
بسم الله الرحمن الرحيم

Luteal Phase Defects (LPD)

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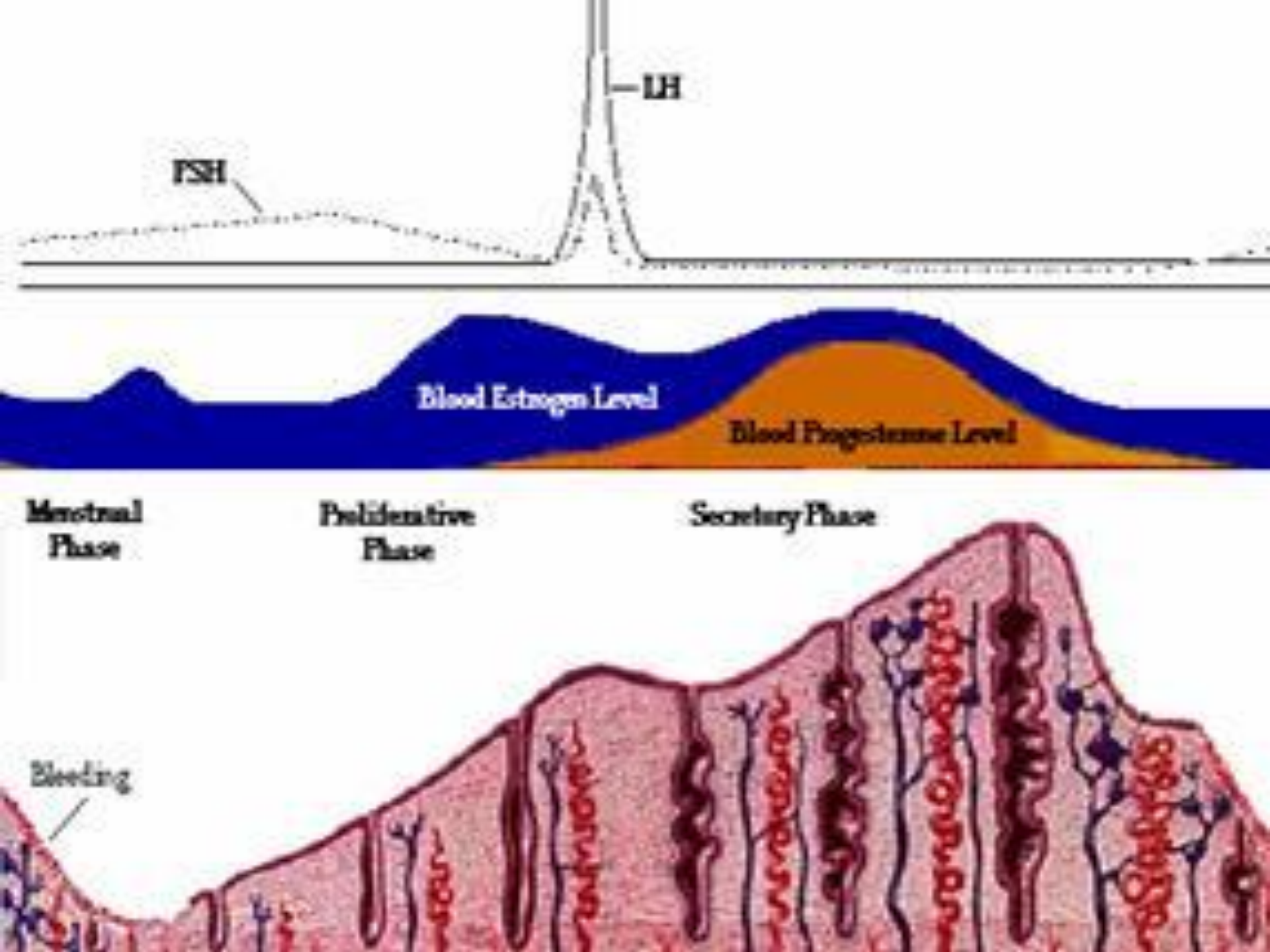
An Overview

- Normal menstrual cycle
- Definition
- Incidence
- Etiology
- Diagnosis
- Management


