Menopause in Women with HIV: State of the Science and Opportunities for Research and Clinical Practice

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Disclosures

- None

"HELL in a HOT FLASH"

Lewis-Thornton R. Hell in a hot flash? *Posit Aware* 2016;28:10-11.

"After a week of waking up in the middle of the night with drenching night sweats, I ran to my doctor in a panic reminiscent of the days when my T-cell count was 8. I just knew something major was wrong with me…"

"I never want to go to hell, if it feels like a hot flash."

"Sleeping at night, I feel like a zombie in a sauna."

"Some days I don't want to leave the house, that's just not me."

"I would prefer to deal with the symptoms of menopause over death from AIDS."

Overview




- Brief Overview of Definitions
- Age of Onset of Menopause in Women with HIV (WWH)
- Menopause in WWH: Symptoms; Conditions
- Treatment Considerations – Menopausal Hormone Therapy
- Discussion

Overview of Definitions

What *is* Menopause??

- Menopause is a natural event defined as the final menstrual period and usually occurs when a period does not occur for 12 consecutive months

NAMS: Early Menopause Guide Book, 6th edition; www.menopause.org

Definitions

PERIMENOPAUSE is the transitional time of 6 years or more immediately prior to natural menopause when changes begin and includes 1 year after menopause.

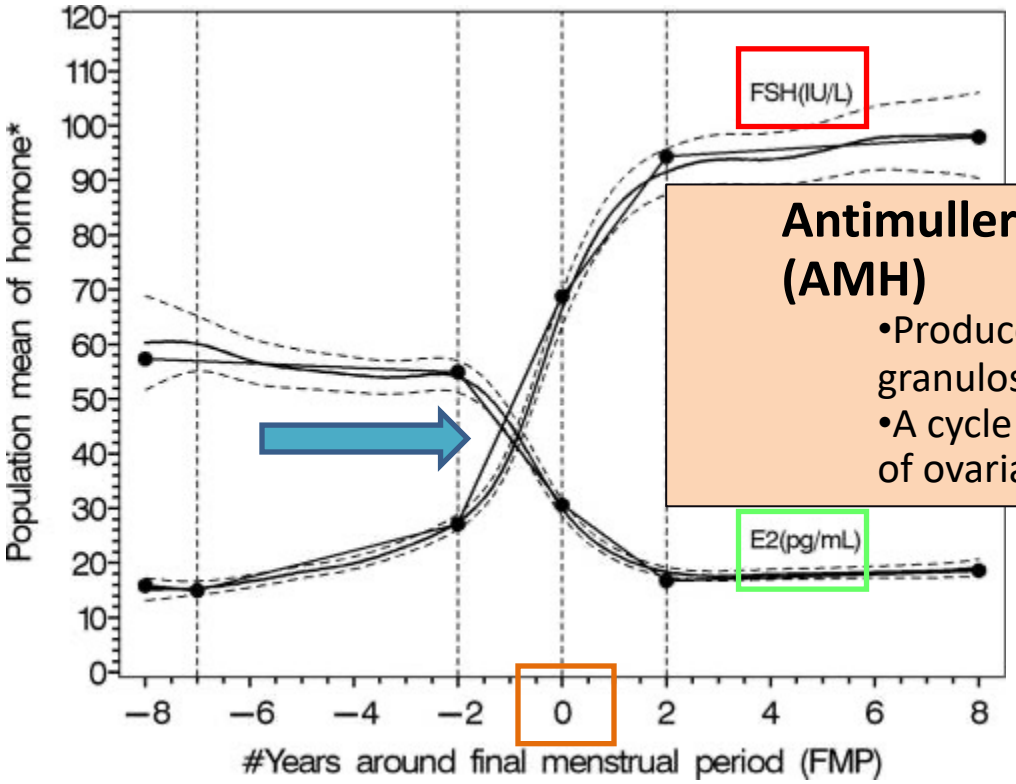
POSTMENOPAUSE is all the years beyond menopause.

PREMATURE MENOPAUSE is menopause that occurs at or before age 40.

INDUCED MENOPAUSE is menopause caused by a medical or surgical intervention that removes or seriously damages both ovaries.

NAMS: Menopause Guide Book, 6th edition; www.menopause.org

Hormones



Antimullerian hormone (AMH)

- Produced by ovarian granulosa cells
- A cycle independent marker of ovarian reserve

Adjusted population means (95% CI) for segmented mean profiles of FSH and estradiol across the final menstrual period in the Study of Women's Health Across the Nation (N = 1,215). Original source: Randolph et al, *J Clin Endocrinol Metab* 2011;96:746–754, reproduced in (Harlow et al. J Clin Endocrinol Metab. Apr 2012; 97(4): 1159–1168.

