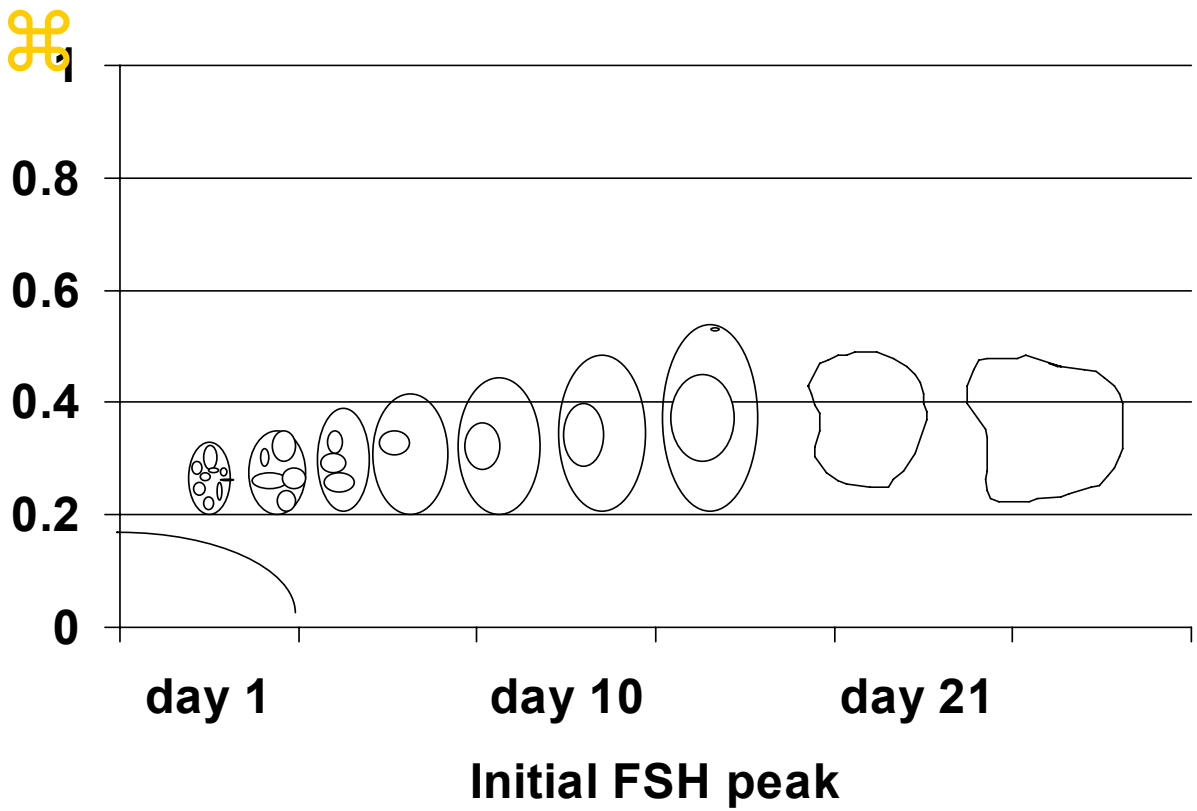
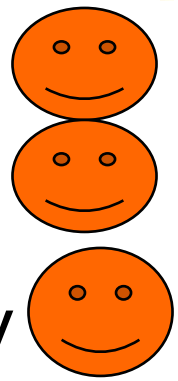
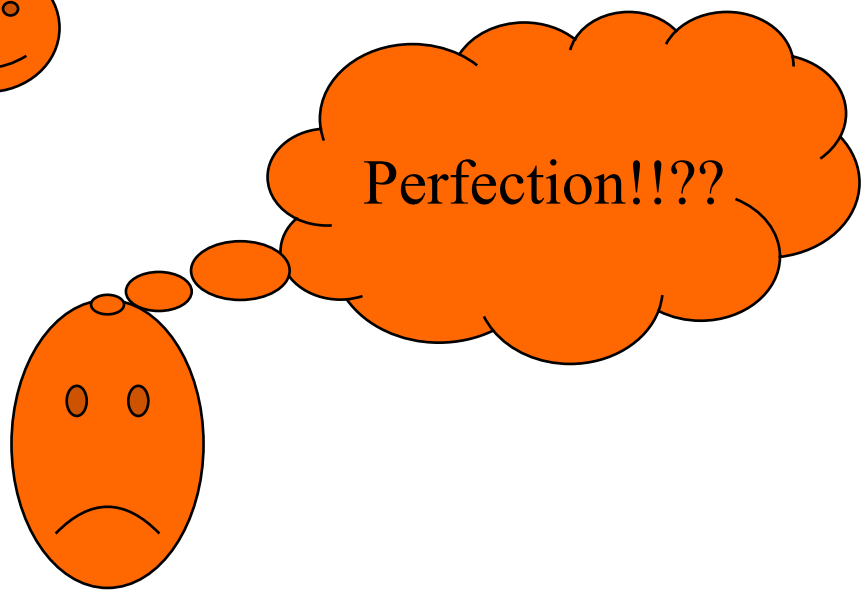
FSH Initial Peak



