



核心課程編號：F3

月經週期異常

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109年02月20日第六版



學習目標

一年期 PGY 核心課程	學習目標	UGY 相關核心課程	學習目標
月經週期異常、經痛 及陰道出血	<p>Medical Knowledge (MK) Patient Care (PC) Interpersonal and Communication Skills (CS) Professionalism (P) Practice-Based Learning and Improvement (PLI) Systems-Based Practice (SBP)</p> <p>知識</p> <ol style="list-style-type: none"> 1. 月經異常與一般疾病的可能相關。(MK) 2. 女性於停經前經期改變之特徵。(MK) <p>技能</p> <ol style="list-style-type: none"> 1. 內診及窺陰器擺放技巧。(PC、CS) 2. 月經異常之鑑別診斷及基本處理原則。(P、PC) 3. 婦科超音波之基本判讀。(P、PLI) <p>態度與專業素養</p> <ol style="list-style-type: none"> 1. 學習有條理的分析異常月經之意義並緩解病患恐慌。(PC、PLI) 2. 提供最具成本效益之治療方式。(PLI、SBP) 	<p>正常月經機轉、月經異常、(經痛併到下腹痛)、不正常出血</p>	<p>Medical Knowledge (MK) Patient Care (PC) Interpersonal and Communication Skills (CS) Professionalism (P) Practice-Based Learning and Improvement (PLI) Systems-Based Practice (SBP)</p> <p>知識</p> <ol style="list-style-type: none"> 1. 各種月經異常專業術語之定義。(MK) 2. 月經的機轉。(MK) 3. 各種造成月經異常疾病之基本知識。(MK) 4. 口服賀爾蒙藥物之副作用及效果。(MK) <p>技能</p> <ol style="list-style-type: none"> 1. 學習收集及詢問婦女的一般婦產科病史。(PC、CS) 2. 詳細精確的描述患者月經狀態。(PC、MK) 3. 婦產科超音波之使用時機。(PC、P) <p>態度與專業素養</p> <ol style="list-style-type: none"> 1. 於收集病史時避免使患者感到受侵犯及不適。(PC、CS) 2. 於問診及檢查時以同理心安撫患者。(PC) 3. 學習搜尋與月經異常相關之實證醫學知識。(P、PLI)



月經週期異常



Content

- ✓ **Normal Menstrual Bleeding**
- Endometrial Responses to Steroid Hormones: Physiologic and Pharmacologic
- Anovulatory Bleeding
- Differential Diagnosis
- Diagnostic Evaluation of Abnormal Bleeding
- Treatment of Anovulatory Bleeding
- Endometrial Hyperplasia and Neoplasia
- Nonspecific Treatment for Abnormal Menstrual Bleeding
- Summary of Clinical Principles

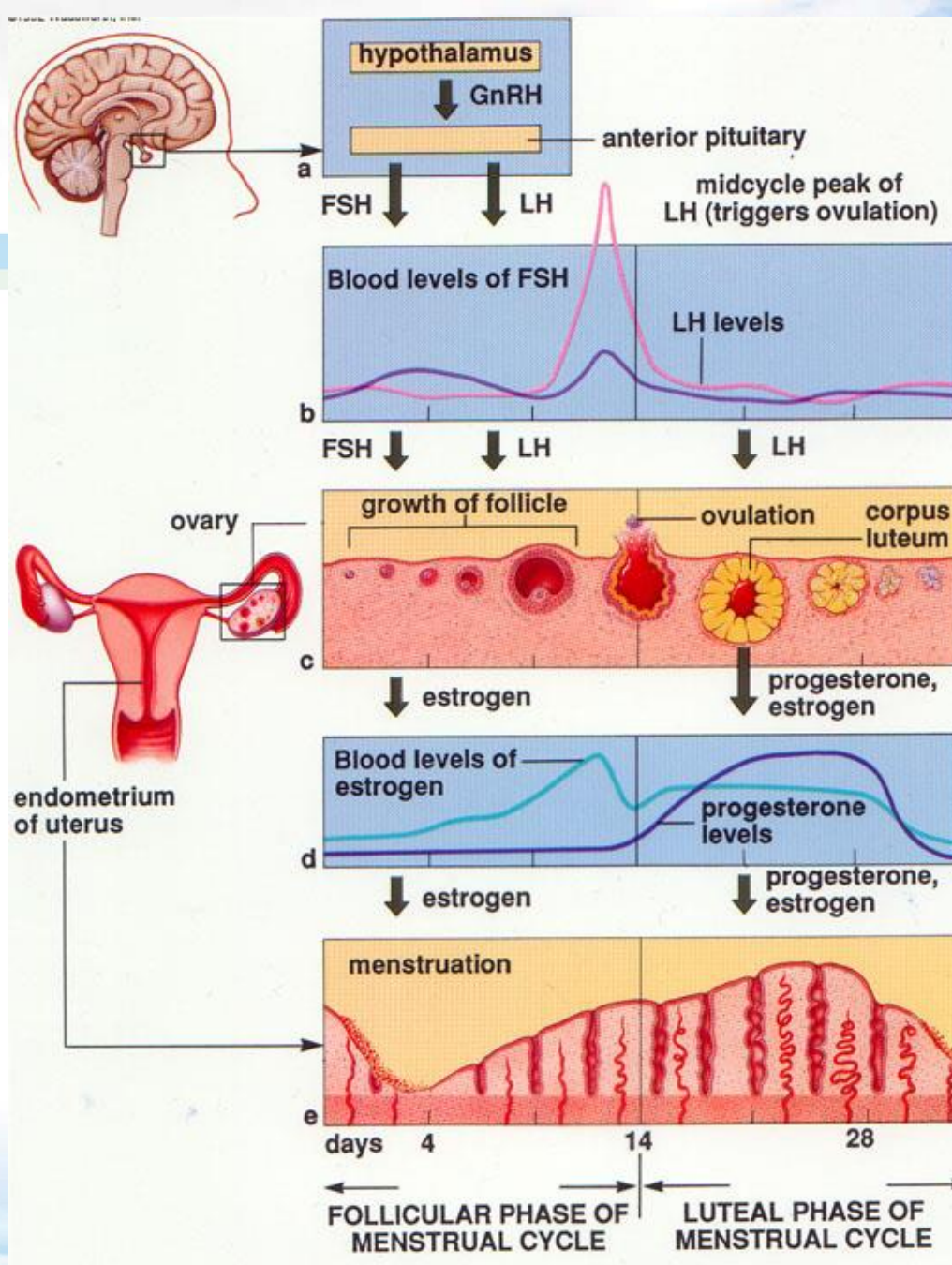


月經的機轉

- Hormone profile
- Menstrual history: normal v.s. abnormal
- Predictable pattern, volume, and duration, premenstrual molimina