Age of Onset of Menopause in Women with HIV

Onset of Menopause in HIV

- Assessment of Reproductive Aging: STRAW+10 (2012)
  - Staging system for ovarian aging including menstrual & qualitative hormone data to define each stage (Harlow et al., 2012)
  - Existing Gaps: evaluating staging of reproductive aging in women with chronic illness, including HIV

- Prior studies suggest earlier onset of menopause among WWH, though conflicting findings exist: (age in North America is 51 in women without HIV).
  - Age of onset 46-50 years in WWH
  - Some findings limited by methodological constraints including use of different methods to document age of menopause, and use of laboratory markers verse self report LMP without laboratory verification

Clark et al. 2000; Cejtin et al. 2004, Fantry et al. 2005, Schoenbaum et al. 2005, Ferreira et al., 2007, de Pommerol et al., 2011; Calvet et. al., 2015

WWH Experience Irregular Menstrual Patterns

Social, Lifestyle, General Health

- Substance use disorder
- Smoking
- Physical inactivity
- History of low weight
- Hepatitis C
- Medications: psychotropics, narcotics, methadone, corticosteroids

HIV Infection

- Poor immune function
- Current/nadir CD4 count
- Hx AIDS diagnosis
- Higher HIV viral load

Conde DM, Silva ET, Amaral WN, et al. 2009; Schoenbaum EE, Hartel D, Lo Y, et al. 2005; Cejtin HE., 2008; Clark RA, Mulligan K, Stamenovic E, et al., 2001; Harlow SD, Schuman P, Cohen M, et al., 2000; de Pommerol et al. 2011; Calvet et. al. AJOG, 2015; Scherzer, 2018

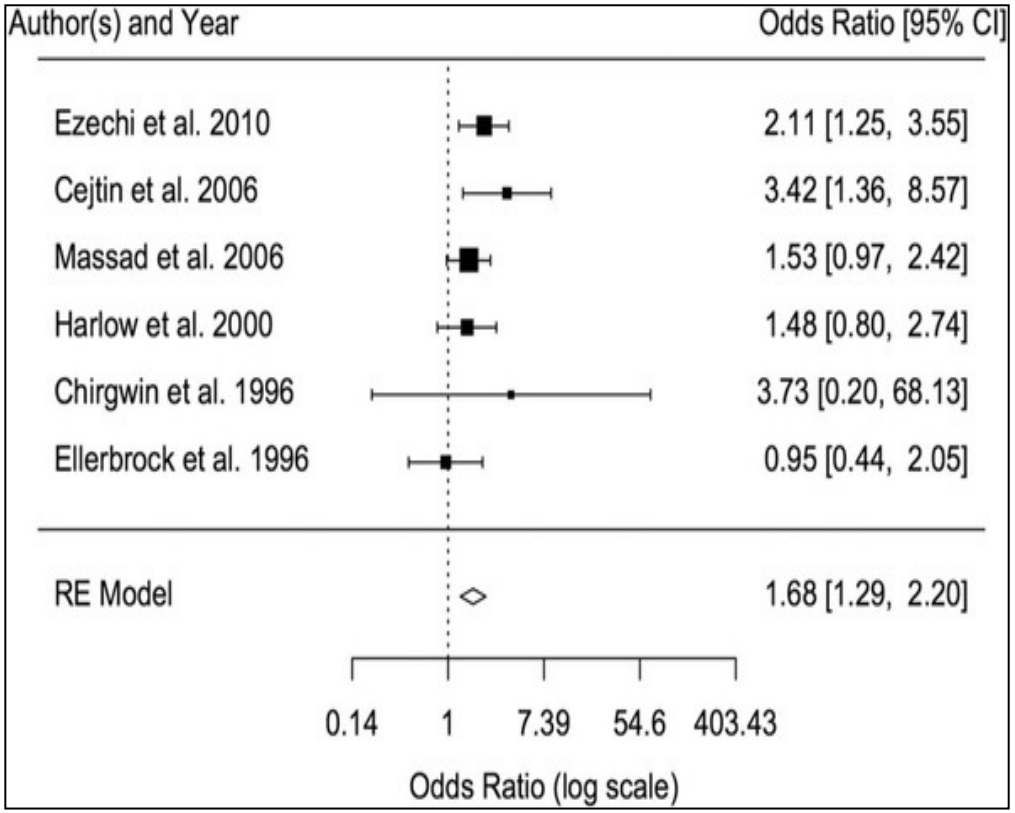
HIV & Reproductive Health

Amenorrhea

- Hypothalamic amenorrhea, POI
- Prolonged amenorrhea without ovarian failure associated with HIV serostatus (Cejtin et al. 2006) (Cejtin et al. 2018)
- Estrogen and progesterone regulate female reproductive tract and influences immune function- changes with aging and E2 loss (Ghosh et al. 2014; Venkatesh &Cu-Uvin 2014)
- ? interplay of HIV-hormonal fluctuations-biologic factors on immune response (Venkatesh & Cu-Uvin 2014)

