (which tend to be lower because of the high rate of miscarriage) and last year reported a twin pregnancy rate of 27% and a 4.5% rate of triplet and higher-order pregnancies, according to Dr. William Gibbons, president of SART.

Europe's reportedly lower multiple pregnancy rates are attributed to its transition toward single embryo transfer (SET), and a continuing trend toward the transfer of fewer embryos. Overall, the 28 European countries in the EIM Consortium reported a 16% rate of SET in their IVF cycles, said Dr. Nyboe Andersen. This is in contrast to an *elective* SET rate of 1.2% in the United States, according to SART—although the overall SET rate is presumed to be higher, since other U.S. patients receive SET non-electively because they have only one good embryo to transfer. According to the 2002 World Report on IVF, the average number of embryos transferred in European patients was 2.2. vs. 2.9 in the United States.

Guidelines released at the end of 2004 from the American Society for Reproductive Medicine and SART recommended for the first time that SET should be considered "in patients with the most favorable prognosis" (Fertil. Steril. 2004;82:773-4), and consequences of those guidelines may be reflected in the 2005 data. However, SET is a hard sell in the United States compared with Europe, because while many European countries provide some coverage for IVF treatment, most U.S. patients pay for it themselves.

"There is a certain amount of fear among [U.S.] centers that if they do SET, they may see a dramatic fall in pregnancy rates, which in turn may cause patients to go elsewhere for treatment," said Dr. Bradley Van Voorhis, of the University of Iowa Hospitals and Clinics in Iowa City.

Indeed, the world's first randomized trial comparing SET with double embryo transfer (DET) in an unselected group of women did much to fuel such fears (Hum. Reprod. 2006;21:338-43). Investigators in the Netherlands found that although SET reduced multiple pregnancies in unselected patients, it also significantly reduced the overall pregnancy rate compared with DET (21.4% vs. 40.3%), while in a more select group of patients (younger and with at least one good-quality embryo), the pregnancy rates in the two groups did not differ significantly (33% for SET vs. 30% for DET).

Building on this experience, Dr. Van Voorhis' clinic implemented a mandatory SET policy 2 years ago for select women with a good prognosis and high risk for multiple pregnancy, and noted no decline in success rates.

But achieving this kind of success for SET—maintaining pregnancy rates while reducing the number of embryos transferred—involves a complex art of balancing safety and success, choosing which patients can receive fewer embryos, and choosing which embryos are most likely to result in a pregnancy, said Dr. Adamson.

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"SET is a very good and important strategy, and I think that we need to do more of it in the United States in order to reduce the rate of multiple pregnancies," he said. "But this is not something that works for all patients, and that really needs to be strongly emphasized. It's not possible to make a single rule that applies to all patients; we certainly do not believe that in the United States. … We don't believe that regulation by the government which tells patients how they should make reproductive choices is the appropriate thing to do."

That type of government regulation is largely responsible for Europe's high SET rate. The free IVF treatment provided by many European countries comes with legislative strings attached that mandate SET or severely restrict the number of embryos placed in certain women. European physicians have feared that this approach could limit pregnancy, and this is generally assumed to be one of the reasons for Europe's lower overall IVF pregnancy rate.

But certain European countries such as Sweden appear to have mastered the art of using SET effectively. "In Sweden we have shown no overall decline in pregnancy rates," said Dr. Karl Nygren, chair of the EIM Consortium. "It has been possible to maintain the pregnancy rate even with a dramatic shift to 70% SET in Sweden, and we have reduced our twin pregnancy rate to 5%," Dr. Nygren said. The consortium reported a Swedish pregnancy rate of roughly 34% per embryo transfer, which is significantly lower than the U.S. rate of 40.6%. ■