Menstrual Period Characteristics

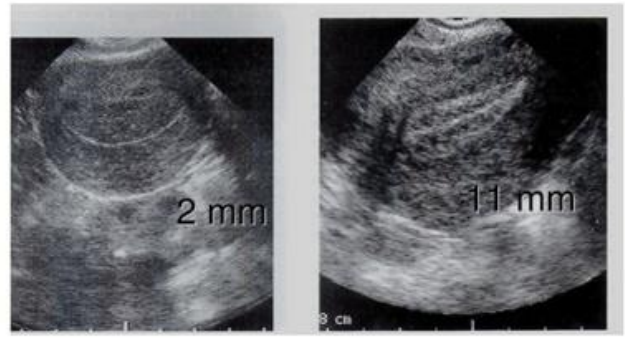
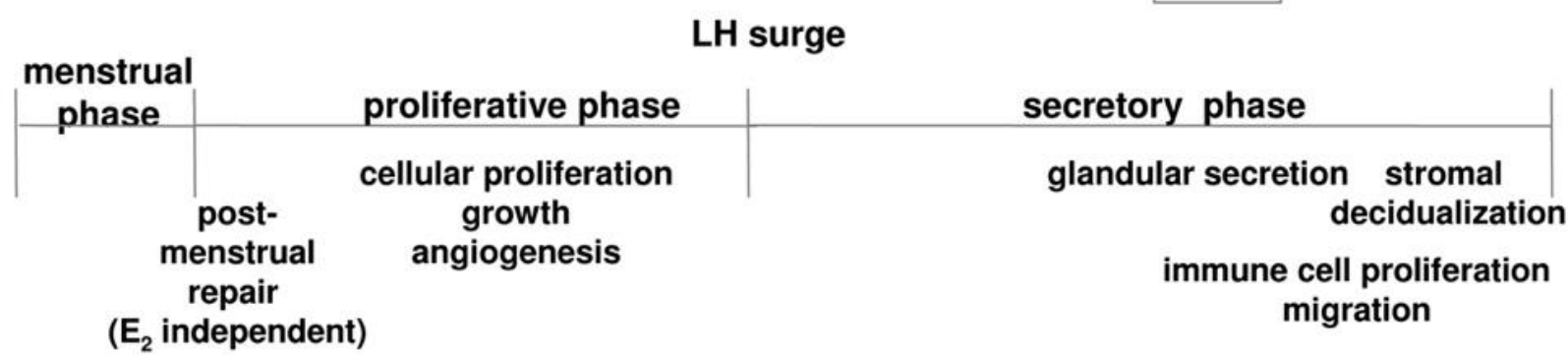
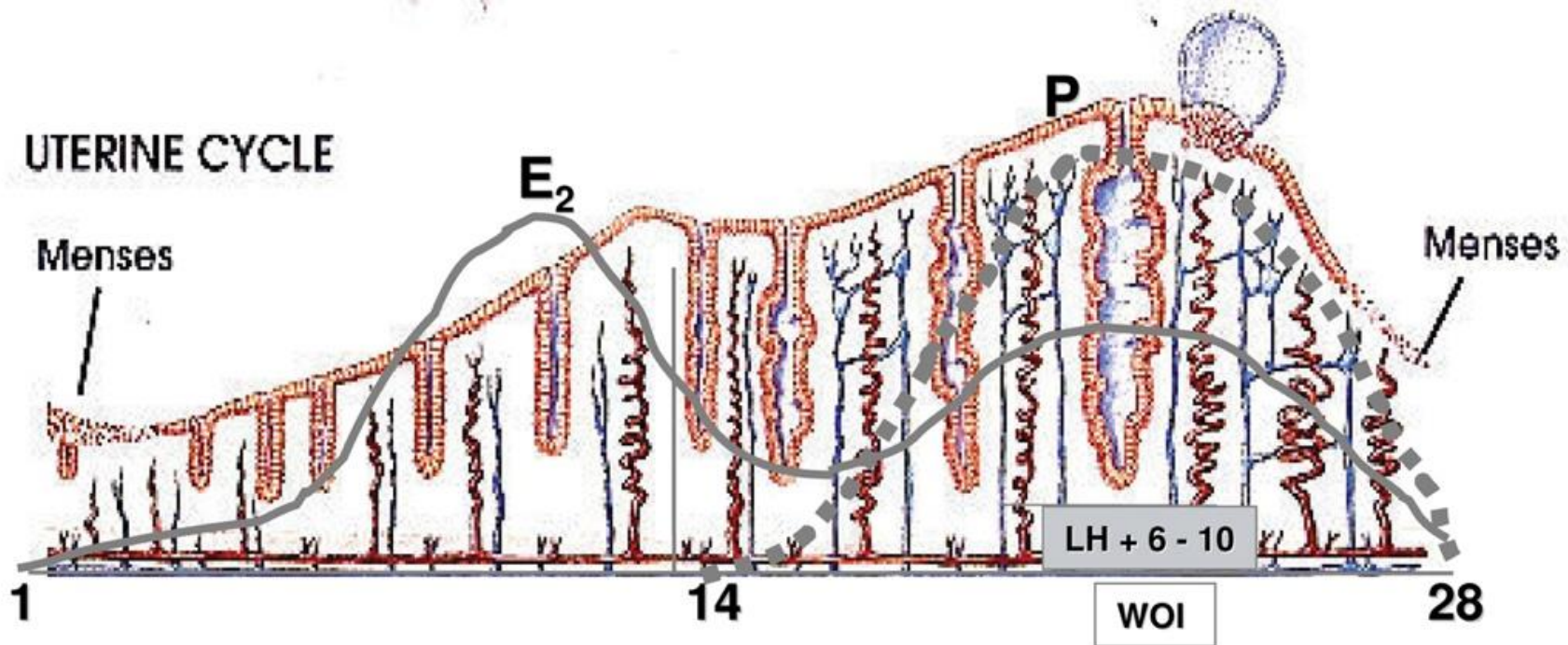
	Normal	Abnormal
Duration	4–6 days	Less than 2 or more than 7 days
Volume	30 mL	More than 80 mL
Interval	24–35 days	