LH
FSH
Blood Estrogen Level
Blood Progesterone Level
Menstrual Phase
Proliferative Phase
Secretory Phase
Bleeding

Definition

- Insufficient progestrone production by the abnormaly functioninig CL→→

Inadequate LP

or

Short LP

Incidence

- 30% of isolated cycles in normal fertile women
- 5% in 2 successive cycles in normal fertile women
- 1-2% of infertile couple
- More common in women with recurrent early abortions

Etiology

- 1-↓FSH in early follicular phase
- 2-↓LH & FSH surge at the time of ovulation
- 3-↓Endometrial response to progestrone
- 4-↑Prolactin
- 5- Iatrogenic (CC & GnRha as an adjuvant to HMG therapy)
- 6-Recently free O2 radicals (oxidative stress)

Diagnosis

- is **not definite** & its contribution to infertility is **not certain**

- Should be **considered** or **suspected** in
  -Unexplained infertility
  - Recurrent early pregnancy loss
  - GnRha used in ART to produce COH

- **1-BBTC**→diagnose short luteal phase
  Alone is not reliable
- **2-Midluteal serum progestrone assay**

a- Define timeof ovulation by

-Repeated U/S

-BBTC

-Home urinary LH surge

b-7 days after ovulation

c-Repeated once or twice at 2 days interval

d-should be <10ng/ml in any of these days

- **3- Dating of the endometrial biopsy**

->2 days lag

-Variability between pathologists & with the same pathologist on repeated assessment of the same specimen

Management

- *Seven TTT modalities have been proposed*

1-CC
2-Gonadotrophins
3-Bromocreptin
4-HCG
5-Progestrone
6-Antioxidants
7-LMWH

1-Clomiphene citrate

- Is the TTT of choice for patients with short luteal phase
- CC on day 2-6 of the cycle→↑FSH in early follicular phase
- CC→LPD (antiestrogenic effect)

2-HMG

- Should start on day 2 with small dose (one ampoule/day) & ↑ the dose according to the ovarian response
- Induce better follicular recruitment & early development

3- Bromocreptin

- For hyperprolactinaemic patients & may be galactorrhea

4- HCG

- Widely used in IVF programmes
- 2000IU IM every other day
- **Begin** on the day of the rise of BBT
- **Continue** until menses or 10th week of conception
- **Disadvantages**

1-↑OHSS

2-Qualitative pregnancy test can not be used for diagnosis of pregnancy

5- Progestrone

- Enhances secretory transformation of the endometrium & maintains the decidua until the placenta takes over the function of progestrone production

Transformational dose:

