AlbanyIVF
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MULTIPLE PREGNANCY AND SELECTIVE FETAL REDUCTION INFORMATION

Since the advent of assisted reproductive technology (ART), multiple pregnancies, which constitute a significant risk to both fetuses and the mother, have become increasingly common. The fraction of multiple pregnancies accounted for by ART continues to increase, from 28% in 1986 to almost 50% in 1993. The trend is even more significant with higher order multiple pregnancies (triplets and up), which now constitute from 0.1% to 0.3% of all pregnancies.

First, multiple pregnancies are known to be associated with and increased rate of maternal and perinatal complications. One example is the incidence of ante partum complications such as preterm labor and, intrauterine growth retardation, intrauterine fetal demise (IUFD), and preeclampsia/eclampsia, which reportedly is as high as 83%, compared with approximately 32% for singleton gestations.

Medical concerns aside, the socioeconomic impact of providing care for such high-risk pregnancies cannot be underestimated. Between singletons and twins alone, there is a marked difference in expenses per newborn infant (an estimated $9,845 and $18,974, respectively, in 1991), and the cost increase proportionally with higher-order multifetal pregnancies ($36,588 per triplet, for example).

From 8% to 20% of multiple pregnancies reduce spontaneously by the end of the first trimester. When the phenomenon of the "vanishing twin" occurs prior to 14 weeks' gestation, it has no adverse effect on the remaining fetus nor will a subsequent evaluation show any evidence of multiple gestation.

If the higher-order gestation does not reduce spontaneously, selective multifetal reduction (SFR) can be offered as an option. This is an abortion procedure where one or more babies are aborted in order to improve perinatal outcome for the remaining fetuses.

Timing, technique, and outcome: Multifetal reduction is usually carried out in the first trimester. Under ultrasound guidance, one or more fetuses are injected with potassium chloride. After fetal reduction, there is a 2-10% chance that the woman will lose the entire pregnancy prior to 20 weeks' gestation. The risk may be slightly higher if the presenting fetus is terminated. The original number of fetuses, the route of the needle as well as the number terminated may influence the likelihood and the rate of pregnancy loss.

The issue of procedure-related risk is confounded further by recent literature suggesting that the risk of miscarriage prior to 20 weeks' gestation for IVF multiple pregnancies may be higher than for spontaneous multiple pregnancies.

Weighing risks vs. benefits: Multifetal reduction in higher-order multiple gestations has many benefits for the remaining fetuses, including substantially increasing the duration of pregnancy, reducing the incidence of pre-maturity, increasing birth weight, reducing neonatal mortality, and shortening the neonatal intensive care stay. As the number of fetuses increases so, too, do the risks of preterm labor and delivery: for singletons, the average length of gestation is 40 weeks, compared with 36 weeks for twins, 33 weeks for triplets, and about 29 weeks for quadruplets. Every addition viable fetus present in the first trimester shortens the duration of gestation by about 3.6 weeks. Each fetus reduced, either spontaneously or medically, can potentially prolong gestation by about 3 weeks.

In quadruplet and higher-order pregnancies, which have high rates of neonatal mortality and morbidity, the advantages of SFR outweigh the risks of the procedure.

Whether triplet pregnancies benefit from selective reduction to twins also is the subject of ongoing debate. Most studies done to date suggest an improved perinatal outcome for triplet pregnancies reduced to twins compared with non-reduced triplet pregnancies. The evidence suggests that reduction is associated with a lower incidence of premature delivery (54% versus 87% to 92%), higher birth weight (average increase of 380 to 450 g/fetus), shorter stay in neonatal intensive care (21 versus 8 days), and a lower rate of perinatal mortality (33 per 1,000 deliveries versus 51-93 per 1,000 births).

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Other studies, however, have shown a trend, but no clear difference in neonatal and maternal complications between triplet pregnancies and matched twins. Women whose pregnancies are reduced to twins remain at risk for premature delivery compared with those who have spontaneous twin pregnancies: up to 31% deliver by 28 weeks' gestation and only 50% carry to full term. Whether risk of IUGR is increased in reduced pregnancies remains unclear. Melgar and colleagues reported that twins resulting from multifetal reduction have a slightly lower mean birth weight than do non reduced twins (1,842 g versus 2,248 g, respectively). This difference however, appeared to be correlated with lower gestational age at delivery rather than with the reduction procedure itself. The authors concluded that the only measurable benefit of SFR from triplets to twins would be "social and economic, but not clinical." While perinatal outcome have improved for triplet pregnancies managed expectantly, multifetal reduction to twins nevertheless still appears to result in a more satisfactory pregnancy outcome for the remaining fetuses. There are no data on the long-term emotional impact of SFR on mothers who either have successful procedures, nor those who go on to lose their pregnancy entirely.

Multiple gestations, by definition, are associated with and increase risk or adverse outcome, yet all such pregnancies are not at equally high risk. Obstetric intervention and an improved perinatal outcome may be possible with an appropriate antenatal vigilance and early diagnosis of complications.