**Menotropins (men-o-troe-pins)**

**Therapeutic Use**: Hormones

**Pharmacologic Class**: Gonadotropins

**Classification**

**Pregnancy Category**: X

**Indications**

Menotropins are used in conjunction with chorionic gonadotropin to stimulate ovulation in patients with ovarian dysfunction and resultant infertility. They are also used in conjunction with chorionic gonadotropin to stimulate spermatogenesis in male patients with hypogonadotropic hypogonadism and resultant infertility. As part of assisted reproductive technologies (ART), they are used to stimulate the production of multiple oocytes in ovulatory patients.

**Action**

Menotropins are a purified form of human pituitary gonadotropins consisting of follicle-stimulating hormone (FSH) and luteinizing hormone (LH). In women, FSH causes growth and maturation of the ovarian follicle. LH causes ovulation and development of the corpus luteum. In men, LH causes spermatogenesis.

**Therapeutic Effects**: Ovulation or spermatogenesis, with resultant fertility.

**Pharmacokinetics**

**Absorption**: Appears to be well absorbed after IM administration.

**Distribution**: Unknown.

**Metabolism and Excretion**: 8% excreted unchanged in the urine.

**Half-life**: FSH—70 hr; LH—4 hr.

**TIME/ACTION PROFILE (effects on reproductive function†)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IM, subcut (women)</td>
<td>unknown</td>
<td>18 hr</td>
<td>unknown</td>
</tr>
<tr>
<td>IM (men)</td>
<td>unknown</td>
<td>4 mo</td>
<td>unknown</td>
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</tbody>
</table>

†Women—peak ovulation after chorionic gonadotropins; men—peak increased spermatogenesis.

**Contraindications/Precautions**

**Contraindicated in**: Vaginal bleeding of unknown cause; Ovarian fibroadenomas; Ovarian cyst; Pregnancy.

**Use Cautiously in**: Asthma; O/D syndrome; Seizure disorders; Migraine headaches; Polycystic ovaries; Primary hypothyroidism or hyperthyroidism.

**Adverse Reactions/Side Effects**

**CV**: Thromboembolism, edema, thrombophlebitis.

**GI**: Abdominal pain, bloating, diarrhea, nausea, vomiting. MI: Pulmonary edema, multiple failure, ovarian enlargement.

**Endo**: Gynecomastia (men).

**Misc**: Fever.

**Interactions**

**Drug-Drug**: None significant.

**Route/Dosage**

**Subcut, IM (Adults)**

- Reprogen—Infertile patients with oligo-anovulation—150 units FSH and 150 units LH daily for first 5 days of treatment after GnRH agonist or antagonist pituitary suppression, dosage adjustments may be made every 2 days and should not exceed 75–150 units/adjustment (not to exceed 450 units/day or more than 12 days of therapy). If response is appropriate, hCG should be given after discontinuation of menotropins. Assisted reproductive technologies—225 units FSH and 225 units LH daily after GnRH agonist or antagonist pituitary suppression, dosage adjustments may be made every 2 days and should not exceed 75–150 units/adjustment (not to exceed 450 units/day or more than 12 days of therapy) followed by chorionic gonadotropin.

- Pergonal—75 units FSH and 75 units LH/day for 7–12 days followed by hCG if ovaries are not enlarged. If pregnancy does not occur, dose may be doubled for 2–3 more courses.

- Assisted reproduction technologies—Following pretreatment with hCG alone, 75 units FSH activity and 75 units LH 3 times weekly concurrently with hCG, dose may be doubled if ineffective after 4–6 courses.

**IM (Adults—males)**

- Reprogen—Following pretreatment with hCG alone, 75 units FSH activity and 75 units LH 3 times weekly concurrently with hCG, dose may be doubled if ineffective after 4–6 courses.

**NURSING IMPLICATIONS**

**Assessment**

- **Female Infertility**: Gynecologic and endocrine examinations to determine the cause of infertility should be completed before therapy. The patient’s partner should also be evaluated for possible decreased fertility. An endometrial biopsy should be performed to detect patients who are at risk for the presence of endometrial carcinoma.

- **Ultrasound exams** are recommended during menotropin therapy and before administration of chorionic gonadotropin.
Male Infertility: Urologic and endocrine examinations to determine the cause of infertility should be completed before therapy.

Lab Test Considerations: In female infertility, cervical mucus volume and character, serum estradiol levels, serum or urine progesterone concentrations, and ultrasonography may be used to determine whether follicular maturation has occurred.

In male infertility, serum testosterone, sperm count, and motility should be evaluated before and after course of therapy.

Potential Nursing Diagnoses
- Sexual dysfunction (Indications)
- Disturbed body image (Indications)

Implementation
- Female infertility—chorionic gonadotropin is usually administered 1 day after course of human menotropins.
- Male infertility—chorionic gonadotropin is administered alone until secondary sex characteristics develop, then administered concurrently with menotropins.

Subcut: Alternating sites in the lower abdomen should be used for subcut injection.

IM: Reconstitute powder with 2 mL of 0.9% NaCl for injection provided by manufacturer. Use immediately; discard any unused portion of dose.

Patient/Family Teaching
- Instruct patient in correct technique for medication reconstitution and administration of IM injection. Ensure that patient understands medication administration schedule.

- Female Infertility: Instruct patient in the correct method for measuring basal body temperature. A record of the daily basal body temperature should be maintained before and throughout course of therapy.

- Male Infertility: Instruct patient to report physician signs and symptoms of fluid retention (swelling of ankles and feet, weight gain), thromboembolic disorders (pain, swelling, tenderness in extremities, headache, chest pain, blurred vision), or abdominal or pelvic pain or bleeding.

Evaluation/Desired Outcomes
- Follicular maturation in women. Menotropin therapy is followed by human chorionic gonadotropin, which should lead to ovulation with subsequent pregnancy. If ovulation does not occur after any 3 cycles, appropriateness of continuation of menotropin therapy should be reconsidered.

- Increased spermatogenesis after 4 mo of therapy in men.

Why was this drug prescribed for your patient?