Menopause & Polycystic Ovarian Syndrome

Seddah Moya, M.D.
Objectives

- Managing menopausal symptoms
- Managing bone health and fracture risk
- Options for decreased libido and dyspareunia
- Diagnosis of PCOS
- Treatment of PCOS
- Pregnancy and PCOS
Menopause

- Average age is 51
- 30% of women’s life is post-menopausal
- 2020: 19.3 million age 55-64
  - compared to 10.8 in 1990
- 50% women have hot flashes > 4 yrs
- 23% women have hot flashes > 13 years
# Stages of Menopause

<table>
<thead>
<tr>
<th>Stages:</th>
<th>-5</th>
<th>-4</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>+1</th>
<th>+2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Terminology:</th>
<th>Reproductive</th>
<th>Menopausal Transition</th>
<th>Postmenopause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Peak Late</td>
<td>Early Late*</td>
<td>Early* Late</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration of stage:</th>
<th>③ 1 yr</th>
<th>④ 4 yrs</th>
<th>Until demise</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Menstrual cycles:</th>
<th>Variable to regular</th>
<th>Regular</th>
<th>Variable cycle length (≥ 7 days different from normal)</th>
<th>≥2 skipped cycles and an interval of amenorrhea (≥60 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endocrine:</td>
<td>normal FSH</td>
<td>↑ FSH</td>
<td>↑ FSH</td>
<td>↑ FSH</td>
</tr>
</tbody>
</table>

*Stages most likely to be characterized by vasomotor symptoms  ↑ = elevated

**Figure 42-1.** The Stages of Reproductive Aging Workshop (STRAW) staging system. (Reprinted from Fertility and Sterility, 76, Soules MR, Sherman S, Parrott E, et al, Executive summary: Stages of Reproductive Aging Workshop [STRAW], 874. Copyright 2001, with permission from The American Society for Reproductive Medicine.)
Effects of menopause

- Vasomotor symptoms
- Sleep disturbances
- Memory loss
- Mood changes
- Vaginal atrophy
- Decreased libido
- Bone loss
Vasomotor symptoms

- Narrowed thermo neutral zone between sweating and shivering threshold
- Can be very disruptive to quality of life
- Gold standard treatment is hormone therapy
Treatment of vasomotor symptoms

- Breaking down WHI
- HRT
  - Transdermal vs. Oral
  - Systemic vs. vaginal
  - Combined vs. estrogen only
- Non-hormonal treatments
- Lifestyle modifications
### Putting WHI Risks Into Perspective

<table>
<thead>
<tr>
<th>Event</th>
<th>EPT Relative Risk</th>
<th>EPT Absolute Risk (number per 10,000 women)</th>
<th>ET Relative Risk</th>
<th>ET Absolute Risk (number per 10,000 women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHD</td>
<td>1.29</td>
<td>7 more</td>
<td>0.91</td>
<td>5 less</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.41</td>
<td>8 more</td>
<td>1.39</td>
<td>12 more</td>
</tr>
<tr>
<td>VTE</td>
<td>2.11</td>
<td>18 more</td>
<td>1.33</td>
<td>7 more</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>1.26</td>
<td>8 more</td>
<td>0.77</td>
<td>7 less</td>
</tr>
</tbody>
</table>

My patient needs treatment; now what?

- Age and health
- Hysterectomy
- Medical history
- Main symptom
Estrogen only

- Use when patient doesn’t have a uterus
- Less risk involved than EPT
- Counsel about onset and duration of action
- Lowest dose possible for shortest amount of time possible
Transdermal estrogen

- Avoids first pass metabolism
- More stable estradiol levels
- Growing observational evidence that transdermal may have lower risk of DVT, stroke, MI
Estrogen and Progesterone

- Increased thromboembolic events
- Increased triglycerides
- Gallbladder disease
- Breast cancer
- Try to limit use to 3-5 years
Non-hormonal treatment

- Low dose peroxetine salt 7.5mg
  - FDA approved
  - Sleep benefits
  - No effects on sexual dysfunction or weight