Proliferative phase Secretory phase

Ovarian Cycle
Endometrial Cycle

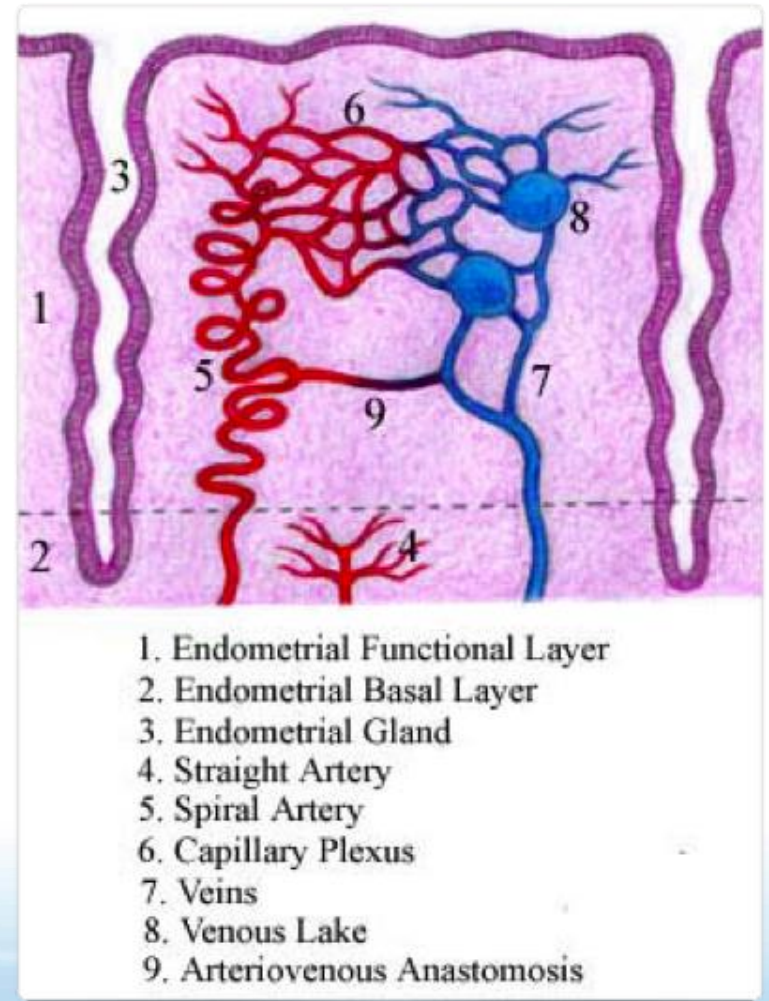
UTERINE CYCLE





Mechanisms In Normal Menstruation

- Vascular events
- New model
 1. **Initiations**: enzymatic auto-digestion of functional layer
 2. **Cessation**: coagulation, vasoconstriction, re-epithelialization





Mechanisms In Normal Menstruation

● Initiations

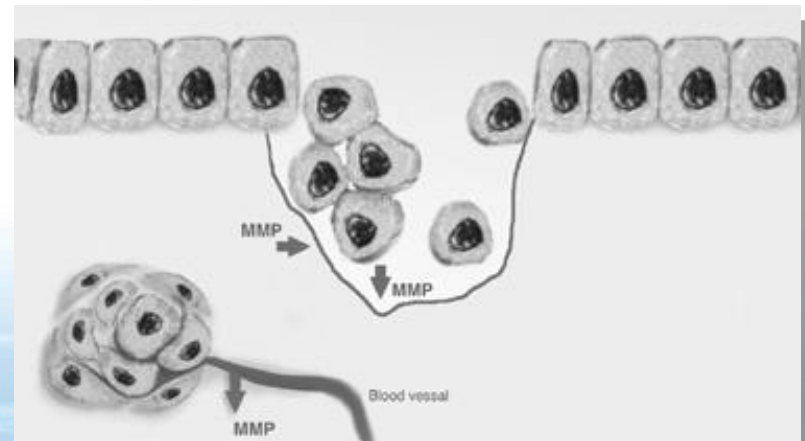
1. Progesterone withdrawal

- enzymatic degradation
- intracellular lysosomal enzyme
- proteases from inflammatory cells

2. Matrix metalloproteinases \uparrow : dissolution of extracellular matrix

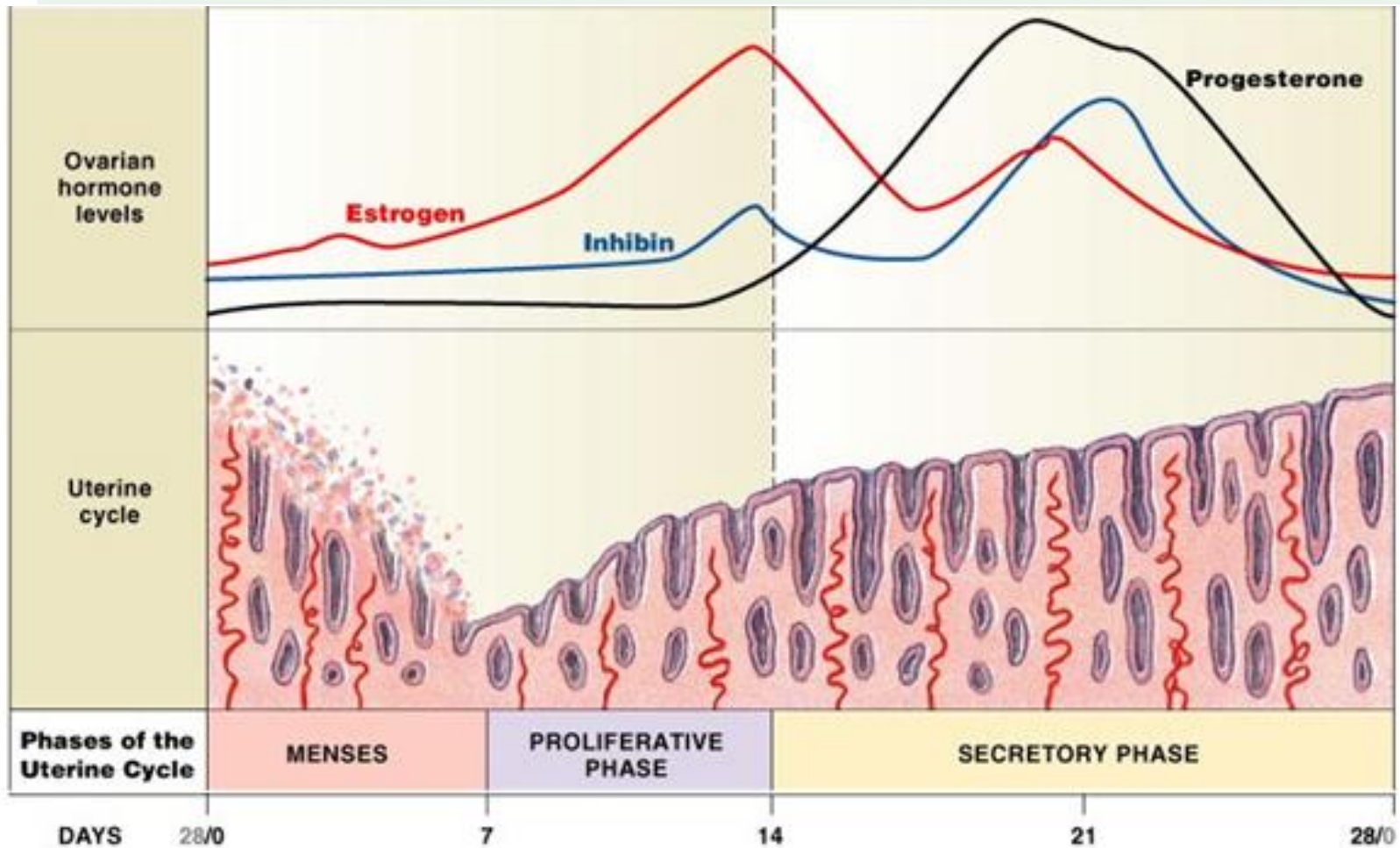
● Menstrual fluid: autolysed endometrium

