

Menopause

Premature menopause (POF)

- Age of menopause genetically determined (X chromosome)
- POF may be idiopathic or result from exposure to toxic substances
- Dx made by hormonal profile
- Ovarian volume (ultrasound) may distinguish simple POF from insensitive ovary syndrome (immunological?)

Menopause

Estradiol (E2) and Coronary Heart Disease (CHD)

- Oral E2 increases HDL and lowers LDL
- E2 induces direct vasodilative effects (NO and non NO mediated)
- E2 decreases smooth muscle proliferation
- E2 improves vascular reactivity

Menopause

Progesterone and CHD

- Progesterone and synthetic progestins differ
 - may have opposing effects
- Progesterone may have beneficial cardiovascular effects of its own

Menopause

Coronary Heart Disease (CHD)

- Lower CHD incidence in women before menopause
- After menopause, similar CHD incidence in men and women
- Ovarian function protects against CHD

Menopause

Bone mass and Osteoporosis

- Bone: constant remodeling
- Bone mass reflected by: bone formation
 bone resorption
- Gonadal failure increases bone resorption
- Mediator of gonadal action: E2
- Bone loss leads to osteoporosis
- HRT normalizes bone balance

Menopause

Hot Flashes (HF)

- Episodic resetting of thermostat after progressive upward slide of BBT reference
- Ends when BBT reaches new lower setting

Menopause

Hot Flashes (HF)

- Emblematic symptom for menopause
- Episodic phenomenon with:
 - upper body vasodilatation
 - intense perspiration
 - unpleasant psychological symptom(s)
- Up to one every 60 minutes, timely related to episodic LH elevations
- Only after prior exposure to E2
- Aggravated by hot climate

Menopause

Symptoms & Consequences

- All linked to estrogen deprivation
- Symptoms include:
 - Hot flashes
 - Sleeping disorders
 - Decreased energy
- Consequences (not perceived immediately):
 - Negative bone balance leading to osteoporosis
 - Loss of cardiovascular protection provided by ovarian function

Menopause

Premature menopause (POF)

- Age related alterations start at approximately 42-44
- Ovarian production of proteins affected first (clinically silent)
- Ultimately, ovulation disorders result in dysfunctional/breakthrough bleeding (Pre/peri-menopause)
- DUB may be associated with hyperplasia

Menopause

Definition

1. Amenorrhea $>$ 6 months due to ovarian failure

Pre/Peri menopause hormonal and functional changes that immediately precede menopause

2. Today, menopause is seen as the ultimate stage of a 6-8 years ageing process

Menopause

Hormone Measurements

- Not helpful when menopause occurs at expected age
- Reflect instant status, fluctuate a lot
- Hormonal profile helps to clarify premature symptoms
- Can not accurately predict fecundity
- Ovarian volume (ultrasound) helpful