

Infertility: A Review of Calgary's Fertility Program

Submitted by Patricia Chrystian RN, BScN, CPN (c)
NCORNA District

I recently attended ORNAA's Provincial Conference in Red Deer, Alberta. Dr. O'Keene presented the session from Calgary's Regional Fertility Program. I will review the types of infertility, the referral process, testing and types of treatments available to clients, and costs associated with the different types of fertility treatments.

Infertility is defined as the failure to achieve pregnancy after one year of unprotected intercourse. It affects 10-15% of Canadian couples. Causes of infertility can be divided into both male and female factors. Male factors include: low sperm count, low motility of sperm and antisperm antibodies. Female factors include: hydrosalpinx, ovulatory dysfunction, uterine dysfunction that includes polyps or fibroids. Age of the woman is also a factor. As women age, their fertility declines. Many couples defer having children and then are faced with difficulties in trying to conceive later on. There is also unexplained infertility. Despite all the testing these couples go through, there is no cause for the couple being infertile.

To begin the process, one must have a referral from their family physician to the clinic. A typical wait time for the initial consultation for general infertility can be three to six months. Wait time for invitro fertilization is typically two to three months, again a referral from the family physician is required.

The testing that the couple must undergo is as follows:

Males must provide a semen sample. The sample is assessed for the following: ejaculated volume, sperm concentration, sperm mobility, sperm vitality, morphology and white blood cell count. It is also tested for sperm antibodies.

Females need to have a pelvic ultrasound, hysteroscopy or hysterosalpingogram. Both males and females require the following blood tests: HIV I and II, HTLV I and II, Hepatitis B and C. Females require a day 3 FSH and estradiol level and rubella titre.

The types of treatment offered by the Regional Fertility Program are as follows:

IUI (intrauterine insemination): where specially washed sperm are placed in the uterine cavity at ovulation. Used for male and unexplained fertility.

Clomiphene citrate: used to induce or improve ovulation. It is an oral medication. It can be used in combination with IUI.

Superovulation intrauterine insemination: consists of injections of gonadotrophins. These are hormones identical to the FSH produced by the body naturally. These injections trigger the growth of multiple follicles and eggs. This is always done with IUI to increase chances of pregnancy.

IVF: In vitro fertilization, defined as "in glass", consists of six phases. In order to maximize the process, the ovaries are closely regulated. The first phase is suppression or the induction of temporary menopause. You don't want premature release of eggs during IVF. Ovary suppression is verified with a pelvic ultrasound. Superovulation is done to increase the number of eggs. This is done by the patient injecting herself every day with medication for 9-14

days. Several transvaginal ultrasounds are performed over consecutive days. Once there are enough eggs, hCG is given to ensure the maturity of all eggs possible. Egg retrieval is done under conscious sedation. Eggs and fluids are aspirated from each ovary transvaginally. Fertilization is the process of mixing the eggs and sperm together in a Petri dish with nutrient rich media. They are incubated overnight and assessed the following morning for fertilization. The embryos are then assessed daily and the embryo transfer usually takes place on day 3. Under ultrasound guidance they are passed through the cervix into the uterus through a catheter. A urine test is done on day 16 to assess for pregnancy.

ICSI: is intracytoplasmic sperm injection. A single sperm is injected to each egg. They are placed in Petri dish with nutrient media and incubated overnight. Fertilization is assessed the next morning. ICSI is used for very low sperm count, problems with sperm morphology or motility, high antisperm antibodies, failure of previous IVF treatment with conventional insemination or to optimize the fertilization rate of a low number of eggs.

Costs associated with fertility treatments can be prohibitive. These procedures are not insured in Alberta, although some are covered in Quebec.

Registration Fee:	\$250
IVF	\$5700
Embryo cryopreservation	\$750 (1 year storage)
Ongoing embryo storage	\$200 (per year, after 1 st year)
Egg Freezing	\$5300
Natural Cycle IVF	\$4500

ICSI	\$1500
Drugs	\$2500- \$5500

These treatments are not only expensive but take time as well. There are also additional costs for traveling to and from the clinic and accommodation costs. There is also a counseling component to these treatments that are included in the above costs.

I enjoyed Dr. O'Keene's presentation. He was very passionate about his work. I found it very informative and made me appreciate how precious fertility is.

References:

O'Keene, Dr. Joseph, ORNAA Provincial Conference.
October 21, 2010

regionalfertilityprogram.ca accessed October 25, 2010.