

How Many Embryos Should Be Transferred? The Relevance of Parity and Obstetric History

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The use of assisted reproductive technologies has been associated with a rise in multiple pregnancy rates [1,2] and their associated complications, mainly preterm delivery (PTD), low birth rate, and complications of prematurity. Much effort has thus been made by fertility organizations to regulate the number of embryos transferred in order to reduce multiple pregnancies [3-5]. However, it is debatable whether this strategy will lead to reduced pregnancy rates per embryo transfer [6]. Also, for some patients, twin deliveries may actually represent a favorable and cost-effective treatment outcome [7], decreasing cost and time to reach their reproductive potential and family-size needs. The decision as to how many embryos to transfer to the uterus is therefore a complex decision influenced by a variety of clinical parameters. The aim is to balance these opposing objectives of maximizing pregnancy rates while trying at the same time to avoid multiple pregnancies and complications of prematurity. In fact, some decision makers consider outcomes other than a successful delivery of a singleton newborn at term to be treatment failures.

In the current issue of *IMAJ*, Goldberg and co-authors [8] studied the role of the patient's obstetric history in this decision-making process. This is an important consideration that is not addressed in the current guidelines published by the Israeli Fertility Society in April 2010. Interestingly, these guidelines, which help the clinician decide on the number of

embryos to transfer, account only for the patient's age, the embryo quality, whether embryos are fresh or frozen, and whether or not donor eggs are used. The authors conducted a retrospective study in which they collected data from 1651 twin pregnancies that were delivered after 24 weeks, and analyzed obstetrics parameters such as parity, mode of conception (IVF vs. spontaneous), gestational age and birthweight at delivery, incidence of preeclampsia, admission to the neonatal intensive care unit (NICU), and Apgar scores.

The authors found that risks for PTD (< 37 weeks) and early PTD (< 32 weeks) were significantly lower with increasing parity. The prevalence of preeclampsia and NICU admission were also higher in primiparous as compared to multiparous patients. Importantly, the IVF procedure per se was not a significant risk factor for PTD. The risk for prematurity was significantly lower in twin pregnancies in women who had previous term delivery and decreased further after two or more previous term deliveries. The authors therefore recommend that their findings be considered when deciding on the number of embryos to be transferred in IVF. These findings [8] are also corroborated by other studies [9,10] which demonstrated increased rates of PTD, preeclampsia and other complications among primiparous as compared to multiparous women.

We agree that the data presented here indicate that primiparity should be addressed as an independent risk factor for PTD, and multiparity as a protective one. It might be worthwhile, therefore, to add parity, another clinical factor to be considered when deciding on the amount of embryos to transfer. We suggest limiting

the number of embryos transferred in nulliparous women, while being more permissive in multiparous women. We encourage decision makers to add this important consideration to the current guidelines of the Israeli Fertilization Association regulating the amount of embryos to be transferred during IVF. We are also encouraged by the data indicating that ART and IVF are not independent risk factors for PTD, and that it is the multiple pregnancy that leads to this serious obstetric complication.

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