

The two basic questions that need to be answered are

- 1. When is the luteal phase support required?**
- 2. What is to be used for the luteal phase support?**

In natural cycle, no luteal phase support is required. If follicle quality is good, LH surge is sufficient and there is no CL deficiency. Even when CC is used for ovulation induction, which leads to blockage of oestrogen receptors and so more LH is secreted along with FSH and in these cases luteal phase support is not required. In gonadotrophin stimulated cycles low LH due to high E2 and P, indicates the need of luteal support in all cases of ovarian stimulation. In these patients if hCG trigger is given, it supports CL in the early luteal phase and hCG is produced by the implanting embryo about 8 days after ovulation. In the in between period LPS with P is mandatory and is to be continued till early pregnancy. In these cases P is also given as hCG trigger impedes the CL function by disturbing anterior pituitary function. When GnRha is used either for down regulation or for trigger, it suppresses FSH and LH and in these cases luteal phase support is a must. When GnRh agonist is used as a trigger, oestrogen and progesterone, both may be required for luteal support, where in vaginal progesterone is preferred. More over either dual trigger may be given or hCG(low dose) may be given at the time of ovulation/ pick up or rLH may be used in luteal phase. Though dual trigger is not preferred when $E2 > 4000\text{pg/ml}$. Antagonist decreases LH due to pituitary disruption for a short duration and luteal phase support is required as ovarian stimulation is given. In FET cycles, progesterone is given as LPS in modified natural cycles and both E2 and P in artificial cycles.

Progesterone can be administered by various routes: vaginal, oral, subcutaneous, intramuscular and transdermal. The first four are more commonly used. Low dose hCG (100-150 iu) may be the option for LPS in future.