HIV and amenorrhea: a meta-analysis
King, EM, Albert, AY, Murray, AC

AIDS 2019, 33:483–491



Odds of amenorrhea in WLH compared with controls in 6 observational controlled studies

HIV and Ovarian Aging

NO

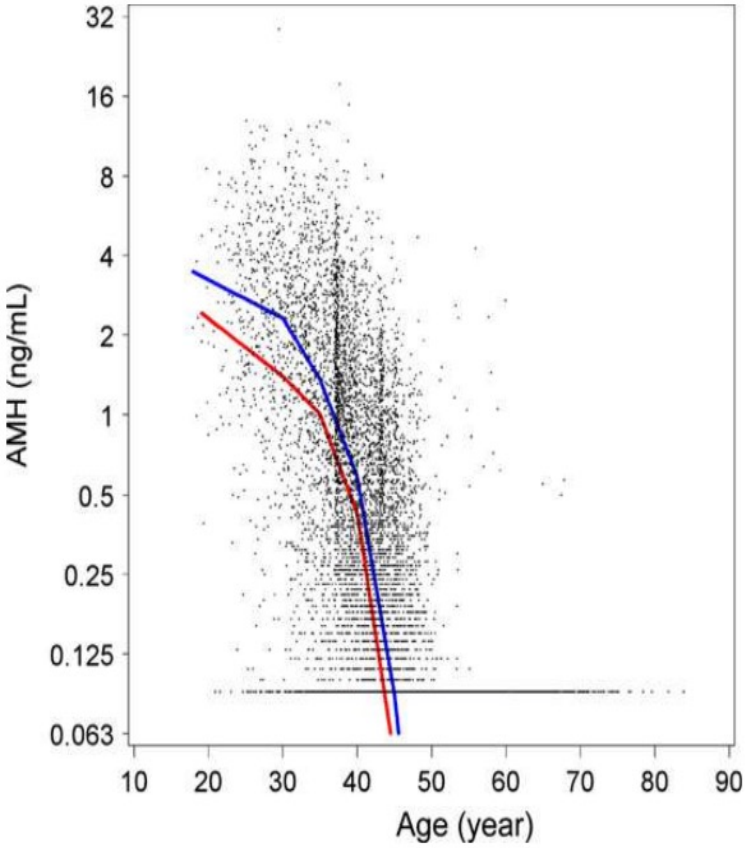
No association between ART use, HIV infection and accelerated ovarian aging measured using MIS (Seifer et al. 2007)

Increasing age, and not CD4, AIDS dx, or ART use associated with low AMH (Wessman et al. 2018)

YES

AMH lower in HIV c/w non-HIV controls, and is associated with age, BMI & HIV viral load; Increased CD4 associated with increase AMH levels (Santulli et al. 2016)

AMH Levels Lower in Premenopausal Women With HIV vs. Without HIV



Women with HIV
Women without HIV

Unadjusted AMH in WIHS Cohort (by age)

Scherzer et al. Am J Reprod Immunol 2015

Potential Implications of Early Menopause in HIV

Early onset of:

- Cardiovascular disease
- Frailty and osteoporosis

Impaired

- Mood & quality of life (hot flashes)
- Sexual function
- Sleep
- Cognitive function

HIV-specific factors

- ? Immune health, adherence to antiretroviral therapy

Overall Symptom Burden

- Menopause Symptoms
- HIV Symptoms

Andany et al, Int. Journal of Women's Health 2016:8 1-22

HIV Symptoms at Midlife

In People Living with HIV (PLWH), Menopause (natural or surgical) Contributes to the Greater Symptom Burden in Women: results from an online US survey
Schnall et al., 2018

EDITORIAL
Symptoms of menopause or symptoms of HIV? Untangling the knot
Looby, 2018

- To examine the influence of menopause as part of sex differences in HIV symptom burden

Prior studies have determined no difference in immunologic or virologic response to initial antiretroviral therapy treatment by menopause status in WLWH
(Calvet et al, 2014; Patterson et al, 2009)

- Postmenopausal women with HIV, compared to menstruating women, report greater HIV symptom burden, specifically muscle aches/joint pains, fatigue, and difficulty falling asleep, controlling for age, co-morbid conditions and duration of HIV