1. inflammatory exudate
2. red blood cells
3. proteolytic enzymes





不同月經狀態之描述

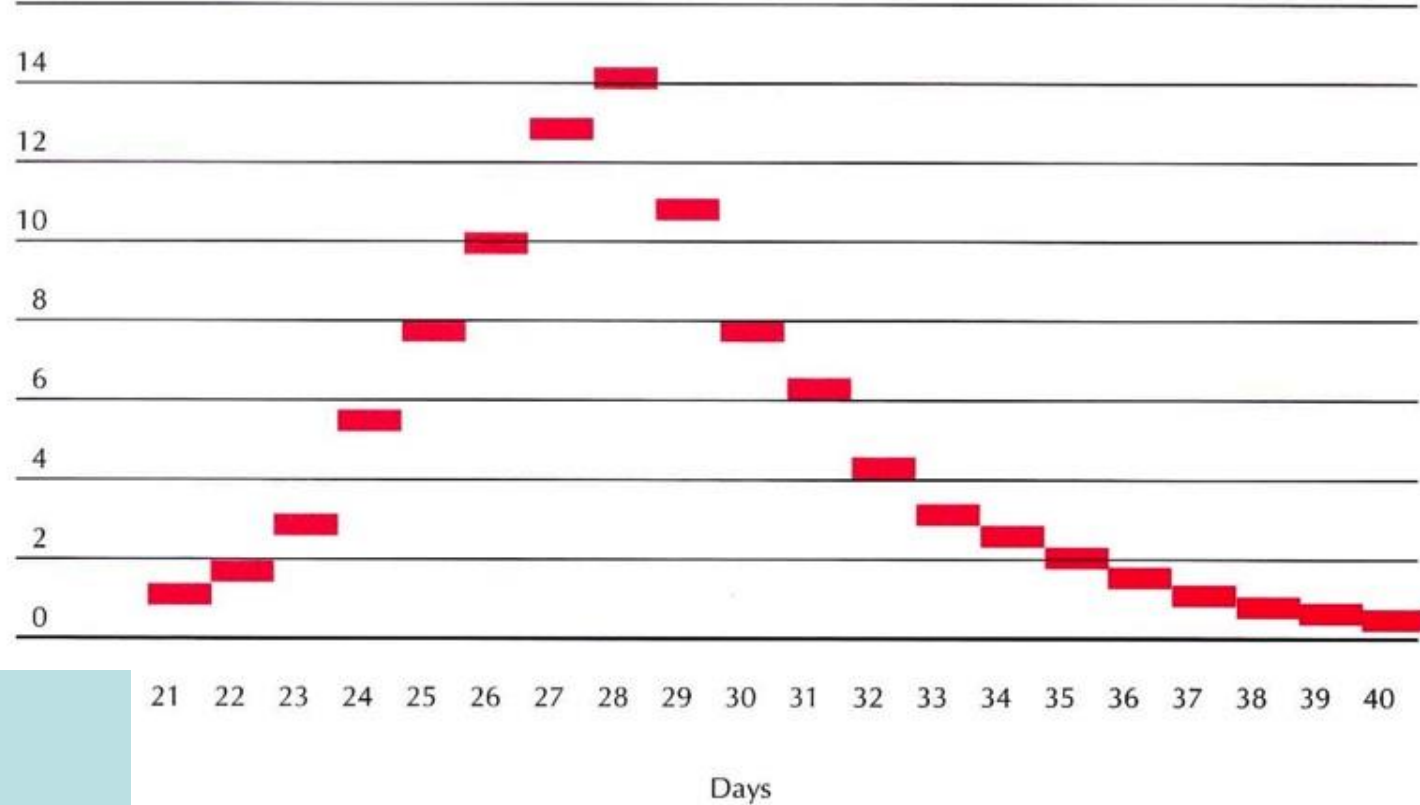


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Length of Menstrual Cycles

Percentage of incidence





女性於停經前經期改變之特徵

荷爾蒙變化

❖ Hypergonadotropic Hypogonadism

- Elevated levels of both FSH and LH
- FSH > 20 IU/L --- Perimenopausal years
- FSH > 40 IU/L --- Menopause
- Decreased levels of inhibin
- Decreased levels of estradiol (10-20 pg/ml)



女性於停經前經期改變之特徵

身體變化



- **腦部**
記憶力減退
失憶症
(阿滋海默症)
- **皮膚**
皮膚乾燥老化
皺紋增加
- **生殖道**
陰道萎縮
陰道感染增加
性交疼痛
- **結腸**
研究指出荷爾蒙
補充療法對結腸癌
有預防意義
- **泌尿道**
尿道萎縮
頻尿
尿失禁
尿道感染增加

