

OVULATION INDUCTION WITH GONADOTROPINS PATIENT INFORMATION

INTRODUCTION

Gonadotropins are hormones that function by stimulating the ovaries. The name gonadotropin, literally translates as “gonad” for ovary or testis, and “tropin” meaning to stimulate. Gonadotropins are synthesized and released in the human body by the pituitary gland, a small gland located at the base of the brain. The pituitary gland produces two different types of gonadotropins known as luteinizing hormone (LH) and follicle stimulating hormone (FSH), both acting on the ovaries to produce eggs.

Several commercially prepared medications (Gonal-F, Follistim, Menopur, Bravelle, Repronex, and Luveris) are injectable fertility medications collectively known as “gonadotropins” because they contain human FSH and/or LH. Gonadotropins are traditionally referred to as HMG (for human menopausal gonadotropins) or more recently as simply FSH (for follicle stimulating hormone). These medications are given by injection to stimulate development of follicles (eggs) either when development of follicles is not occurring or when the production of multiple eggs and/or better timing of ovulation would be beneficial. Repronex and Menopur (1st generation gonadotropins) consist of two hormones, luteinizing hormone (LH) and follicle stimulating hormone (FSH). Bravelle (2nd generation gonadotropin) consists primarily of FSH. Gonal-F and Follistim (3rd generation gonadotropins) are *genetically engineered* gonadotropins: the human FSH gene has been incorporated into a controlled cell-line, which then produces human FSH.

TREATMENT CYCLE

A treatment cycle refers to the entire process of ovulation induction, cycle monitoring, intrauterine insemination (IUI), and determination of pregnancy with a blood test. With the onset of your menses (first day of full flow), you should schedule a *baseline* sonogram and blood test to be conducted on cycle days 2 or 3). If the baseline testing is normal, you may begin ovarian stimulation with HMG (gonadotropins). The stimulation phase of the treatment cycle typically lasts 7-14 days, during which time you will be returning about every 2-3 days for another sonogram and/or estradiol blood test to evaluate the effects of HMG on your ovaries. Different women respond to HMG at different rates, and even the same woman will not respond to HMG in the same fashion on each cycle, therefore, you may need to have the HMG dosage increased or decreased during the cycle. It is essential that your treatment be monitored closely so that the correct amount of medication is given and that ovulation is “triggered” with HCG (Human Chorionic Gonadotropin) when developing eggs become mature. HCG, known commercially as Ovidrel, Novarel, Pregnyl, is an injectable medication which is responsible for causing the release of the eggs from the ovaries. The HCG injection is timed; you will be instructed to administer the injection 36 hours prior to intrauterine insemination (IUI) or intercourse. In some individuals, additional medications may be employed, such as Lupron or birth control pills prior to the stimulation phase.

All gonadotropins are injected subcutaneously in the abdomen (or thigh), and may be self-administered. You will need to receive the injections at the same time each day (within 2 hours) usually between 7:00 and 9:00 p.m. You may need to arrange for your husband or friend to give you the injections if you can't administer the injections yourself. You should schedule an appointment with one of our nurses to learn how to prepare the medication and give the injection. Besides learning the injection technique, your treatment plan will be reviewed. *There is a fee for this nursing visit.*

Pregnancy rates will vary from couple-to-couple depending upon many factors, such as age and presence of male factor. However, typical pregnancy rates reported from this treatment are 15-20% *per cycle*. If pregnant, multiple gestation occurs in 15% of pregnancies.

RISKS AND SIDE EFFECTS:

Gonadotropins are associated with several side effects including ovarian hyperstimulation syndrome (1-5%), multiple gestation (15%), ectopic (tubal) pregnancies (1-3%), ovarian torsion (<1%), and possibly an increased risk of ovarian cancer (controversial). Attached to this packet is a copy of the fact sheet provided by the American Society of Reproductive Medicine concerning the side effects of gonadotropins. Please take time to read this information. Since this medication is injectable, there is a risk of infection at the injection site referred to as cellulitis.

Ovarian hyperstimulation is a condition in which cysts form in the ovaries during or the stimulation phase of the cycle. While these cysts usually do not cause any problem other than some pelvic fullness, these cysts occasionally grow to considerable size and may cause significant abdominal bloating or pain (referred to as hyperstimulation). If this occurs, it usually begins about 3 to 7 days after you receive the injection of hCG. You will need to call us if you have any problems during this time, particularly, if you experience dizziness, decreased urination or a weight gain of more than 10 pounds. These cysts usually start to go away after 4 to 7 days, but on rare occasions, can cause serious problems with accumulation of fluid in the abdomen, which may require drainage and/or hospitalization. If pregnancy occurs, this condition may persist for 2-3 weeks because the pregnancy hormone exacerbates this condition. Under rare circumstances, these cysts may rupture or the ovary may twist, possibly requiring surgery and possible loss of the involved ovary. Other side effects of HMG that may be observed during the cycle are breast tenderness, mood swings, and fatigue.

Intrauterine insemination (IUI) may cause mild cramping or bleeding (spotting) after the procedure. Rarely (<1%), IUI may cause a pelvic infection. If you have a fever (temperature > 101.4° F) after IUI, please call the office immediately.