Schnall et al., Menopause, 2018

HIV & Menopause

MENOPAUSE

HIV ⟷ **Aging**

- Cardiovascular Disease
- Kidney disease
- Liver disease
- Bone loss/increased fracture risk
- Frailty
- Cognitive Impairment
- Cancer
- Depression

Image: http://www.clker.com/clipart

Psychological and Social Concerns

STRESS

STIGMA

SHAME

DEPRESSION

ANXIETY

GUILT

LACK OF TRANSPORTATION

DISCRIMINATION

FINANCIAL CONCERNS

PRIMARY CARE GIVER

SINGLE PARENT

ACCESS TO CARE

ABUSE

INSOMNIA

MENTAL HEALTH CONCERNS

SUBSTANCE USE DISORDER AND RECOVERY

LIMITED SOCIAL SUPPORT

LIMITED HEALTH LITERACY

EDUCATION

HOMELESS

DOMESTIC VIOLENCE



Menopause in WWH: Symptoms; Conditions

Are Women with HIV More Likely to Experience Hot Flashes?

- Prior studies among WLH exclusively show HF increased in postmenopausal women compared to pre/perimenopausal women (Fantry, 2005; Boonyanurak, 2012)
- Higher CD4 count associated with increased HF prevalence (Clark, 2000)

Author	Study Population	Key Findings
Ferreira et al (2007)	96 WWH; 155 WWOH; age ≥ 40	**YES**- HIV had increased prevalence of HF (78%)
Looby et al (2014)	33 WWH; 33 WWOH; perimenopausal; age 47	**YES-** HIV had more days with HF, and greater HF severity
Johnson et al (2008)	150 WWH; 128 WWOH; age most women ≥ 45	**NO-** Difference in HF prevalence
Lui-Filho et al (2013)	273 WWH; 264 WWOH; age 40-60	**NO-** HIV status was not associated with HF

Table adapted from: Andany et al, Int. Journal of Women's Health 2016:8 1-22.

Perimenopausal WWH Have Greater Flash-Related Interference with QOL

Hot Flash Interference	HIV + (N= 33)	HIV – (N= 33)	P-Value
Total Hot Flash Related Daily Interference Scale Score[T] (HFRDIS; range 0-100)	37 (10,60)	6 (0, 20)	0.001** [a, b]
Individual HFRDIS Item Responses (range 0-10; do not interfere-completely interfere)			
HFRDIS item 1: Work (outside the home and housework)	2 (0,5)	0 (0,1)	0.01**
HFRDIS item 2: Social Activities	2 (0,5)	0 (0,1)	0.009**
HFRDIS item 3: Leisure Activities	3 (0,5)	0 (0,1)	0.001**
HFRDIS item 4: Sleep	5 (2,8)	2 (0,5)	0.01**
HFRDIS item 5: Mood	5 (1,8)	0 (0,4)	0.0003**
HFRDIS item 6: Concentration	4 (0,7)	0 (0,3)	0.004**
HFRDIS item 7: Relations with others	2 (0,7)	0 (0,2)	0.003**
HFRDIS item 8: Sexuality	1 (0,8)	0 (0,3)	0.02*
HFRDIS item 9: Enjoyment of life	2 (0,7)	0 (0,2)	0.003**
HFRDIS item 10: Overall quality of life	3 (0,7)	0 (0,2)	0.002**

Data are reported as mean/SD and median (IQR=interquartile range) as data are not normally distributed.*=P≤0.05, **=P≤0.01. After adjustment for current smoking and history of substance abuse, [a] P=0.02. After adjustment for hot flash frequency, [b] P=0.002.

A relationship between CD4 count or duration of HIV and hot flash severity and interference was not observed among women with HIV.

Looby SE, Shifren J, Corless I, et al. Menopause. Apr 2014;21(4):403-409.

Health Characteristics Associated with Hot Flashes in WWH

Duff et al., 2017

- HF were the most severely experienced somatic symptom on the MRS; 40.4% reported moderate to extremely severe HF.
- In multivariable generalized estimating equation analysis, **severe menopause symptoms,** in addition to injection drug use and physical/sexual based violence**, were independently associated with <95% adherence to antiretroviral therapy** ($p<.05$).

Rubin et al., 2014

- In multivariable regression analyses, **elevated HF were associated with worse attention and processing speed** (Comalli Stroop test, trials 1 & 2) in WWH and WWOH ($p<.05$).

