Menopause and Bone Health in HIV infected Women

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Aging and HIV infected women

- HIV infected women are living longer

- Older women are also among those newly diagnosed with HIV
  - In 2013 of those adults diagnosed with HIV:
    - About 18% are age 45-54 years
    - 10% are age 55 and older

- More HIV+ women are/will experience menopause
Menopause

- Defined retrospectively as cessation of menstrual periods for one year; not associated with other causes.
- Result of the natural decline of estrogen production from ovaries.
- The average age of menopause in the US is about 52 years with a range of 40 to 58 years (North American Menopause Society, NAMS, 2015).
- In the general population, women who achieve menopause at an earlier age are at higher risk for morbidity and mortality due to loss of the protective effects of estrogen.
  - Cardiovascular risk
  - Fracture risk
HIV and Menopause

- A few studies to date suggest HIV is a risk factor for earlier than average age at menopause.
- Risk factors for earlier menopause are often found in HIV+ women and may confound the association of HIV with early menopause:
  - Tobacco use
  - Substance abuse
  - Low body weight
  - Low socioeconomic status
  - Stress
HIV and Menopause

- Episodes of irregular bleeding or amenorrhea are common in HIV+ women
  - Due to stress, serious illness, or low body weight/wasting.
  - May need careful evaluation, especially if this occurs at or below age 40.
  - Consider obtaining a FSH level to evaluate for menopause (levels > 25 IU/L in a random blood draw are consistent with menopause [STRAW + 10]).
Menopausal symptoms

- The core symptoms associated with menopause in all women are vasomotor symptoms (hot flashes, night sweats), sleep disturbance, vaginal dryness (NIH State of Science Conference, 2005).
- Women are also at risk for depressive symptoms in the menopause transition period (period prior to final menstrual period).
HIV infected women and Menopausal symptoms

- HIV infected women may experience more menopausal symptoms than the general population, particularly psychological symptoms and vasomotor symptoms.
- Complaints of night sweats and hot flashes may need to be carefully evaluated to rule out other infections, TB or possibly lymphoma based on CD4 count.
- Thorough health history and evaluation are important to investigate symptoms.
Hot flashes

- HIV+ women report more hot flash severity and greater interference of hot flashes with daily activities (Looby, et al, 2014).

- Treatment of hot flashes must consider whether the woman is a candidate for hormone therapy and drug interactions with ART (CYP450 pathway) and other medications.
Effective treatments in general population: (very little data in HIV+ women)

- Hormone Therapy (HT): low dose, short term
  - Check potential interactions between estrogen and PI or NNRTI
- Nonhormonal therapy:
  - SNRI (venlafaxine, desvenlafaxine)
  - SSRI (fluoxetine, citalopram, escitalopram)
  - Gabapentin
- Cognitive behavioral therapy- effective in one study
- Complementary therapy
  - Black cohosh-no evidence for efficacy, side effect is potential liver toxicity
  - Phytoestrogens—no evidence for effectiveness
  - Acupuncture—conflicting evidence
- Weight loss--effective
Case Example: Ms P.
45 yo AAF, perimenopausal, Severe night sweats

- HIV+, Hep C (VL = UD), HTN
- At ideal body weight
- CD4 = 770, VL = UD,
- ARV: Efavirenz/tenofovir/emtricitabine
- PPD = negative

- Self-treatment—fans, light bedclothing, soy estrogen OTC
- Declines HT
- Trial of gabapentin
Bone health in HIV+ menopausal women

- HIV infected persons have a three times greater prevalence of osteopenia and osteoporosis than their HIV negative peers.

- HIV-related risk factors for low bone mineral density (BMD) include:
  - Low CD4 count
  - ART-- There is a 2-6% loss of BMD after starting ART. Tenofovir confers greater risk.
  - Chronic inflammation associated with HIV.
  - Low Vitamin D - prevalent in as high as 60-75% HIV infected persons. Efavirenz confers greater risk.
  - High levels of bone turnover biomarkers

- Other general risk factors are:
  - Low BMI, poor nutrition, sedentary lifestyle, tobacco, > 3 drinks alcohol/day
Evaluating Bone Density: DXA scan

- DXA scans - under utilized by providers
- Current recommendations: all women age 65 yrs or older.
  Authoritative sources (American Association of Clinical Endocrinologists, American College of Obstetrics and Gynecology, National Osteoporosis Foundation [NOF] do not list HIV as a risk factor for osteoporosis
- Infectious Disease Society of America recommendations for HIV infected persons: (2009)
  - Postmenopausal women age 65
  - Young postmenopausal women with one or more risk factors
FRAX® WHO Fracture Risk Assessment Tool

Calculation Tool

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: US (Caucasian)  Name/ID: 

**Questionnaire:**

1. Age (between 40 and 90 years) or Date of Birth
   - Age: 
   - Date of Birth: Y: M: D: 

2. Sex
   - Male  Female

3. Weight (kg)

4. Height (cm)

5. Previous Fracture
   - No  Yes

6. Parent Fractured Hip
   - No  Yes

7. Current Smoking
   - No  Yes

8. Glucocorticoids
   - No  Yes

9. Rheumatoid arthritis
   - No  Yes

10. Secondary osteoporosis
    - No  Yes

11. Alcohol 3 or more units/day
    - No  Yes

12. Femoral neck BMD (g/cm²)
    - Select BMD

Clear  Calculate

**Weight Conversion**

- Pounds ➔ kg
  - Pounds
  - Convert

**Height Conversion**

- Inches ➔ cm
  - Inches
  - Convert

03528129
Individuals with fracture risk assessed since 1st June 2011

Print tool and information
Bone health recommendations

- Correct Vitamin D deficiency: 700 - 800 IU daily
- Calcium (1200 mg) + Vitamin D (800 - 1000 IU) daily for women over 50 years (National Osteoporosis Foundation, 2010).
- Evaluate and Treat osteoporosis (e.g., alendronate found to be safe) and osteopenia according to NOF recommendations
- Health promotion activities
  - Weight bearing exercise
  - Smoking cessation
  - Limit alcohol to less than 3 drinks a day.
- Continue ART -- currently no evidence that changing regimen raises BMD or lowers fracture risk (Kanapathipillai, et al, 2013)
Algorithm for Menopause Management in HIV infected women

Assess menstrual periods: 12 months amenorrhea
Assess FSH as needed (> 25 IU/L is c/w menopause)
Exclude other etiologies of amenorrhea

Assess for symptoms (exclude other etiologies):
   Treatment based on severity and affect on quality of life

Assess Vitamin D, Bone density (DXA scan)
Assess FRAX
Treatment based on results

Health promotion/maintenance:
Calcium + Vit D, weight bearing exercise, weight loss, reduce alcohol, smoking cessation
References


National Osteoporosis Foundation http://nof.org/


