

Risk of Multiple Pregnancies

The ultimate goal of in-vitro fertilisation (IVF) treatment is to enable couples to conceive a single healthy baby, born at term.

In reality, it is not uncommon to find that some women who undergo IVF, give birth to twins. Multiple pregnancy is the most common treatment-related adverse outcome, and is discouraged, because it puts the mother and babies at higher risk.

In the early days of IVF, when technology was emerging, embryo culture was limited to the cleavage stage (day 2 or 3). This is because support to the blastocyst stage (day 5) was still lacking. As such, fertility doctors routinely transferred multiple embryos in order to achieve a better chance of success. The idea is that by placing two or more embryos, at least one would survive and develop. However, in certain instances, more than one embryo implant, resulting in twins or triplets



Potential complications in twin pregnancies

Multiple pregnancies pose higher risks to mother and babies compared to a singleton pregnancy. These are potential complications associated with higher order pregnancies.

Maternal complications	<ul style="list-style-type: none"> - Pre-eclampsia (high blood pressure complicating pregnancy) - Diabetes in pregnancy that sometimes require insulin injections - Increased nausea, vomiting, discomfort and fatigue - Emotional and financial stress from multiple pregnancy
Birth complications	<ul style="list-style-type: none"> - Low-lying placenta and bleeding during pregnancy - Higher need for Caesarean section - Preterm labour/delivery - Lower birth weights or twin growth discordance, where there is a weight difference between the twins. - Prematurity and lower birth weight associated with long-term health complications - Increased need for neonatal care and social support

Strategies to overcome multiple pregnancies in IVF treatment

Multiple pregnancy was recognised as an alarming concern by governing bodies of assisted reproductive technology (ART) in several countries. Since then, there is an increasing call to encourage the transfer of only one embryo at a time.

By choosing to only have a single embryo for transfer, women can reduce the risk of multiple pregnancies in IVF treatment. This is most suitable for women who are younger and have good quality embryos at the blastocyst stage.

Studies have demonstrated that in women with good prognosis, they are equally able to become pregnant with a single embryo in two tries, compared to a transfer of two embryos at one go^[1-4]. This means that not only is the cumulative pregnancy rates similar between the two, but there is also a lower risk of multiple pregnancy.

Factors that improve pregnancy rate with single embryo transfer (SET)

1. Better selection of embryo

Several methods are available to identify the embryo with high implantation potential:

- Blastocyst culture: Enables the selection of embryos which have successfully made it to the blastocyst stage, and eliminating those which have stopped growing.
- Time-lapse imaging: By continuous monitoring of the embryos over the entire culture duration, embryos can be ranked according to their development, and the best one is selected for transfer.
- Artificial-Intelligence: By using large data and computer software, embryos that are most likely to give a pregnancy can be identified, and later selected for transfer.

2. Competence of freezing technology

As embryos can be frozen, kept and thawed for a subsequent transfer cycle without loss in quality, the woman can be assured that the embryo remains viable after going through these processes and need not rely on transferring multiple embryos to better improve the success rates.

Who is better suited for single embryo transfer?

- Women who are 37 years old and below.
- Women who have good quality blastocysts.
- Women who use donor eggs of a younger woman.

Other factors that influence the number of embryos for transfer are

- the age of the woman, quality of embryos available,
- patient's reproductive history and concerns on conceiving twins, and
- IVF regulations of the country of the fertility centre/hospital.

Take-away message

Every couple who goes for IVF desires to achieve a pregnancy, and very often, the couple would go to great lengths to do so. More importantly, there should be a balance between ensuring that patients achieve a successful pregnancy after embryo transfer and safeguarding their health and the baby (by avoiding multiple pregnancy). Hence, it is vital to work together with a proficient and supportive fertility specialist to achieve your pregnancy goal and desires outcomes.

References

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