Risks and complications of assisted conception

INTRODUCTION

No medical treatment is entirely free from risk and infertility treatment is no exception. It is important, however, to appreciate that most patients go through IVF and other assisted conception treatments without any problems at all.

The risks associated with infertility treatment can be considered over six categories:

- The risks associated with the drugs used to stimulate ovaries
- The surgical risks associated with egg collection
- Laboratory issues and risks
- The risks associated with pregnancy
- The risks of an abnormal pregnancy
- Psychological and emotional risks

LABORATORY ISSUES AND RISKS

Patients' treatment in the laboratory may result in an unexpectedly poor outcome both in the process of fertilization and in embryo development.

No eggs/Immature eggs collected and abnormal eggs

There is considerable variability in the number of eggs collected and not every follicle will yield an egg. Occasionally no eggs are collected. Some follicles may contain eggs which are either immature or deteriorating and are thus unlikely to fertilise normally.

No sperm or fewer sperm than expected

Sometimes a sperm sample is found to have decreased dramatically on the day of egg collection. If IVF was originally planned we may advise a switch to ICSI which requires only one sperm per egg compared to millions. If no sperm can be found in the ejaculate, we may advise an attempt at surgical recovery of sperm or alternatively advise egg freezing.

Problems with fertilisation

If egg and sperm quality is good, about 70% of mature healthy eggs would normally be expected to fertilise normally following IVF or ICSI. The remainder usually do not fertilise; however, occasionally an egg will fertilise abnormally for example if it has been penetrated by more than one sperm. This occurs in nature too. The percentage of eggs fertilised may be reduced if the egg and/or sperm quality is poor. A complete failure of fertilisation occurs in about 5% of IVF cases and about 1% of ICSI cases, but is more common when only few eggs are collected. In such circumstances, the treatment cycle will be reviewed and discussed with you in a follow up consultation with your consultant.

Problems with cleavage (further development) of the embryo

Most normally fertilised eggs will cleave; however, a small percentage may not. Of those that cleave, not all will be of good quality. A good quality embryo will generally have clearly visible, regularly shaped cells. However, there will usually be some embryos in which a cell(s) has broken into small fragments ("fragmentation"). Minor fragmentation in embryos is quite common and does not appear to affect pregnancy rates. More extensive fragmentation affects the survival of the embryo. We therefore usually try to select only apparently good quality embryos with regular cells or minor fragmentation for replacement, though many healthy pregnancies have developed from embryos with significant fragmentation. Culturing embryos to the blastocyst stage is often undertaken. The embryology team will advise on this.

Incidents and accidents

As eggs and embryos are very small (just 0.1mm across or seven times smaller than the dot at the end of this!) it is unsurprising that problems may occasionally arise in the laboratory with their manipulation, processing and handling. While accidents and incidents are extremely uncommon, complications such as eggs or embryos sticking in micropipettes or in the cervix during embryo transfer, accidental spillage of culture dishes or equipment malfunction have all been described and may lead to the loss or compromise to eggs, sperm and embryos.

Aria Fertility's protocols and quality assurance procedures are rigorous, regularly reviewed and designed to minimise problems. In addition, our laboratories are inspected regularly by the regulatory authorities to ensure appropriate procedures are in place.

Where there is an unexpected outcome or event in the laboratory Aria Fertility Embryology and Medical staff will be available to discuss the situation. Further investigations to try and gain a better understanding of what occurred may be recommended and you will be offered a follow up consultation with your consultant.