Menopause

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Objectives:

• 1. to define perimenopause and menopause
• 2. Pathophysiology of perimenopause and menopause
• 3. pharmokinetics and pharmodynamics of conventional HRT, bioidentical hormones and complimentary therapies
• 4. therapeutic options
• 5. follow up care and monitoring

Menopause

• What is menopause?
  – Permanent cessation of a woman’s menstrual cycle for 1 year
• What is perimenopause?
  – The time immediately before and after the menopause
Menopause

• This transition from having menses to cessation of menses; occurs from ages 45-55 yo with the average age 51 yo
• No predictability to pattern of menses during that time
  – Symptoms of perimenopause may begin in a woman's thirties
  – There is no correlation between time of menarche and age of menopause

Symptoms of menopause

• Wide range of symptoms for women ranging from no symptoms to any of the following:
  – Hot flashes low sex drive
  – Night sweats panic attacks
  – Mood changes facial hair growth
  – Sleep disturbances crow’s feet
  – Brain fog fatigue
  – Weight gain
  – Vaginal dryness

What is the cause of menopause?

• Hormonal decline!
• Our hormones are fairly well balanced from puberty to our fertile years, but then there may be a decline in the level of one or more hormones, and this will create the environment for symptoms
Hormones

- As women get closer to the time of menopause, there is a higher number of anovulatory cycles and depletion of ovarian follicles
- Shortly after menopause, there is likely complete depletion of follicles associated with a rise in FSH (follicle stimulating hormone)

Hormones

- Hormones typically involved in menopause:
  - Estradiol
  - Progesterone
  - Testosterone

  May also see alterations in thyroid and adrenal hormone levels

Hormones

- What is a hormone?
  - A substance that travels from a special tissue, where it is released into the bloodstream, to distant responsive cells where the hormone exerts its characteristic effects.
  - Usually acts via a receptor
Hormones
chemical structures

- Estradiol
- Progesterone

Hormones

- The hormones are produced by our ovaries
- As we age, the production of those hormones will decline naturally
- This sometimes occurs in an erratic fashion, hence the creation of symptoms
- When the decline of one hormone is not matched to that of another hormone we use the term “unbalanced”

Hormonal Balance

- Estradiol
- Progesterone
- **Estradiol (E):**
  - Primary female sex hormone
  - Defines us a woman
  - Responsible for the first half of the menstrual cycle
  - Keeps our brain on task
  - Buffers mood

- **Progesterone (P):**
  - The balancing act for estradiol
  - Protects the lining of the uterus
  - Responsible for the timing of a woman’s cycle
  - Usually the first hormonal level to decline during the perimenopause

- **Testosterone**
  - The “feel good” hormone
  - Responsible for
    - Sense of self
    - Metabolism
    - Libido
Hormonal Balance

- Progesterone normally begins to decline in a woman’s 30s
- This creates an imbalance between E/P tending toward “estrogen dominance”
- Additional factors such as the exposure to xenoestrogens

Symptoms of estrogen dominance

- Weight gain - mid abdomen and hip
- Breast tenderness
- Heavy menses
- Endometriosis
- Increased risk of uterine and breast cancer
- Water retention
- Headaches

Symptoms of progesterone deficiency

- Irregular menses
- Mood abnormalities including anxiety, depression
- Insomnia
- PMS
- Bloating
Testosterone

Symptoms of excess
• Rage
• Acne

Symptoms of deficiency
• Poor sense of self
• Low metabolism
• Low libido

Evaluation
• Patient history
• Physical exam
• Symptom questionnaire
• Laboratory evaluation
• Saliva testing

Evaluation
• Lab evaluation
  — FSH
  — Estradiol
  — Progesterone
  — Testosterone free and total
Evaluation

• Saliva testing

Treatment options

• Lifestyle management
• Supplements
• Hormone replacement
  – Synthetic
  – Bioidentical

Bioidentical hormones

• Bioidentical means identical to life
  – Hormone has the same chemical structure as the hormone made by our bodies
  – Cannot be compared to synthetic hormone effects
Treatment options

• Estrogen dominance
  – Lifestyle management
    • Reduction of xenoestrogens, BPA
  – Dietary considerations
    • Increase cruciferous vegetables, DIM, decrease etoh, decrease caffeine, organic/hormone free meats
  – Exercise strategies
  – Increase in progesterone levels
    • Bioidentical HRT
    • Consider the use of chaste berry

