Why Did Our IVF Treatment Not Work?

Whilst IVF treatment is very successful it does not always work. Patients and healthcare professionals working in IVF are very aware of this but equally we all have one intention and that is for the treatment to be successful and ultimately result in a baby. Whilst we can accept that not every cycle will be successful it is important to understand why IVF may not have worked so as to have insight into what may have gone wrong and ways in which this can be addressed. This information can help couples understand their subfertility and allow them to make an informed decision whether to have further treatment.

For IVF to work we need to have a viable embryo available to replace into a well prepared womb and for that embryo to then implant and establish a healthy relationship with the mother. If any of these components are compromised the embryo may not implant or, even if it does, it may not develop properly and miscarry.

Arguably the most important part of the puzzle is the embryo. The better the embryo the more chance it has of implanting. Embryos making it through to the blastocyst stage (day 5-6) are also more likely to implant than those replaced at the cleavage stage (day 2-3). This relates more to the selection of the best embryo or embryos rather than them simply being older. If the best embryo can be identified earlier then the chances are just as good but in many cases it is hard to tell the difference between embryos and to chose the best one.

Whilst a top quality blastocyst is more likely to implant than a poorer quality cleavage stage embryo the grading system is not a perfect predictor: the best embryos may have a 50% or more chance of implanting whilst the lower quality ones still implant in around 25% of cases. The quality of the embryo is primarily determined by the quality of the eggs and sperm that make them. The key determinant of egg quality is female age: egg quality falls from 35 years of age and increasingly so from 40. This is clearly reflected in the HFEA success rates for each clinic and as a whole. Male age has less of an effect on sperm quality, which is primarily measured by the number and motility of the sperm and their shape. External influences such as lifestyle and certain medical conditions will affect both egg and sperm quality: smoking and obesity are the obvious ones.

Embryos are graded subjectively and whilst this works well it is not a perfect process. A top quality blastocyst still has around a 25% of being genetically abnormal. Genetically abnormal embryos tend to not implant but some do and these then tend to result in miscarriage. Genetically abnormal embryos do not usually result in a viable pregnancy therefore which is why there does not seem to be a higher chance of having a baby with an abnormality with IVF treatment, which is reassuring. The only way to know if the embryo is genetically normal is to under pre-implantation genetic screening (PGS). Whilst PGS should increase the chances of IVF working its’ role is still unclear and adds significant cost to your treatment as it is not funded unless one or either parent is known to carry a genetic abnormality themselves.

Embryos have to be physically placed into the womb. This is referred to as an ‘embryo transfer’. In most cases the embryo or embryos can be replaced easily. However, some transfers can be more difficult and require extra steps or result in pain and bleeding. It is unclear how important these events are as many patients have successful treatment even
after the most complex of transfers. Ultimately, however, your treatment is more likely to be successful if the transfer is performed easily.

Once the embryo has been replaced it has to implant. This process is not completely understood or predictable. What we do know is that the chance of the embryo implanting is reduced if the womb lining (the endometrium) is thin (measures less than 7 mm) or when there are abnormalities within the womb such as fibroids, polyps and scar tissue (adhesions). The larger and more numerous these are the less the chance the embryo will implant. Having said that, embryos still implant when the womb lining is thin and when there are abnormalities in the womb. Furthermore, it is not clear whether removing these ‘lumps and bumps’ definitely improves the chances of implantation.

Many patients worry that they are rejecting the embryo and are concerned there may be immune problems. This is the least clear part of the whole process and despite years of research and numerous treatments we still do not understand the place of immunity and immune therapy. As above, we know women with major medical disorders and immune disorders still manage to conceive naturally and have uneventful pregnancies and so while these things cannot be ignored they are unlikely to mean you cannot have successful treatment. Stress is similar and whilst every measure should be taken to reduce it, life today and the IVF journey itself mean we’re never too far away from a stressful event. Many patients turn to complementary therapies such as acupuncture and reflexology and whilst these can help reduce stress it is unclear if they ultimately make IVF treatment more effective.

So, in summary, your chances of IVF working are higher if you are younger, if you have one or more good quality embryos to replace, if these are replaced easily and uneventfully, and if the womb lining has developed adequately and there are no problems with the womb. However, IVF treatment still works when things are not perfect and ultimately every normal embryo has a chance of implanting irrespective of your age, the quality of the embryo and how it is replaced, and even if your womb and its’ lining are not perfectly prepared. Whether external influences such as stress or immunity play an important role remains to be determined but these also do not preclude the embryo implanting and your treatment working. On the contrary, IVF is not guaranteed even when everything falls into place and seems to be going as well as it possibly can.

We recommend considering the following before each cycle of IVF:
- Be optimistic but realistic
- Remind yourself that treatment may not work
- Ask the team looking after you what your chances of success are
- Ask the team what they will do to maximize your chances
- Ask the team what you can do to maximize your chances