- **眼睛**
視網膜黃斑退化
- **血管舒縮症狀**
熱潮紅
盜汗
失眠
心悸
- **牙齒**
牙齒脫落
- **心臟**
心肌梗塞
心絞痛
缺血性心臟病
- **骨骼**
骨質流失
骨質疏鬆症
骨折危險性增加



各種月經異常專業術語之定義

- Menorrhagia
- Metrorrhagia
- Menometrorrhagia
- Hypomenorrhea
- Polymenorrhea
- Oligomenorrhea
- Dysfunctional Uterine Bleeding



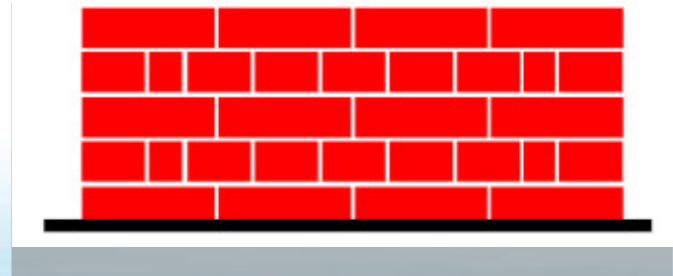
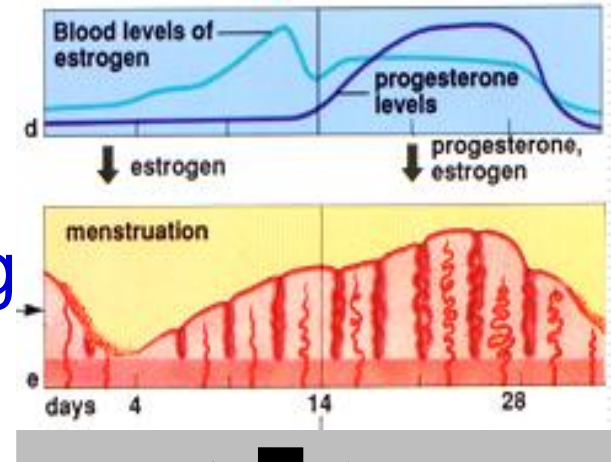
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Endometrial Response To Steroid Hormone

- Estrogen withdrawal bleeding
- Estrogen breakthrough bleeding
- Progesterone withdrawal bleeding
- Progesterone breakthrough bleeding





