

Drugs Used in Reproductive Medicine

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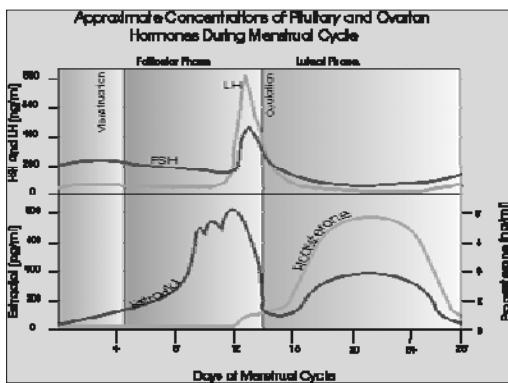
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Physiological Principles

The medications used in reproductive medicine either :

- mimic the actions,
- stimulate or suppress the function of naturally occurring hormones
- or their synthesis / release from the hypothalamus, anterior pituitary gland or the ovary.

Pituitary Ovarian Hormones



Sex Steroids

E2/oestrogenic compounds P4/progestogens OCP
Ethinyl oestradiol MPA NET

Uses :

- Cycle control prior to induction of ovulation or IVF
- Create a withdrawal bleed
- Endometrial preparation prior to replacement of fresh/thawed embryos

Anti-oestrogens (clomifene and tamoxifen)

- Induce the release of gonadotrophins from the anterior pituitary by occupying the oestrogen receptors in the hypothalamus.
- Indication: Oligo/amenorrhoea with PCO
- Dosage: 50-150mg per day from day 2 to 6 of the cycle or after progesterone induced withdrawal bleed.
- Maximum use for six months

Clomiphene

Use of clomiphene in women with regular menstrual cycles is common practice but ? use effectiveness

Gonadotrophins directly stimulate the ovaries

Preparations	Trade name(s)
Recombinant FSH	Puregon Gonal F
Urinary gonadotrophins	Metrodin, Menogon, Merionel, Fostimon
Recombinant hCG	Luveris
Human chorionic gonadotrophin (hCG)	Pregnyl Choragon

Indications for gonadotrophins

FSH:
 Hypogonadotrophic hypogonadism
 Clomiphene resistant PCO
 Ovarian stimulation for IVF

LH (or hCG):
 LH trigger for IVF or with induction of ovulation

Side Effects
 Ovarian hyperstimulation
 Multiple pregnancies

FSH agonists and antagonists

Antagonists e.g. cetrorelix act directly to inhibit the release of LhRH and thereby ↓ FSH and LH
Agonists e.g. buserelin, goselerin and leuprorelin act by initially stimulating the release of FSH and LH (flare up) and if given continuously will deplete FSH and LH the pituitary cells that produce these hormones

Use of agonists and antagonists

Agonists:
Long IVF cycles
Flare up effect for short cycles
Suppression of LH surge

Antagonists:
Suppression of LH surge in short cycles

Luteal Phase Support

Indications:
To support the endometrium after
pituitary down-regulation by agonists.
After antagonist treatment.

Drugs:
hCG
Progesterone IM
Cyclogest PV/PR

Endometrial preparation

Preparation of the endometrium for
the replacement of donated fresh or
freeze/thawed embryos

Oestrogen Progesterone

HRT for Embryo Transfer

	1-5	6-9	10	15	16	17	18	32	42+
LhRH agonist	Start day 21 of cycle and continue today 14 of oestradiol valerate								
Oestradiol valerate	1mg	1mg bd	2mg tds until further notice						
Cyclogest pessaries			200mg nocte	400mg od	400mg bd and continue until further notice				
Embryo transfer						ET			
Scans			Endometrial thickness						Preg scan
Preg Test								Preg test	

Induction of Ovulation

Used in women who have oligo amenorrhoea.

Aim is to mimic nature and produce a single follicle.

Start with a low dose (37.5 iu)x10 days and increase gradually at weekly intervals.

Dopamine agonists

Used to treat hyperprolactinaemia

Bromocriptine

Carbergoline

Introduce gradually as side effects are common

Conclusions

- Array of effective drugs for use in reproductive medicine
- Value of clomiphene in ovulating women ??
- Gonadotrophins highly effective but associate with severe side effects (OHSS and multiple pregnancies)
- Endometrial preparation for thawed and donated embryos
- Dopamine agonists effective but side effects common
- Thank you for your attention