HMG(75IU Fsh/75IU Lh) Controled Ovarian Hyperstimul.

- Multiple Eggs
- Better Eggs
- Better Pregnancy Rates





- Multiple Pregnancy
- Hyperstimulation Syndrome

Against LH

- Elevated levels of serum LH during the follicular phase are not only unnecessary for follicular maturation but are deleterious to normal reproductive processes.
- These elevations may occur as a result of administration of exogenous LH or endogenous pathological process (i.e. PCOD)
- Elevated levels of LH during the preovulatory period may also negatively influence postovulatory events such as folliculogenesis, conception and implantation.

Jacobs et al. theory :

- ↑ LH during follicular development prior to LH surge, prematurely initiates resumption of meiosis resulting in ovulation of post-mature oocytes.
- If fertilized ….low viability embryos and early pregnancy loss.

So let's take away the LH !

- It was believed that best results for ovulation induction would be expected with Rec FSH following GnRh down regulation hormone.

And What happened ???

- When FSH alone is used to stimulate follicular development, follicular growth occurs, but E_2 secretion is minimal, resulting in deficient endometrial growth and when exposed to hCG these follicles frequently fail to luteinize.

Did we forget about the two cell two gonadotrophin theory ???

- LH stimulates the theca cells to produced androgens and then they are aromatized in the granulosa cells to Estradiol.

So we realized that LH is not so Bad !!!

- And that LH is needed for an “Optimal Induction”.

Creation of Rec LH.

Possible uses of Rec LH :

- LH surge. (shorter half life than hCG), so may promote periovulatory maturation of a more select cohort of follicles. Especially in patients with high risk of OHS.
- Luteal phase complementation ???

Compared to HMG Tx, the use of hRecLH offers a # of differences:

- 1. It's the 1st preparation of LH devoid of FSH activity that is suitable and available for extensive clinical use.
- 2. It has a high specific activity suitable for s.c. injection allowing self administration by the patient.
- 3.By comparison, HMG preparations are given im and contain a large proportion (~95%) of non specific copurified urinary proteins, which can cause hypersensitivity reactions. Furthermore, only a once daily injection of hRecFSH or LH is required in comparison with GnRH, which has to be administered every 60-120 min.

- 4. HMG is associated with an increased risk of multifollicular development, with the potential complications of multiple pregnancy and ovarian hyperstimulation syndrome.

Conclusions

- The development of RecLH used in addition to hRecFSH provides another important therapeutic option to the ovarian stimulation Tx.
- With the recent findings in the use of hRecFSH and hRec LH, and needing more studies, we could theoretical proposed the use of hRecLH in the moment of the sectorial follicle growth when it has developed the LH receptors, trying to have a more control and a few amount of oocytes, and by titration of both gonadotrophin doses for individual patients. Because the two preparations are given separately, the dose of each gonadotrophin can be tailored to the individual's requirements and achieve the goal of **unifollicular cycles**.

Conclusion

- The potential complications seen with HMG therapy (multiple pregnancy and ovarian hyperstimulation syndrome) may be reduced with hRecLH and hRecFSH therapy.
- Imthurn et al. suggested to administrate 15,000 IU of hRecLH to mimic the midcycle LH surge. This practice would be affordable for very few Pxs because of the huge amount of hRecLH ampoules that has to be used and that if we could produced **unifollicular cycles** it would be of no difference the use of hCG as a substitute of the mid cycle LH surge.
- This hypothesis requires more investigation.

Thank You for Your Attention !!!

- Hope to see you all very soon !!!