SPECIFIC INSTRUCTIONS

1. *Nursing Visit.* Prior to initiating treatment, you should schedule a nursing visit to review your treatment plan, order medications, and learn how to prepare and inject the medications.
2. *Baseline sonogram/estradiol (E₂).* With the onset of menses, you need to schedule a baseline sonogram and estradiol blood test to confirm that your ovaries are normal. Cycle Day 1 is considered the first day of full menstrual flow, not premenstrual spotting. Baseline sonograms are conducted on Cycle Day 3 or Day 2. Please call the office at (214) 363-5965 on Cycle Day 1 or 2 to schedule an appointment for the baseline ultrasound and blood test.
3. *Medication start.* Ovarian stimulation is initiated on Cycle Day 3, and continues usually for 7-14 days. If possible, we will let you know the next step at the time of ultrasound. In the afternoon, the estradiol results will be reviewed, and you will be called between 1:00 and 3:00 p.m. if there is a change in plan. If you expect a call and you haven't heard from us by 4:00 p.m., please call us. Please make sure we have your current work and home phone numbers so that we may contact you easily. If you have an answering machine, we will leave a message if you prefer not to be contacted at work.
4. *Cycle monitoring.* You will need to return usually every 2-3 days for sonograms and/or blood tests to monitor the growth of your follicles. The following schedule is typical.

<u>Cycle Day</u>	<u>Description</u>
Prior to Cycle	Nursing Visit
Cycle Day 1 or 2	Call office to schedule baseline tests
Cycle Day 3 – AM*	Baseline sonogram and estradiol blood test
Cycle Day 3 – PM	Start HMG injections [†]
Cycle Day 6 – AM	Estradiol blood test
Cycle Day 8 – AM	Sonogram and estradiol
Cycle Day 10 – AM	Sonogram and estradiol
Cycle Day 11-12 – AM	Sonogram and estradiol, HCG if eggs mature
Cycle Day 13-14	IUI
7-8 Days after IUI – AM	Progesterone level
14-15 Days after IUI – AM	B-hCG

* Sonograms are scheduled between 8:00 – 10:00 a.m.

[†] Daily injections are typically given at 7:00 – 9:00 p.m.

All follow-up appointments after cycle Day 8 will be arranged based on the size of the largest measured follicle. Each patient's care is individualized at this point.

5. HCG (Ovidrel, Novarel, Pregnyl). The medications and follicular monitoring are continued until the size of the follicles and the blood results indicate that the eggs are mature. Once the follicles are mature, you will then be given an injection of HCG, a hormone that “triggers” ovulation. Ovulation usually occurs 36 hours (range of 24-40 hours) after HCG administration. To increase the amount of sperm reaching the egg, intrauterine insemination (IUI) is performed at this time. If too many follicles are developing, the physician may

discuss the option of not giving the HCG injection so that the eggs are not released to help prevent you from getting ovarian hyperstimulation syndrome.

6. *IUI (Intrauterine Insemination)*. Intrauterine insemination is a procedure that allows us to deposit sperm directly into the uterus via a small, flexible catheter. It requires that your partner bring in a semen sample. If you live within 1 hour of the office, it is probably easier to bring the sample in from home. Make sure to obtain a specimen cup if you plan to produce the sample at home. Please do not use a container other than the one we provide as it may cause damage to the sperm. Please label the container (not the lid) with both your name and your husband's name, your husband's social security number, and date and time of sample collection. The sample is then to be brought to the ARTS Lab where the sample is washed and concentrated. Our office will schedule an appointment to drop off this sample between 8:00 and 9:30 a.m., and an appointment to return to the office between 10:00 and 11:30 a.m. (as scheduled) for the insemination. The procedure usually requires less than 15 minutes. You may experience some mild cramping or spotting after the procedure, but you may resume normal activity, including returning to work.
7. *Midluteal progesterone level*. A progesterone level (blood test) will be drawn 7 to 9 days after the IUI in most treatment cycles. This will be of value to the physician when he/she reviews your cycle.
8. *Pregnancy test*. A blood pregnancy test will be performed 14 days (13-15 days) after the IUI. Please call the office and speak with a nurse if you get your period before your pregnancy test is scheduled. Please call Monday through Friday, 9:00 a.m. to 4:00 p.m., to report your menses. If you are pregnant, your blood pregnancy test will be repeated in the 48-72 hours, and a sonogram scheduled for 2-3 weeks later. If your pregnancy test is negative and you wish to start another cycle again immediately, please schedule your baseline ultrasound and estradiol blood test. Otherwise, please schedule a follow-up appointment with your physician.

MEDICATION COSTS

Please contact your insurance company to verify coverage for medicines and procedures. Remember that prices vary from pharmacy to pharmacy, so shop for the best price. Gonadotropins usually cost \$55.00 per 75 IU (range \$34-\$61), therefore a 10-day stimulation using 75 to 225 IU costs \$550-\$1650 for HMG medication. HCG costs approximately \$50. Because of the high costs, couples should obtain written verification of coverage from their insurance company. Please refer to the Ovulation Induction-IUI Estimated Fees schedule for monitoring and procedure costs.