

SASREG Embryo transfer guidelines

Introduction

Success in assisted reproductive techniques (ART) should be defined as a healthy term baby and not only based on pregnancy rates and live birth rates. Reproductive Medicine Specialists should aim at reducing the perinatal morbidity and mortality associated with ART, by reducing multiple pregnancy rates. Multiple pregnancies lead to increased financial burden on Obstetric and neonatal care services. Adverse psychosocial effects such as increased anxiety, depression and increased marital dissatisfaction after twin birth have been described (1). Registry studies provide unequivocal evidence of both short and long-term health risks in ART offspring born from multiple pregnancies. Single embryo transfer and vitrification now provide the means to reduce the risks.

Elective single embryo transfer (e SET)

There is a trend towards elective single embryo transfer in good prognosis patients. A conflict exists between promoting elective single embryo transfer and ensuring high success rates. These results due to increased anxiety for both doctors and patients regarding failed treatment and increased costs of repeat treatments. Randomised controlled trials mostly published before 2013, on good prognosis patients, reported increased success rates with dual embryo transfer (2, 3, 4). The outcomes of these studies were purely based on pregnancy rates and livebirth rates. Very few studies have compared single blastocyst transfer versus double blastocyst transfer. A Cochrane review in 2013, which included 14 RCTs showed no difference in cumulative livebirth rates with single dual embryo transfer versus 2 SET, either with 2 fresh IVF cycles or a fresh IVF cycle followed by a frozen embryo transfer (5).

Is it justified to transfer more than one embryo in oocyte donation?

Most women undergoing egg donation treatment are over 40, which increases pregnancy risks. A pilot RCT by Elisabeth Clua et al, on patients undergoing egg donation treatment with at least 2 good quality embryos compared the pregnancy rates and livebirth rates with elective single embryo transfer versus elective dual embryo transfer. The cumulative pregnancy rates (e SET 73.5% and e DET 77.4% RR 0.95,95%CI 0.72-1.25) and livebirth rates (e SET 58.8% and e DET 61.3% RR0.96,95%CI 0.64-1.42) were similar in both groups. The twin pregnancy rate, 47.7% e DET and 0% e SET. The study was stopped early due to the unacceptable high twin pregnancy rate with the dual embryo transfer arm of the study (6).

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IVF twin pregnancies constitute a negative outcome.

There is enough evidence showing poor perinatal outcomes with IVF twin pregnancies.

5 studies of good quality have been reviewed and all these studies had similar conclusions.

These mainly include increased preterm delivery, Low Birth Weight, Pre-eclampsia, increase C/S deliveries and stillbirths with IVF twin pregnancies (7, 8, 9, 10, 11).

SASREG embryo transfer guidelines

Guidelines from other regulatory bodies such as ASRM and NICE guidelines have been reviewed (12, 13). The main challenge is that there are few studies from Africa.

IVF treatment is mostly patient funded in South Africa. The other challenge for Reproductive Medicine Specialists in South Africa is that of patients who travel to South Africa for IVF treatment from other countries. This increases the costs of treatment

as these patients have to include costs for accommodation and travelling.

Considerations on number of embryos to transfer

1. The age of the patient
2. Own oocytes or donor oocytes
3. Favourable factors: good ovarian reserve, 2 or more good quality embryos available for freezing, previous successful IVF treatment cycle.
4. Pregnancy risk factors: Increased BMI, increased age, comorbidities and previous poor obstetric history.

SASREG embryo transfer guidelines

Egg donation	Single embryo transfer
Women <37	Single embryo transfer If no top-quality embryo available for transfer, can transfer two embryos, provided there are no increased obstetric risk factors.
Women 37-39	2 embryos, provided there are no increased obstetric risk factors, unless patient requests single embryo transfer.
Women 40-42	2 embryos

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All embryo transfers should be performed under ultrasound guidance (10 RCTs, Grade A)

Use of a soft embryo transfer catheter improves pregnancy and LBR (3 RCT, 4 Cohort, Grade B)

Mucus should be removed from the cervix (Grade B)

Placement of the transfer catheter tip in the upper or middle cavity greater than 1cm from the fundus is recommended (Grade B)

Immediate ambulation after the embryo transfer is recommended (Grade A)

Conclusion

There is compelling evidence that IVF multiple pregnancies result in increased perinatal morbidity and mortality. A shift is required from pushing for high pregnancy rates towards aiming for healthy term babies is required. When transferring more than one embryo, patients should be informed of risks associated with IVF multiple pregnancies and these risks should be included in the consent form.

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