- SNRI
  - Velafaxine 75mg

- SSRI
Non-hormonal treatment

- Gabapentin 900mg
  - Side effects
- Clonidine
  - Tablet and transdermal
Bioidentical hormones

- Marketing term – not based on scientific evidence
- Has its place
- Not regulated by the FDA
- No black box warning
- No testing for safety, efficacy, purity, or potency
Non-prescription

- Soy
- Black cohosh
- Paced breathing
- Diet
- Yoga
- Hypnosis
- Acupuncture
- Clothing
Osteoporosis

- Loss of bone mass
- Deterioration of microarchitecture
- Decline in bone quality
- Age one of the most important factors for bone quality
- Acquisition of bone that occurs in childhood and adolescence = 90% adult bone mass
Osteoporosis

- Resorption and formation of bone continually occurring
- Most rapid bone loss in women occurs with decline in estrogen levels associated with menopause
Diagnosis

- **DXA**
  - T-score less than -2.5 = Osteoporosis
  - T-score -1 to -2.5 = Low bone mass

- **Clinical diagnosis**
Bone turnover markers

- Measured in urine or serum to determine high or low bone turnover state
- Byproducts of bone resorption
  - Deoxypyridinoline, N-telopeptides, C-telopeptides
- Byproducts of bone formation
  - Osteocalcin, bone specific alkaline phosphatase
Fracture Risk Assessment Tool

- Predicts risk of fracture in the next ten years
- Treatment should be initiated when:
  - 3% risk of hip fracture
  - 20% risk of major osteoporotic fracture
Fracture Risk Assessment Tool

www.shef.ac.uk/FRAX/tool.aspx?country=10
Bone health

- Address in all age groups
- Nutrition
- Lifestyle
  - Smoking
  - Alcohol
Calcium and vitamin D guidelines

<table>
<thead>
<tr>
<th>Age (yr)</th>
<th>Calcium Recommended Dietary Allowance (mg/day)</th>
<th>Vitamin D Recommended Dietary Allowance (international units/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9–18</td>
<td>1,300</td>
<td>600</td>
</tr>
<tr>
<td>19–50</td>
<td>1,000</td>
<td>600</td>
</tr>
<tr>
<td>51–70</td>
<td>1,200</td>
<td>600</td>
</tr>
<tr>
<td>71 and older</td>
<td>1,200</td>
<td>800</td>
</tr>
</tbody>
</table>

*Data from Institute of Medicine: Dietary Reference Intakes: Calcium, Vitamin D, and Related Vitamins.*

When to initiate screening

- Age 65 for women
- Under 65, if post-menopausal with risk factors
- Under 65 with FRAX risk of 9.3%
- After initiation of treatment, retest in 1-2 years
Screening

**Box 2. When to Screen for Bone Density Before Age 65 Years**

Bone density should be screened in postmenopausal women younger than 65 years if any of the following risk factors are noted:

- Medical history of a fragility fracture
- Body weight less than 127 lb
- Medical causes of bone loss (medications or diseases)
- Parental medical history of hip fracture
- Current smoker
- Alcoholism
- Rheumatoid arthritis
Screening

- Women ≥65 y
  - Bone mineral density
    - Osteoporosis
      - Treat
    - Low bone mass*
      - FRAX
        - High risk for fracture
          - Treat
        - Low risk for fracture
          - Healthy lifestyle
    - Normal*
      - Healthy lifestyle
  - Yes
  - No

- Women <65 y
  - More than one risk factor(s) or FRAX 9.3% risk of fracture
    - Yes
    - Patient concerned
      - Yes
      - Healthy lifestyle
      - No
  - No

Treatment Options

- **Anti-resorptives**
  - Bisphosphonates
  - Estrogens
  - SERMs
    - Raloxifene
  - Calcitonin
  - Denosumab
Treatment options

