Mini-IVF

DR. K. D. NAYAR
MD, DGO, Dip. Obst. (Ireland)
Chief Consultant Infertility & IVF Akanksha IVF Centre
Mob: +91-9810398765

The first IVF baby, Louise Brown, was born in 1978 and was conceived without the benefit of any fertility drugs as **a natural cycle IVF**. In the years that followed her birth, the experience of most clinics was that the success of IVF-ET was improved by administering injectable fertility drugs to the woman by producing more number of eggs and subsequently embryos. One disadvantage of injectable drugs is that they substantially increase the cost of IVF-ET. In order to give some chance of pregnancy to infertile couples who simply cannot afford conventional IVF-ET with injectable drugs, some clinics do offer IVF-ET without injectable drugs, which decreases the costs of the procedure as well as the number of visits. This is known as **Mini-IVF**, low **intensity IVF** or **mild or minimal ovarian stimulation IVF**.

Mini-IVF was first developed by the Kato Ladies Clinic in Japan and then perfected and popularized at many centres. It takes advantage of patient's own natural FSH elevation with an ingeniously simple protocol that strives for lesser number of better quality eggs instead of larger number of poor quality eggs. It is easier for the patient and much cheaper than conventional IVF. In reality, Mini-IVF was devised to serve women who otherwise might be regarded as candidates for IUI treatments. Mini-IVF is much more cost-effective than injectable cycles with IUI.

ADVANTAGES

The theoretical advantages to this approach include lower cost, fewer injections, fewer days of monitoring and less exposure of medications to developing eggs and the developing endometrium. Because patients undergoing minimal stimulation have only few or one follicle, it may be possible to perform the oocyte retrieval procedure without anesthesia. Physicians can provide some medications for relief during the procedure, however patients should discuss this matter with their physician.

PATIENTS THAT BENEFIT

Although it is generally agreed upon that mini-IVF has lower success rate than full stimulation protocols but there may be certain patient populations who may benefit from this approach: older women,low responders who do not recruit many follicles even with high dose stimulation, high responders who are at a markedly increased risk of ovarian hyperstimulation syndrome and patients who are not interested in embryo cryopreservation or who want to limit the number of eggs to be fertilized, due to ethical or religious reasons.

PROTOCOLS FOR MINI-IVF

There are several different ways in which IVF-ET can be performed with limited use or without the use of injectable gonadotropins. In general, these protocols either employ the relatively inexpensive oral fertility drug clomiphene citrate starting on day 3 of the menstrual cycle and continued until ultrasound monitoring shows the follicles are ready for ovulation(not stopped in 5 days as is usually the custom), along with low "booster" dose of gonadotropin (just 150 IU of FSH) added on days 8, 10 and 12 and an hCG trigger shot for final maturation or just the trigger alone(natural cycle IVF).The intent is to produce <8 eggs. They typically produce birth rates per cycle of at best 15-20% per attempt.

Clomiphene not only stimulates pituitary to release FSH naturally (by blocking estrogen's suppressing effect) but continuous clomiphene also blocks estrogen's stimulation of LH release and also usually prevents premature ovulation. Clomiphene only prevents premature LH surges 90% of the time, so at **Akanksha IVF Centre** we cleverly prevent premature LH surges even in these cases by using GnRH antagonist when needed. So we never encounter the problem most specialists fear, that of premature ovulation.

The next step is to recognize that clomiphene has a temporarily negative effect because it blocks estrogen's support of the developing endometrial lining. That is one reason why results in the past have been so poor with the use of clomiphene for ovarian stimulation. The embryos are less likely to implant in such an endometrium. This problem is now easily solved by using the **Japanese protocol** for embryo freezing with transfer in subsequent cycles in an endometrium that is more perfectly receptive.

DISADVANTAGES

Fewer eggs are available for implantation and subsequently fewer embryos to transfer. Cryopreservation is unlikely.Lower pregnancy rate and high cycle cancellation rate has been observed.

HOW SUCCESSFUL IS MINI-IVF?

The pregnancy rate varies between studies. The fact is that factors such as age of woman, her ovarian reserve and the medications used come into play in the success of mini-IVF. Younger women with normal ovarian reserve do better than women with diminished reserve. Further studies are required to answer the unknown and to validate the approach.

MICRO-IVF

Micro IVF in contrast to minimal stimulation IVF, involves the use of injectable gonadotropins and aims at producing 15 eggs which is the aim at **Akanksha IVF Centre**. This ends up being far more effective than clomiphene because it increases the chance of finding that "healthy egg" on the first try. It basically represents a scaled down IVF treatment cycle that includes all the fundamental steps of the IVF process.

When used in younger women (under 36 years) with normal ovarian reserve (AMH>2.0) and in absence of male infertility ,it is likely to yield a 50% success rate per IVF cycle. This is about three times as effective as "Mini-IVF" and about five times as successful as a cycle of intrauterine insemination(IUI).

In reality, Micro-IVF was devised to serve women who otherwise might be regarded as candidates for IUI treatments. **This is much more cost-effective than injectable cycles with IUI**. It is to be recognised that IUI is relatively unsuccessful in women over 35 (and it gets progressively worse after age 40). This is also the case with moderate to severe male infertility, endometriosis (regardless of its severity), and in women (of any age) who have diminished ovarian reserve. In all such cases IVF is far more likely to succeed because it bypasses the "unexplained infertility" factors.

Dr K. D. Nayar, M.D., D.G.O., Dip. Obst. (Ireland), Chief Consultant Infertility and IVF
Akanksha IVF Centre, Mata Chanan Devi Hospital, C-1, Janak Puri, New Delhi-110058
Ph: +91-11-45582261, 45682024, 25524951, Mob: +91-9810398765
www.akankshaivfcentre.com, www.ivfspecialistdelhi.com