**Infertility Patient Cases:**

University of Minnesota College of Pharmacy

Megan R. Undeberg, PharmD, BCACP

***Case 1:***

HR is a 26 y.o. female who presents to her family physician with the concern of being unsuccessful with conceiving with her husband for the past 10 months. HR is 5’7” tall, 125 pounds and previously utilized Depo-Provera as her contraceptive of choice; this was initiated at age 18 and discontinued 11 months ago. Her menses have been irregular throughout her teens and 20s, whether she was on birth control or not. HR is up to date on her vaccinations and well-woman visits. She currently is taking levothyroxine daily to manage her hypothyroidism. HR comments her sister, mother and maternal aunt have PCOS. During the visit, she also notes her husband, who is also 26 years old, has cystic fibrosis, which is well controlled.

What potential elements of infertility exist in HR and her husband?

What options/interventions for treatment of infertility exist for (a) HR and (b) HR’s husband?

***Case 2:***

MR is a 35 y.o. female who recently underwent laparoscopy for excision of a left ovarian cyst. Upon examination, the ovary and Fallopian tube were severely diseased, necessitating a conversion during the laparoscopy to an open laparotomy. Post-op, MR learned from her OB-GYN she the left ovarian cyst was a chocolate endometrioma, and endometriotic adhesions had formed on her ovaries, Fallopian tubes, uterus, bladder, ureters, large intestine, rectum, and cul-de-sac. Due to these characteristics, she is determined to have stage IV endometriosis. The surgeon removed as much endometriotic tissue as possible, but due to the extensive nature some patches remained. MR is to initiate Depo Lupron therapy for six months, with the goal of chemical reduction of the remaining lesions. Prior to her surgery, MR was only taking a daily multivitamin. She has no experience with oral contraceptives or any other hormonal therapies.

What patient education can you provide to MR regarding the action of this medication?

How do you discuss “add back” therapy with her?

What counseling can you provide to her regarding what to expect from this medication during her six month treatment?

***Case 3:***

RU is a 37 y.o. single female who had surgery 8 weeks ago for a non-gynecologic cancer. Oncologic treatment does not involve known gametotoxic agents. However, due to her age and co-existing history of uterine fibroids, endometriosis, and presenting with only one ovary, her oncologist refers RU to the reproductive endocrinologists (RE) at the institution where she is receiving her medical care. Day 3 FSH and estradiol levels are 6 IU/L and 50 pg/mL, respectively. However, her antral follicle count is one. Upon consultation with the RE team, RU decides to pursue one round of IVF, with the goal of obtaining at least one viable oocyte.

RU is prescribed Follistim 300 IU subcutaneously between 7 and 9 pm and Menopur 150 IU between 7 and 9 pm on alternating sides of the abdomen for 7 days.

What counseling do you provide to RU regarding the role of each of these medications?

What side effects should she monitor?

On day 8, RU is instructed to add a third injection, Ganirelix 250 mcg/0.5 mL at 2 pm.

What is the role of this medication in the IVF procedure? Why is timing crucial with these medications?

Days 8, 9, and 10 RU injects Follistim, Menopur, and Ganirelix. On day 10, her transvaginal ultrasound reveals 10 follicles greater than 10 mm each. She is instructed to inject Ganirelix at 8 am on day 11 and HCG 2 mL at 8 pm.

Why is it important to discontinue the Follistim and Menopur and continue the Ganirelix?

Is there a different medication that can be used instead of Ganirelix?

What is HCG and its role in the IVF retrieval process?

Prior to initiating the IVF protocol, RU had to acquire a source of viable sperm. Since she was not in a relationship at the time, RU opted for a sperm donor through a cryobank.

What is the process to obtain donor gametes, whether donor egg or donor sperm? Donor embryos?

What are the implications for a known vs. anonymous donor?

**Assisted Reproductive Technology**

**OCP-Ganirelix Medication Outline**

Continue with OCP pills, even if bleeding occurs. (patient currently on suppressive therapy)

Two weeks prior: Initiation of timed cycle

Last day of OCP pills: Tuesday prior to Friday start

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stim Day** | **AM or PM** | Follistim | Menopur | Ganirelix | Testing Needed |
| 1Friday |  | 300 IUInject SQ in abdomen between 7 and 9 pm\*\*same time each night\*\* | 150 IU*2 vials Menopur to 1 vial H20; ~1 cc total*Inject SQ on opposite side of abdomen between 7 and 9 pm | -- |  |
| PM |
| 2Saturday |  | 300 IU | 150 IU | -- |  |
| PM |
| 3Sunday |  | 300 IU | 150 IU | -- |  |
| PM |
| 4Monday |  | 300 IU | 150 IU | -- | Estradiol level at 7:30 amCall Labline at 3 pm*E2: 41**Comments: a little low; no concern yet**Continue with same doses. Next labs in 2 days.* |
| PM |
| 5Tuesday |  | 300 IU | 150 IU | -- |  |
| PM |
| 6Wednesday |  | 300 IU | 150 IU |  | Estradiol level at 7:30 amCall Labline at 3 pm*E2: 149**Comments: Continue with cycle; same doses.* *Next labs in 2 days.* |
| PM |
| 7Thursday |  | 300 IU | 150 IU | -- |  |
| 8Friday |  | 300 IU | 150 IU | 250 mcg/0.5 mL prefilledNOW at 2 pm | Mayo E2 at 7 amTV US at 8:30 amCall Labline at 11:30 am*E2: 550**4 follicles >10 mm**New doses.**Repeat testing Sunday* |
| PM |
| 9Saturday | AM (7-9 am) | 300 IU | 150 IU | 250 mcg/0.5 mL prefilled |  |
| PM (7-9 pm) |
| 10Sunday | AM (7-9 am) | 300 IU | 150 IU | 250 mcg/0.5 mL prefilled | MayoE2 at 8:30 amTV US at 9 amCall Labline at 11:30 am.*E2: 1231**10 follicles > 10 mm**Continue meds.**Return tomorrow for labs and US* |
| PM (7-9 pm) |
| 11Monday | AM (7-9 am) | 300 IU (NO) | 150 IU (NO) | 250 mcg/0.5 mL prefilled in AM before labs and ultrasound | MayoE2 at 8 amTV US at 9:10 amCall labline at 11:30 am*E2: 1538**12 follicles**STOP meds**Retrieval on day 13* |
| PM (7-9 pm)At 8 pm TONIGHT:HCG 2 cc IMNPO after 10 pm |
| 12Tuesday | AM: Doxy |  |  |  | 5 days total doxycycline |
| PM: Doxy |
| 13Wednesday | AM: Doxy after procedure |  |  |  | Retrieval Day!Check-in Rochester Methodist at 6:30 amNO fragrances, perfumes, scents; oocytes fragile and sensitive*13 follicles with 13 eggs on the 13th!* |
| PM: Doxy |
| 14Thursday | AM: Doxy |  |  |  | Results:13 oocytes\*2 too immature\*2 did not fertilize\*9 successfully fertilized via ICSI and cryopreserved |
| PM: Doxy |
| 15Friday | AM: Doxy |  |  |  |  |
| PM: Doxy |
| 16 Saturday | AM: Doxy |  |  |  |  |
| PM: Doxy |