- Anabolic
  - PTH
- Other
  - Vitamin D
  - Calcium
  - Vitamin K
  - Strontium
- Physical therapy
**Efficacy in fracture reduction**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Vertebral#</th>
<th>Non-Vertebral#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alendronate</td>
<td>+*</td>
<td>+*</td>
</tr>
<tr>
<td>Risedronate</td>
<td>+*</td>
<td>+*</td>
</tr>
<tr>
<td>Ibandronate</td>
<td>+*</td>
<td>?</td>
</tr>
<tr>
<td>ET or EPT</td>
<td>+*</td>
<td>+*</td>
</tr>
<tr>
<td>Raloxifene</td>
<td>+*</td>
<td>X</td>
</tr>
<tr>
<td>Calcitonin</td>
<td>+*</td>
<td>X</td>
</tr>
<tr>
<td>Teriparatide</td>
<td>+*</td>
<td>+*</td>
</tr>
<tr>
<td>Denosumab</td>
<td>+*</td>
<td>+*</td>
</tr>
</tbody>
</table>
# Postmenopausal Osteoporosis

## FDA-approved Drugs and Dosages

<table>
<thead>
<tr>
<th>Drug</th>
<th>Prevention</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisphosphonates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risedronate</td>
<td>5 mg/d or 35 mg/wk</td>
<td>5 mg/d or 35 mg/wk PO</td>
</tr>
<tr>
<td>Alendronate</td>
<td>5 mg/d or 35 mg/wk</td>
<td>10 mg/d or 70 mg/wk PO</td>
</tr>
<tr>
<td>Ibandronate</td>
<td>2.5 mg/d or 150 mg/mo</td>
<td>2.5 mg/d or 150 mg/mo PO</td>
</tr>
<tr>
<td>Zolidronic acid</td>
<td>5 mg IV infusion ever 2 yr</td>
<td>5 mg IV infusion/year</td>
</tr>
<tr>
<td>Estrogen</td>
<td>+</td>
<td>Not approved</td>
</tr>
<tr>
<td>Raloxifene</td>
<td>60 mg/d</td>
<td>60 mg/d orally</td>
</tr>
<tr>
<td>Calcitonin</td>
<td>Not approved</td>
<td>200 IU/d nasal spray</td>
</tr>
<tr>
<td>Teriparatide</td>
<td>Not approved</td>
<td>20 µg/d SQ</td>
</tr>
<tr>
<td>Denosumab</td>
<td>Not approved</td>
<td>60 mg SQ q6 month</td>
</tr>
</tbody>
</table>
Fracture reduction is the goal

- Well-lighted entry way
- No loose rugs
- Bars in shower/tub
- Appropriate shoes
- Medications
Decreased Libido

- Important history questions
- Physical exam
- Ask about husband
Menopausal Vulvar Changes

- Decreased collagen and adiposity of vulva
- Decreased lubrication
- Clitoral shrinkage and less protection
- Can have prolapse
Estrogen Deficiency Impact on sexual function

- Changes in anatomy
- Reduced peripheral blood flow
- Reduced nerve transmissions and discharge
- Sleep disruption
- Mood changes
Female Sexual Response Cycle

Intimacy-Based Model of Female Sexual Response Cycle

- Emotional intimacy
- Emotional and physical satisfaction
- Spontaneous sexual drive
- Arousal and sexual desire
- Sexual arousal
- Seeking out and being receptive to sexual stimuli
- Biological and psychological factors

Basson Obstet Gynecol 2001;98:350-353
Atrophy Cycle

- Vaginal atrophy
- Dyspareunia
- Lack of lubrication
- Irritation

- Loss of interest in sexual activity
- Discomfort during intercourse
Vaginal Moisturizers

- Long term relief of vaginal dryness
- Continuous use
- Some can contain irritants
Vaginal Lubricants

- Sexual Aid
- Must be applied frequently
- Short duration of action
Estrogen Therapy and Vagina

- Enhances vaginal blood flow
- Improves vaginal thickness and elasticity
- Promotes vaginal cell growth
- Topical results in better response than oral
- Minimal systemic effects
Local Vaginal Estrogen Therapy

- Cream, tablet, or ring
- Preferred for vaginal systems
- Bypass GI tract
- No first pass in the liver
Mona Lisa Touch

- Vaginal laser
- Histologic changes
- Comfortable 5 minute procedure
Testosterone

