

PATIENT INFORMATION

# INTRACYTOPLASMIC SPERM INJECTION (ICSI)



## **Worcester Fertility Clinic**

### **Intracytoplasmic Sperm Injection (ICSI)**

ICSI is a type of IVF which involves the injection of a single sperm cell directly into the egg using a very fine glass needle. The fertilised egg (embryo) can then be transferred into the womb of the woman as in a normal IVF cycle. It is used primarily for male factor infertility. The live birth rates for ICSI and conventional IVF are similar.

The first baby born in the world from this treatment occurred in August 1992 following treatment at the Free University of Brussels.

ICSI Treatment is suitable for: -

1. Couples where the sperm count is low or in some cases zero
2. The sperm swim poorly
3. The numbers of normal sperm are low
4. There are antisperm antibodies
5. There has been failed fertilisation with IVF
6. Where vasectomy reversal has been unsuccessful.

The treatment involves similar preparation as for IVF with the gonadotrophin injection and egg collection.

The sperm is either retrieved from an ejaculated sample or occasionally by aspiration (PESA) / (TESA) or biopsy from the testicle.

#### **The ICSI procedure.**

Eggs are prepared by removing the cells that normally surround them. They are then graded according to maturity. Only the mature eggs are injected with a single sperm and then cultured overnight. The following morning the eggs are checked to see if fertilisation has occurred. Up to 2 embryos are then selected and transferred in to the uterus as for IVF. The remaining embryos may be frozen and stored for future treatment. As for IVF this will be discussed with you.

Prior to undergoing treatment you will have a counselling session with one of the embryologists to learn more about the process and to discuss any screening that may be appropriate.

#### **What are the risks of ICSI treatment?**

ICSI like IVF is an invasive procedure. However, unlike IVF, ICSI involves injecting a sperm directly into an egg, therefore allowing the use of sperm that may not otherwise be able to fertilise an egg. Therefore because of this there have been concerns raised about the potential risks to children born as a result of ICSI.

The Human Fertilisation and Embryology Authority (HFEA) keep reviewing the evidence on a regular basis. As ICSI is still a new technique the children born as a

result of ICSI are still young and therefore follow up studies involve relatively small numbers of children and do not include effects that may only be seen in older children or in the next generation.

The use of ICSI has potentially been linked with certain genetic and developmental defects.

### **Possible inheritance of genetic and chromosomal abnormalities.**

#### **Inheritance of cystic fibrosis gene mutations.**

Some men who have no sperm in their semen may have congenital bilateral absence of the vas deferens (CBAVD). In this condition, the tubes that carry sperm from the testes to the penis are absent. Two thirds of men with CBAVD are also carriers of certain cystic fibrosis mutations. Genetic testing will be offered to both partners in these circumstances prior to proceeding with ICSI.

#### **Sex chromosome defects and the inheritance of sub-fertility**

Some sub fertile men have parts of their Y chromosome missing (deleted). Certain genes on the Y chromosome have been shown to be involved in the production of sperm and the deletion of these genes may be responsible for men having no sperm or low sperm counts.

Therefore using sperm, which contain such deletions, may transfer the same type of sub fertility from father to son.

Abnormal numbers or structures of chromosomes (particularly the sex chromosomes X and Y) may be associated with infertility in both men and women and babies born from ICSI treatment may have a slightly increased risk of inheriting these abnormalities.

#### **Other chromosomal abnormalities.**

Occasionally even if couples have a normal number of chromosomes their gametes could have an abnormal number. Unfortunately it is not possible to detect which gametes have an abnormal number of chromosomes, therefore it is possible in ICSI to use eggs or sperm which might not have been capable of natural fertilisation thus producing an embryo with a chromosomal abnormality. The incidence of chromosomal abnormalities after ICSI has been reported to be approximately 3% whilst in the general population it is approximately 0.6%.

#### **Birth Defects.**

There does not appear to be any difference in the major birth defect cleft palate in babies resulting from ICSI and the general population. There may however be a slightly higher incidence of minor abnormalities in babies born from ICSI treatment (20% as opposed to 15% in the general population)

**Miscarriage.**

If an abnormal gamete is used in the ICSI treatment there is an increased risk that an abnormal embryo will result and if this implants in the womb then there is potentially a higher risk of miscarriage. Fortunately an embryo with a chromosomal abnormality is unlikely to successfully implant in the womb.

There are some reports suggesting that the greater the degree of abnormality of the sperm the higher the risk of miscarriage.

**If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.**

### **Patient Experience**

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

### **Feedback**

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

### **Patient Advice and Liaison Service (PALS)**

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

### **How to contact PALS:**

**Telephone Patient Services: 0300 123 1732 or via email at: [wah-tr.PET@nhs.net](mailto:wah-tr.PET@nhs.net)**

### **Opening times:**

The PALS telephone lines are open Monday to Thursday from 8.30am to 4.30pm and Friday: 8.30am to 4.00pm. Please be aware that a voicemail service is in use at busy times, but messages will be returned as quickly as possible.

If you are unable to understand this leaflet, please communicate with a member of staff.