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Anovulatory Bleeding

- **Definition:** always follicular/ proliferative phase

- only **estrogen** stimulation

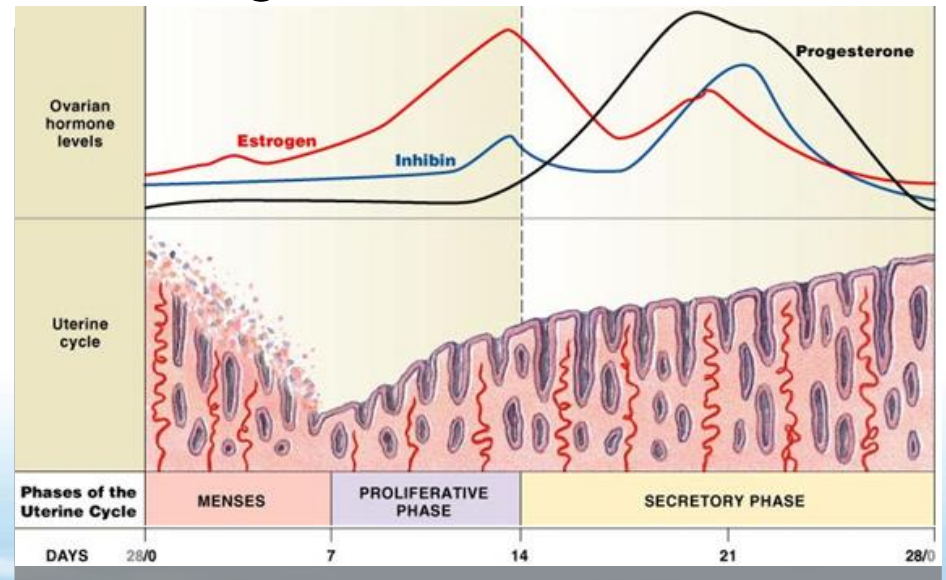
- estrogen withdrawal bleeding

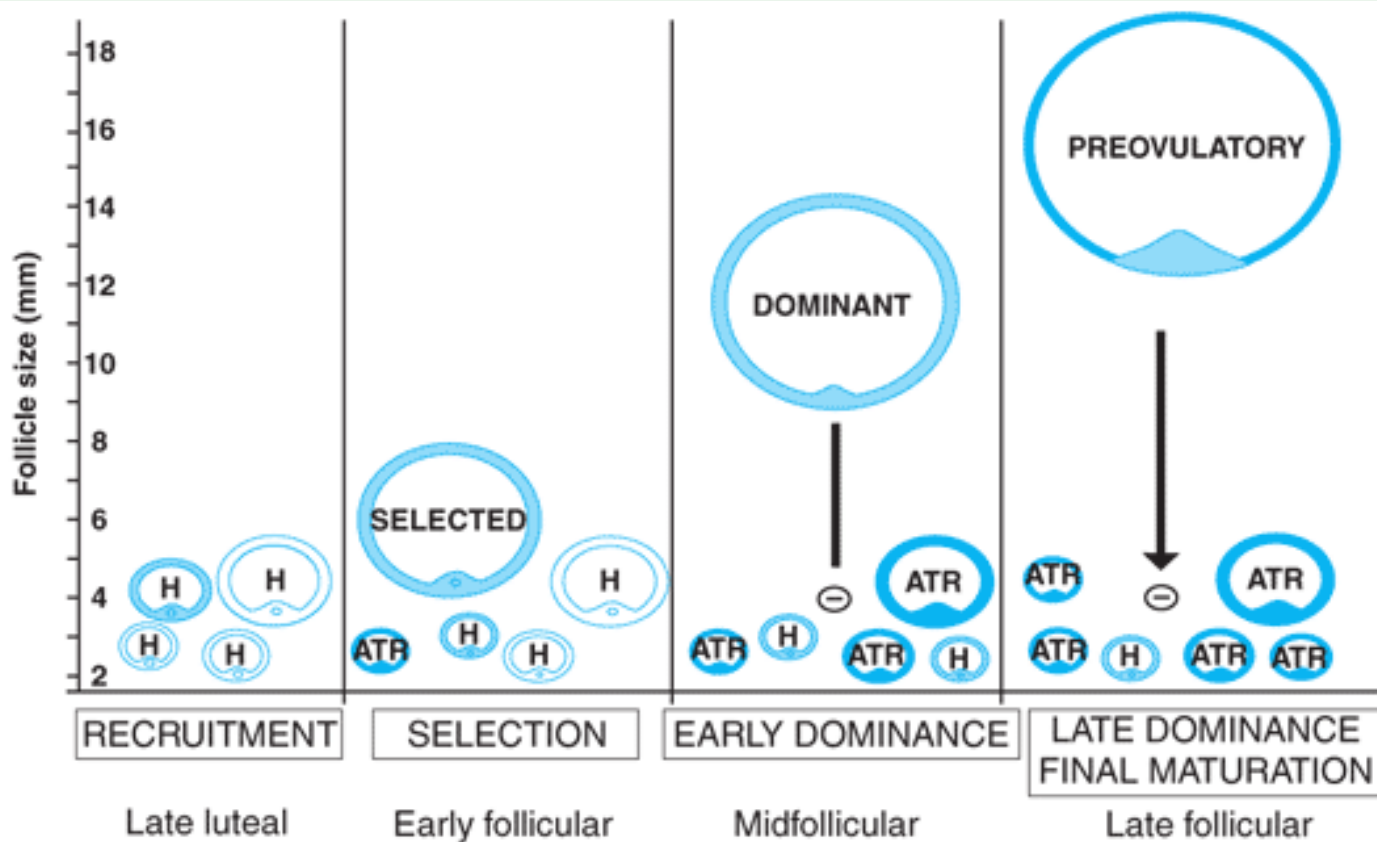
- estrogen breakthrough bleeding

- **Molecular studies:**

- lysosomal proteolytic enzyme,

- prostaglandins, perforins







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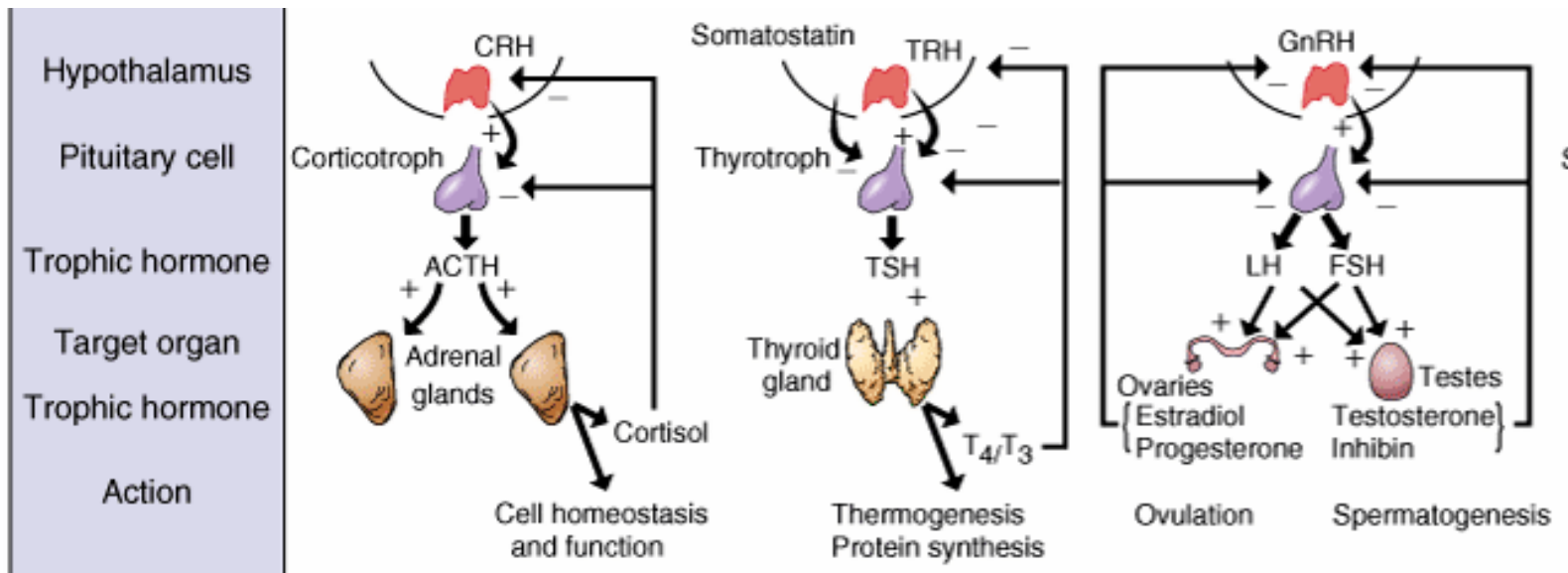


各種造成月經異常疾病之基本知識

DUB is a diagnosis made by exclusion.

- Pregnancy
- Hormone therapy
- Anatomical lesions: benign uterine neoplasia, malignancy
- Medical condition:
 - thyroid disorder
 - coagulopathy
 - medications (steroid, anticoagulants, Tamoxifen, herbs)
 - severe systemic disease: renal/ liver failure
- Genital trauma, Foreign bodies (IUD)
- Post-tubal ligation syndrome (Sterilization)

Pharmacologist



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月經異常之鑑別診斷及基本處理原則

- **Menstrual history:** single most useful tool in DDx.
- Physical examinations
- Laboratory test: not always helpful
 1. pregnancy test,
 2. B/R (anemia, thrombocytopenia),
 3. serum progesterone (>3 ng/ml-> recent ovulation),
 4. TSH,
 5. coagulation test,
 6. liver/ renal function,
 7. endometrial biopsy: history of unopposed estrogen exposure, endometrial thickness ≥ 12 mm, age ≥ 40 y/o
- Image: anatomy