- No consistent evidence that low testosterone equates to low desire
- Non-FDA approved testosterone options:
  - Compounded cream/gel
  - Sublingual
  - Injection
OTC options

- Argenine
  - More intense orgasms
  - Increased desire

- Ginko
The brain

Self Serve:
3904 Central Ave SE, Albuquerque, NM 87108
Self Serve
Self Serve Classes

- 06/04/14
  7:30 pm - 9:00 pm Interactive Muff Diving
  Self Serve, Albuquerque NM 06/08/14
  6:30 pm - 8:00 pm Sex Secrets from a Pro
  Self Serve, Albuquerque NM 06/09/14
- 06/08/14
  6:30 pm - 8:00 pm Sex Secrets from a Pro
  Self Serve, Albuquerque NM 06/09/14
- 06/09/14
  7:30 pm - 9:00 pm Hot Sex Tips, Tricks and Licks with Dr. Jess
  Self Serve, Albuquerque NM 06/11/14
- 06/11/14
  7:30 pm - 9:00 pm Tantric Orgasms
  Self Serve, Albuquerque NM 06/12/14
- 06/12/14
  7:30 pm - 9:00 pm Partner Yoga for Hot Sex
  Self Serve, Albuquerque NM 06/16/14
- 06/16/14
  7:30 pm - 9:00 pm BDSM 101
  Self Serve, Albuquerque NM 06/17/14
- 06/17/14
  7:30 pm - 9:00 pm Having Fun with BDSM
  Self Serve, Albuquerque NM 06/23/14
- 06/23/14
  7:30 pm - 9:00 pm Polyamory: Beyond the Basics with Reid Mihalko
  Self Serve, Albuquerque NM 06/24/14
- 06/24/14
  7:30 pm - 9:00 pm Female Ejaculation and the G-Spot with Deborah Sundahl
  Self Serve, Albuquerque NM 06/26/14
- 06/26/14
  7:30 pm - 9:00 pm Mastering the BJ: Interactive Skills
  Self Serve, Albuquerque NM
PCOS- Rotterdam Criteria

- Oligo/anovulation
- Clinical or biochemical evidence of hyperandrogenism
- Ultrasound
- Exclusion of other diagnosis
History and Physical

- Menstrual history
- Signs of hyperandrogenism- onset?
  - Acne
  - Hirsuitism
  - Alopecia
- Signs of Cushings
  - Purple abdominal striae
  - Supraclavicular fat pads
  - Moon facies
  - Buffalo hump
Ultrasound

- 12 or more follicles measuring 2-9 mm
- +/- Increased ovarian volume
Anovulation

- Day 21 Progesterone
- TSH
- Prolactin
- FSH
- HCG
Hyperandrogenism

- Free/Total Testosterone
- DHEA-S
PCOS

- Screen Lipids
- Hgb A1C, or glucose challenge
- Screen for depression, eating disorders, and sleep apnea
Treatment- not trying for pregnancy

- Combined OCPs
  - Norgestimate
- Mirena IUD
- Cyclic or continuous progesterone
- Spironolactone after 6 months
Treatment - not trying for pregnancy

- Weight loss
- Manage lipids, depression, etc…
Trying to achieve pregnancy

- Weight loss
- Clomid
  - 80% ovulation
- Letrazole
  - In obese patients has higher success
- Metformin
  - When there is insulin resistance
Thank you!
References

- Comprehensive Gynecology, Katz, Lentz, chapter 42
- ACOG Committee Opinion # 532, Compounded Bioidentical Menopausal Hormone Therapy
- ACOG Committee Opinion # 556, Postmenopausal Estrogen therapy: Route of administration and risk of Venous Thromboembolism
- ACOG Practice Bulletin #129, Osteoporosis
- JoAnn Pinkerton, Vaginal Atrophy and Sexual function after menopause, presented at ACOG national conference 2014
- Hugh Taylor, Menopause and Hormone Therapy, Reevaluating the evidence and looking toward the future, presented at ACOG national conference 2014
- ACOG Practice Bulletin #108 Polycystic Ovarian Syndrome