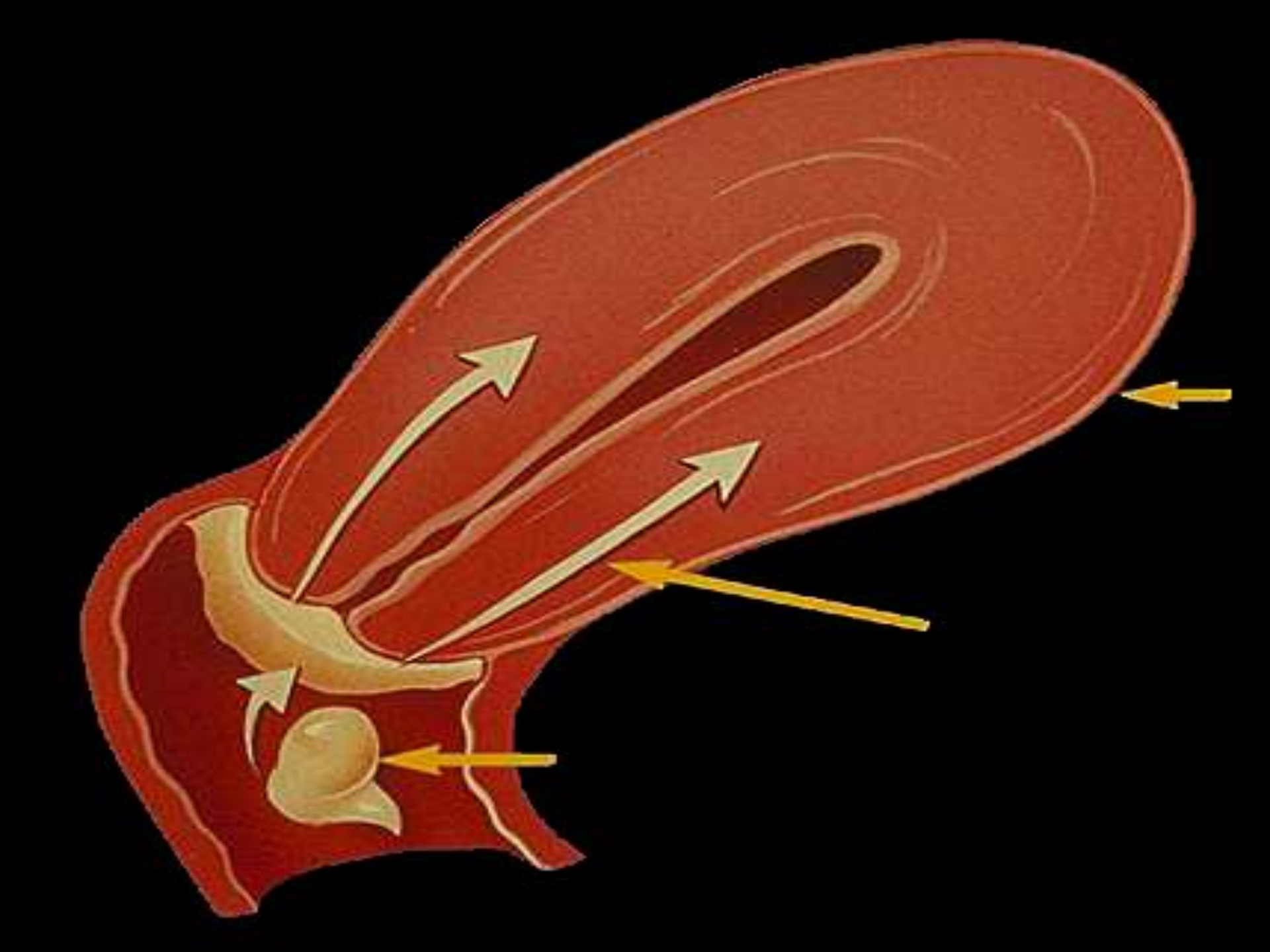
In women whose ovaries are absent or inactive

“ Sequential adminstration of E2 & P in physiologic doses has been shown to induce normal secretory transformation of the endometrium

This measured by mg/day & mg/cycle

It is determined by Progestogenic activity & route of adminstration

- **Time-** Start 2-3 days after ovulation (timing)
  -Continue until menstruation or 10th week of pregnancy
- **Type**-Natural (Not synthetic Why??)
- **Route**- oral
  vaginal
  IM
- **Dose** 100 mg tid pill of micronized progestrone oral or vaginal
  -25 mg progestrone suppository bid
  -12.5 mg oily progestrone IM



- **Disadvantage-**delay of mense & BBT maintain elevated in absence of pregnancy

6-Antioxidants
(Vit C,E & ά-tocopherol)

- 750mg Ascorbic acid daily (dose ??)
- **Mechanism**

  1-inhibit follicular apoptosis in cultured rat follicles

  2-enhance the ovulation inducing effects of CC by local ovarian effect
- **Ascorbic acid deficiency→**

  1- ovarian atrophy

  2-Extensive follicular atresia

  3-premature resumption of meiosis

In addition to direct effects of heparin on the coagulation cascade,

heparin might protect pregnancies by:

a. reducing the binding of antiphospholipid antibodies

b. reducing inflammation

c. facilitating implantation

d. inhibiting complement activation

TAKE HOME MESSAGES

1. Selecting progesterone preparation in daily practice should take transformational dose into consideration

2. Addition of hCG injection or estradiol supplementation as luteal phase support does not increase pregnancy rate

3. No evidence favouring a specific route or duration of administration of progesterone

4. There could be a potential of LMWH treatment for some specific group of women

Thank you

Any Questions?

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