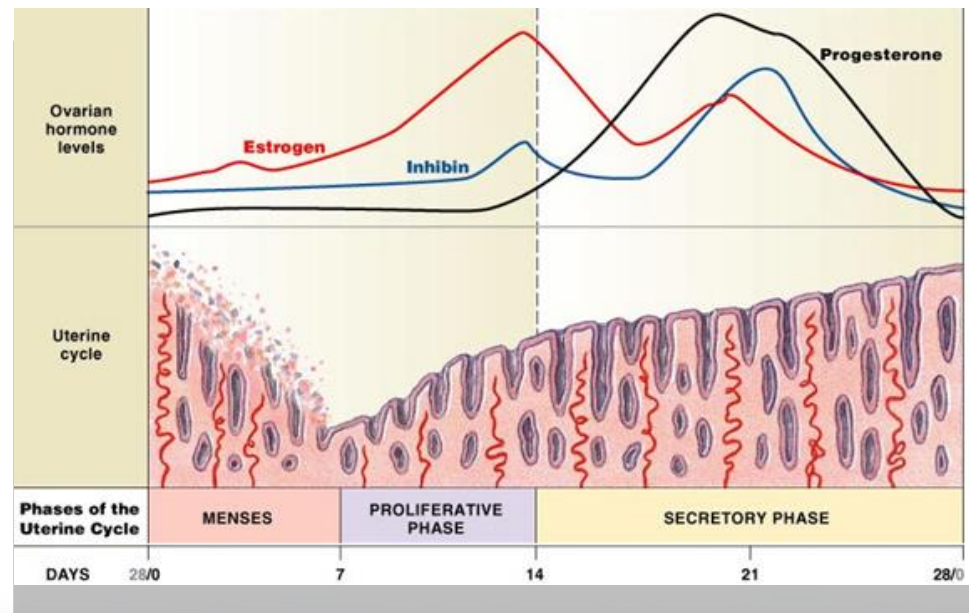
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Treatment Of Anovulatory Bleeding

- Natural control mechanism: orderly, synchronous growth, development and shedding
- Progestin therapy
- Oral contraceptive therapy
- Estrogen therapy
- Dilatation and Curettage





口服賀爾蒙藥物之副作用及效果

- ❖ Progestin Therapy
- ❖ Oral Contraceptive Therapy
- ❖ Estrogen therapy



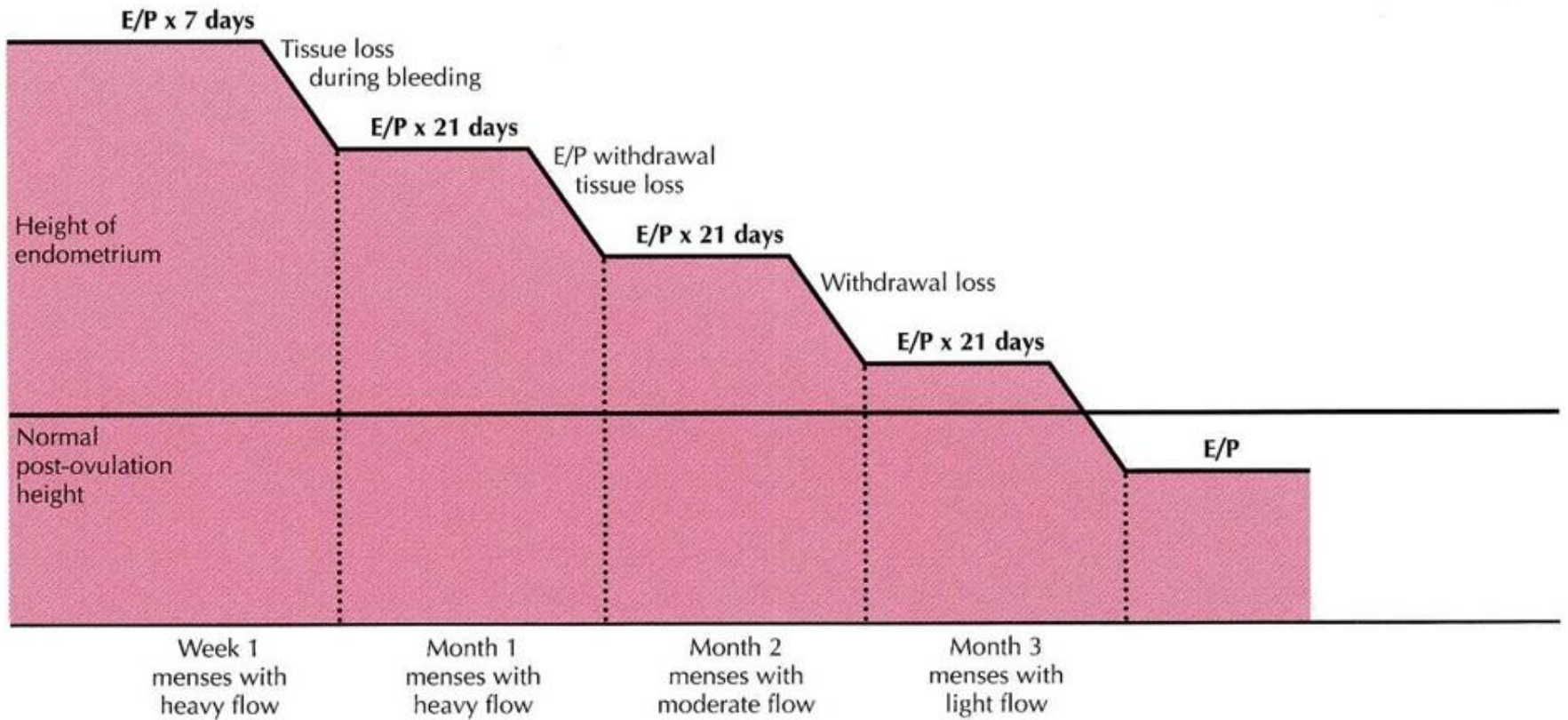
Progestin Therapy

- Exclude uterine pathology
- Oligomenorrhea with heavy or prolonged bleeding
- Powerful anti-estrogens
 - > anti-mitotic, growth-limiting effect on endometrium
- Cyclic treatment with oral progestin
 - > medroxyprogesterone acetate /MPA (Provera, Medrone)
5-10 mg PO QD x 14 days / month (15-16 days after menses)
- DO NOT suppress the hypothalamic-pituitary-ovarian axis
 - > No contraceptive effect
- For menorrhagia, polymenorrhea
 - > medical curettage



Oral Contraceptive Therapy

- Prolonged episodes of heavy anovulatory bleeding
 - combined estrogen/progestin therapy
- Low-dose monophasic 1# BID x 5-7 days
- Higher doses progestin therapy
 - medroxyprogesterone acetate (MPA) 20 mg QD
 - norethindrone acetate 5 mg QD
- further evaluation if failed medication



