



STATE OF THE ART

In Vitro Fertilizations and Multiple Gestations

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Twins occur spontaneously at a rate of 1.2 percent, and triplets about 0.02 percent of deliveries. After the arrival of assisted reproductive technologies (ART), the rate of multiple pregnancies has increased (up to 37 percent of deliveries in patients that conceived with the help of ART). Today, one-third of twins, three-fourths of triplets, and nearly all higher order multiple pregnancies are the result of infertility treatments. Preeclampsia, gestational diabetes, anemia, operative delivery, postpartum hemorrhage and preterm labor are complications associated with this condition.

Increasing the pregnancy rates while decreasing the incidence of multiple pregnancies should be the objective of every in vitro fertilization (IVF) program. The number of embryos transferred could be reduced in order to minimize the chance of undesirable multiple gestation. There are currently no regulations that stipulate the number of embryos to transfer after an assisted reproductive procedure. The American Society for Reproductive Medicine released in June 1997 a Committee Opinion that "offers consensus-based guidance" relative to the number of embryos transferred. In consideration of several clinical conditions (e.g., patient age, embryo quality, cryopreservation opportunities), these guidelines may be modified. It is clearly stated that an agreement between the physician and the couple should be reached about the number of embryos to transfer. If the program does not have their own data, these guidelines recommend the transfer of no more than five embryos in patients with bad prognosis (female older than 40 or multiple failed cycles). Infertility specialists face a dilemma when trying to

establish the quality of embryos since an adequate system has yet to be found. Germany, United Kingdom and Belgium are some of the countries where federal legislation strictly limits the number of embryos for transfer to three.

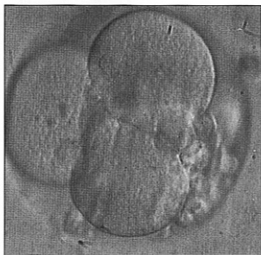
Some of the factors that influence physicians' decisions are pressure from the patients, high costs of the infertility treatment, low embryo implantation rate (10-20 percent) and limitations imposed by health care insurance. Couples may seek a program with a higher success rate without attention to the risks associated with multiple gestation. A recent report published jointly by The Center for Disease Control and Prevention and The American Society for Reproductive Medicine listed a national summary of ART success rates reported by fertility clinics in 1995. In patients aged 35 and 39, the average number of embryos transferred was 4.0, with a multiple pregnancy rate of 7.8 percent (per transfer, not per pregnancy). In our program, we averaged 3.4 embryos per transfer, with a multiple gestation rate of only 3.6 percent, and without compromising our success rate.

We should mention that the increased rate of multiple pregnancies is also associated with ovulation induction protocols without IVF. In this case, if we detect an excessive number of follicles, we have the option to avoid administering human chorionic gonadotropin and cancel the cycle. Another option is to proceed with oocyte retrieval and IVF. Patients also have an option to decrease the number of fetuses. Multifetal pregnancy reduction is the selective intrathoracic injection of potassium chloride or other substances to reduce the number of

fetuses. The associated risk of losing the pregnancy is about 10 percent. The emotional and ethical conflicts experienced by the infertile couple facing this decision can be considerable.

Guidelines for the entire practice of IVF, and not only on the number of embryos allowed to be transferred should be implemented. These guidelines will help us reach the goal of high singleton pregnancy rates with a reduction of multiple deliveries. LM

F ig. 1 Blastocyst, 5 day embryo. Four cells embryo
—Photo courtesy of Alberto Carrillo, PhD



Suggested Readings

Guidelines on Number of Embryos Transferred. A Practice Committee Report. American Society for Reproductive Medicine. June 1997.

1995 *Assisted Reproductive Technology Success Rates.* Centers for Disease Control and Prevention. American Society for Reproductive Medicine.