Treatment options

• Progesterone deficiency
  – Lifestyle changes
    • Social groups, decrease caffeine and etoh
  – Herbal therapy
    • Chasteberry, bladderwrack
  – Bioidentical hormone therapy

Treatment options

• Estrogen deficiency
  – Lifestyle changes
    • acupuncture
  – Herbal therapy
    • Rhubarb, ginseng, maca
  – Dietary changes
    • Avoid caffeine, decreased gluten, flaxseed
  – Bioidentical hormone therapy
Hormone Replacement Therapy (HRT)

• WHI study 2002
  – Increased risk of heart disease, breast cancer and stroke
  – Study done with premarin and provera, not bioidentical forms
  – Thought that the risks were due to use of synthetic hormones

Hormone Replacement Therapy

• Synthetic hormone use associated with:
  – Heart disease
  – Breast cancer
  – Hip fractures
  – Colorectal cancer
  – Stroke
  – Thromboembolic disease

Hormone Replacement Therapy

• Bioidentical hormones:
  – Article by Holtorf reviewed literature on natural HRT
    • Lower risks breast cancer and cardiovascular risk
    • Efficacy greater than with synthetic hormone use
  – Study of 80,000 women for 8 years in France
    • Used bioidentical progesterone
    • No increased risk of breast cancer, no adverse effects
Hormone structures

- Conjugated estrogen
- Progestin
- Bioidentical estradiol
- Bioidentical progesterone

Treatment

- Always inquire of patient’s wishes for therapy
- Consider behavioral strategies first
- ALWAYS incorporate dietary suggestions
- Correct hormonal imbalances if they exist
- Be cautious of starting hormones at a “older” age
- WHI complications thought to be related to age at which HRT was started

- Estradiol
  - Only transdermal; NEVER oral
  - Can be combined with estriol (a less potent type of estrogen)
  - Oral therapy is associated with a higher rate of gallbladder problems, incidence of venous thrombosis, cholesterol abnormalities, elevated liver enzymes, increased triglycerides, increased blood pressure
Treatment

- Estradiol
  - “the lowest dose for the shortest amount of time”
  - Options include patch, gel, cream
  - Many options covered by insurance
  - Also compounded versions
    - Afford more creativity with dosing combinations and dosing

Treatment

- Progesterone
  - May be oral or transdermal
  - Oral will cross BBB to aid with control of sleep centers
  - Oral absorption may be less effective
  - Transdermal better for younger premenstrual or perimenstrual women or for those women in whom cannot achieve a therapeutic level
    - **if transdermal then evaluation with saliva testing only

Treatment

- Use of synthetic progestins may have adverse effects:
  - Increased appetite
  - Acne
  - Weight gain
  - Hair loss
  - Fluid retention
  - Insomnia
  - Irritability
  - Nausea
  - Depression
  - Headache
  - Decreased energy
  - Bloating
  - Breast tenderness
### Treatment

- **Progesterone**
  - If oral: available commercially as micronized progesterone (prometrium)
  - Doses of 100mg and 200mg
  - If transdermal – will need to utilize a compounding pharmacy
  - Dose conversion: 100mg oral = 40mg cream

### Treatment

- **Testosterone**
  - Oral form of testosterone associated with increase in liver cancer
  - May be used via transdermal or transvaginal method

### Treatment

- **Testosterone**
  - Compounded as a cream, suppository or triturate
  - Usually starting with 1 mg dose
    - Max usually 4mg
Treatment

• What if someone has a contraindication for traditional therapy?
  – Consider alternative therapies such as rhubarb
  – Consider “side effect” profiles of meds such as Effexor for help with hot flashes
  – Consider acupuncture
  – consider dietary manipulation with foods such as cruciferous vegetables, increased fiber, decreased fat

• Potential side effects
  – The side effects for hormonal aberrations are the same for either too low or too high of a level
  – May initially see relief of symptoms but then a return – may very well be that the level of the medication is too high

Follow up

• Most often followed every 3 months as the medications should have plateaued at that time
• Will utilize either lab or saliva testing depending on the route of delivery of the hormone
• If having difficulty with symptom control then may wish to evaluate earlier than 3 months
Duration of therapy?

• Patient choice
• Usually for a designated period of time after symptoms are controlled
• Suggest a weaning period to d/c meds
• May wish to consider doing so during the winter months