Clinicians may need to individualize protocols for couples based on their risks of multiple pregnancies. Furthermore, cryopreservation protocols have to be optimized and standardized.

REFERENCES


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Introduction

The progress in assisted reproduction technologies over the last 25 years has led to a tremendous success in obtaining pregnancies and deliveries in different categories of infertility. The success of these technologies should not be judged by only achieving a pregnancy but what has to be taken into consideration is the safe obstetrical and neonatal outcomes with the objective of the delivery of healthy baby which gives true reflection of a successful practice.

The main factor in IVF programme increasing obstetrical and perinatal risks is the high rate of multiple pregnancies. This is due to the widely practiced policy of transferring more than one or two embryos in order to compensate for the low implantation rate and achieve higher pregnancy rate (PR) which may affect negatively the final outcome. It has been approved that multiple gestation carry several risks for both the fetuses and the mother. Maternal complications are mainly pregnancy induced hypertension, preterm labor, antepartum hemorrhage and surgical delivery. Adverse neonatal outcomes involve preterm birth, low weight and
small for gestational age, all are major risk factors for neurodevelopmental disorders (1).

Considering these unfavorable outcomes more attention has been paid throughout the world for reporting different parameters of IVF programme including multiple gestations. In European registry the multiple pregnancy rate was 26.4% (twin 24.4%, high order multiples 2%)(2) while it was 37.8% (twin 30.8%, high order multiples 7%) in USA data (3). In the Middle East, the first IVF registry for the year 2000 (4) determined that 32.6% of IVF pregnancies were multiples (twin 27.4%, high order multiples 5.2%). This significant incidence of multiple gestation directed efforts especially by European countries towards reducing the number of embryos transferred. The policy of transferring only two embryos in some reports (5) avoided high order multiple pregnancies but still having high twin PR. Therefore more trends shifted to elective single embryo transfer (eSET) which was capable to decrease or eliminate totally the risk of twinning without affecting the overall PR (6,7). Another study (8) has shown that PR dropped significantly after SET but this was the case when only a single embryo was available losing the advantage of embryo selection. Other policies tried to avoid multiples through extending embryo culture to the blastocyst stage. Single blastocyst transfer proved to be effective in eliminating multiple births while maintaining high PR in a selected group of women (9).

Concerning the issue of multiple gestation associated with IVF in our area, real attempts to solve the problem are lacking. This needs a deep insight to establish new guidelines into clinical practice.

**Tackling the problem of multiple gestations: Issues to be considered**

**Changing the policy of embryo transfer**

Reducing the number of transferred embryos forms the main effective strategy in minimizing multiple pregnancies in IVF. Although SET is becoming an accepted procedure in certain countries, it maybe difficult to reach agreement in applying this as a starting strategy due to physician concern to keep the stable PR. In addition, in countries who adopted this policy, IVF treatment is covered by the health care system while in the Middle East costs of IVF are paid by the patients. Therefore, it would appear prudent to start transferring two embryos to ensure that acceptable implantation and PR can be established before introducing SET. To have the best effectiveness a proper patient selection and embryo quality scoring should be considered. Double ET is to be applied in favorable prognosis groups (Female age < 35 years, first two IVF trials, previous success with IVF and good quality embryos). However under certain circumstances, higher number of embryos for transfer is allowed. The ability to avoid the most risky multiplicity (triplet or more) with maintaining the PR and the expanded experience with practicing this trend will encourage the physicians and assure patients, helping to broaden the scale for applying eSET to eliminate the twinning rate. Another strategy in this regard is extending embryo culture to blastocyst stage which is effective in identifying the most viable embryos in a given cohort. The fact that the implantation rate with use of top-scoring blastocyst is substantially higher than that achieved with cleavage stage embryos (10) makes the introduction of single blastocyst transfer a potentially viable solution in eliminating twins and preserving the high PR. It is worth to notice that the availability of effective cryopreservation system will offer the patients frozen-thawed embryo transfer opportunity which increases the overall PR per initiated IVF cycle in single or double ET (11).

**Multi fetal pregnancy reduction**

Currently, many groups practice multifetal pregnancy reduction in pregnancies with three or more fetuses in an effort to increase the likelihood of a successful pregnancy. Embryo reductions, still carry 10% risk of miscarriage (12) as well as some risks for the new born (13). Moreover this procedure is psychologically and morally harmful for couples who so wanted children. In fact, this can be avoided by limiting the number of transferred embryos.

**The physician’s responsibility**

Multiple pregnancies in IVF is iatrogenic and it is
the physician's responsibility to minimize this undesirable outcome. The priority to avoid multiples should be given over the increase in PRs as well as over multifetal reduction policy to ensure the best possible outcome.

Patient Counseling

The emotional stress of infertility, the financial burdens and the lack of knowledge on the risks of multiple gestations make a significant demand among infertile patients for transferring higher number of embryos with the sequelae of multiples. In view of these factors, couples often resist discussion of multiple pregnancy issue during the psychological consultation because they focus only on the goal of getting pregnant and minimize the concern about the welfare of the mother and infant. Therefore, offering guidance towards solving this concern with proper counseling to illustrate the risk of multiples and their contribution to variant problems is essential. The association of the policy of reducing embryo number for transfer with successful outcome as well as its cost effectiveness compared with multiple pregnancies should be stressed on.

Conclusion

- We should have a consensus within the IVF community on an urgent need for a reduction in multiples in IVF programme.
- Encouraging ART units to implement gradually the strategy suggested starting with double ET or single blastocyst transfer with establishment of good cryopreservation and thawing technique.
- Achieving the success of this policy should start from persuading the couples through proper scientific counseling.
- To break the fears of physicians regarding keeping stable PR, ideal lab conditions and scoring system to be able to select top quality embryos is essential.
- Singleton term gestation live birth rate per IVF cycle should be considered as the most relevant standard of success in ART and to be reported by IVF registries.

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