E/P = Estrogen-Progestin combination



Estrogen therapy

- **Thin endometrium:**
 - ➔ low levels of estrogen stimulation
 - ➔ estrogen breakthrough bleeding
- **For progestin breakthrough bleeding**
- **Risk of thromboembolism**



Estrogen Therapy

- ❖ High dose estrogen to relieve acute bleeding:
25 mg conjugated estrogen iv q4h x 24 hrs
↓
- ❖ 1.25 mg conjugated estradiol / 2.5 mg micronized estradiol
PO q4-6h x 24 hrs
↓
- ❖ 1.25 mg conjugated estradiol / 2.5 mg micronized estradiol
PO qd x 7-10 days
↓
- ❖ progestin/estrogen-progestin contraceptives
(endometrium stabilization)



Dilatation and Curettage

- most expeditious and effective way to stop acute uncontrollable uterine bleeding
- hemodynamic unstable patient
- surgical denudation of the basal layer



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Endometrial Hyperplasia and Neoplasia

Associated Risk of Adenocarcinoma

Atypia	Simple Hyperplasia	Complex Hyperplasia
without	1%	3%
with (endothelial intraepithelial neoplasia)	8%	29%



Endometrial Hyperplasia and Neoplasia/ Treatment

- NO atypia

- ➔ Cyclic progestin therapy

1. medroxyprogesterone acetate (MPA) 10 mg QD x 14 days
2. norethindrone acetate 5 mg QD x 14 days

- ➔ Oral contraceptives

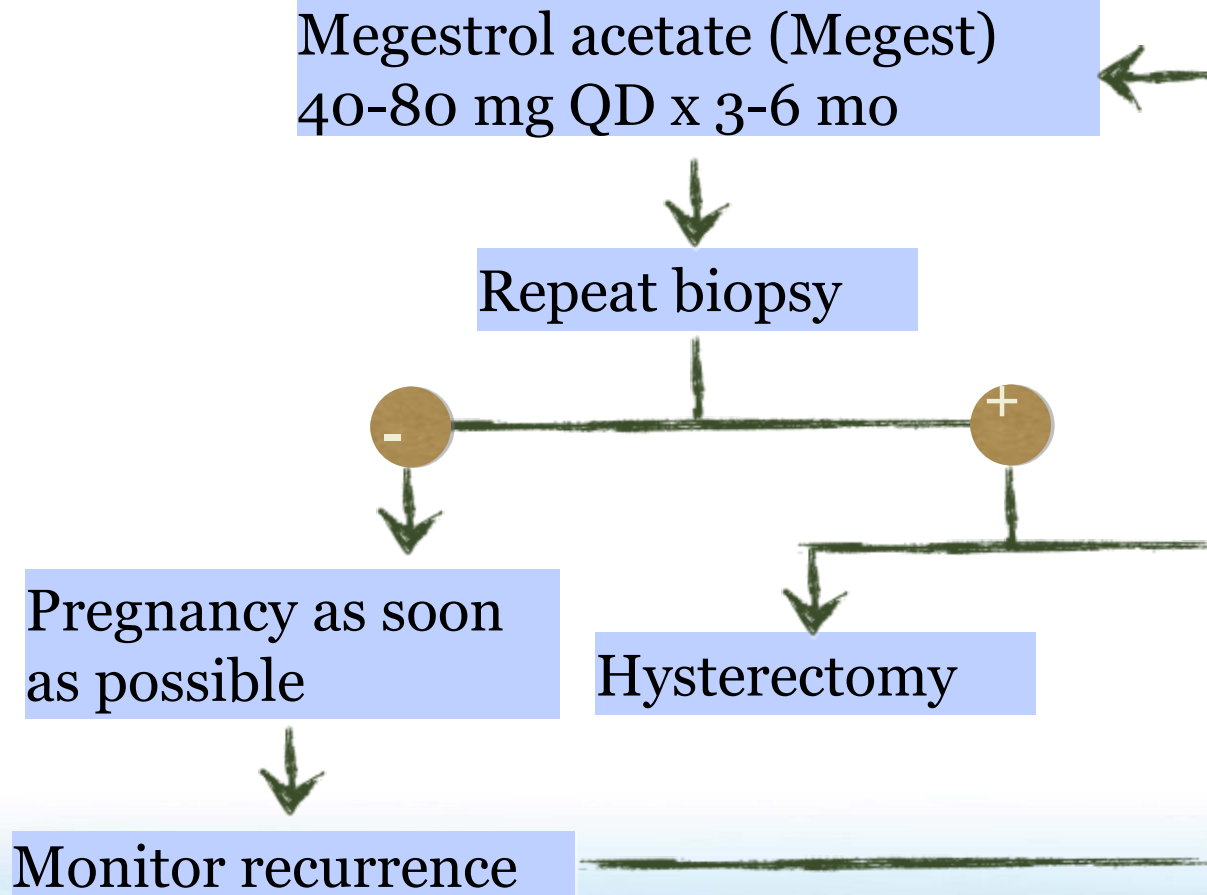
- ❖ WITH atypia

- ➔ Surgery

- ➔ Preserve reproductivity



Preserve Reproductivity





月經異常與一般疾病的可能相關

- Pregnancy, Hormone therapy, Genital trauma, Foreign bodies, Cervical/ endometrial lesion
- Chronic endometritis
- Uterine leiomyomas
- Endometrial polyps
- Adenomyosis
- Bleeding disorder



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Nonspecific Treatment for Abnormal Menstrual Bleeding

- Nonsteroid Antiinflammatory Drugs (NSAIDs)
- Oral Contraceptives
- The Levonorgestrel IUD (LNG-IUD, Mirena)
- Gonadotropin-Releasing Hormone Agonists (GnRHa)
- Other Medical Treatment Strategies: danazol (200 mg QD), Tranexamic acid (2-6 gm QD)
- Endometrial Ablation: not recommended for high risk of endometrial cancer



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Summary

Summary of Clinical Principles

Teenager	Adult
<i>Preliminary:</i>	<i>Preliminary:</i>
Pelvic or rectal examination	Pelvic examination
Rule out pregnancy	PAP smear
Appropriate laboratory tests	Rule out pregnancy
	Appropriate laboratory tests
	Endometrial biopsy



Summary

- Logical approach to the evaluation and treatment: history, physical examination, lab data, image...
- Differential diagnosis 
- Characteristics of anovulatory bleeding
- Endometrial biopsy
- Treatment: cyclic progestin, oral contraceptives, estrogen therapy, endometrial curettage
- Endometrial hyperplasia