Maki et al., 2012

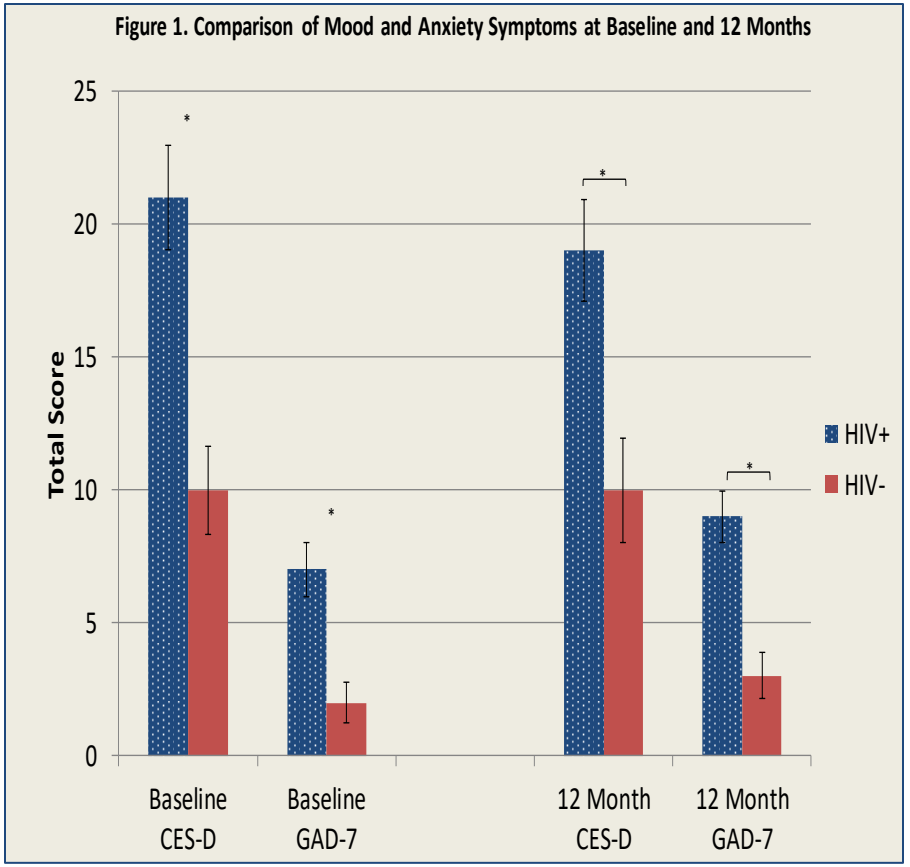
- In logistic regression analyses, **persistent HF predicted elevated depressive symptoms (CES-D) in women with HIV** ($p<.05$).

Rivard, Looby et al. 2019

Perimenopausal WWH Report Greater Depression & Anxiety

- Depressive symptoms may vary by menopause status- early perimenopause in HIV.
- Depressive symptoms observed in those with lower CD4 count.
- Baseline findings significant controlling for smoking, substance use, and antidepressant use.
- Significant relationships of depressive symptoms (P = 0.048) and anxiety (P = 0.02) with hot flash severity were also observed.

Maki, 2012; Rubin, 2014; Sorlini, 2014



33 HIV+
33 HIV-

CES-D: Depressive Symptoms
GAD-7: Anxiety

Looby, Psaros, et al., *Menopause.* 2018

Genitourinary Symptoms in HIV

- Dyspareunia: 128 HIV+, 178 HIV- (pre/peri/postmenopausal)
  - 41% of WWH compared to 35% of HIV-negative women (p=0.24)
  - Factors associated with dyspareunia in WWH with a sexual partner in past month:
    - Vaginal dryness (p=0.02)
    - Urinary incontinence (p=0.03) Valadares, 2014
    - HIV-related factors were not associated
  - Urogenital (including vaginal dryness and Sexual problems; 68%) Tariq, 2018

Menopause in women living with HIV in England: findings from the PRIME Study

Dr. Shema Tariq on behalf of the PRIME Study Group

Report of findings- patient friendly

Detailed protocol

BMJ Open

869 WWH

45-60 years (median 49)
72% Black African
Stable HIV
21% pre-, 44% peri-, 35% postmenopausal

- Somatic (including hot flushes, muscle and joint pains and sleep disturbance; **89%**)
- Urogenital (including vaginal dryness and Sexual problems; **68%**)
- Psychological (including anxiety and depression; **78%**)
- Those reporting menopause symptoms had psychological distress c/w those without symptoms

PRIME (Positive Transitions Through the Menopause) Study: a protocol for a mixed-methods study investigating the impact of the menopause on the health and well-being of women living with HIV in England

Shema Tariq, [1] Fiona M Burns,[1,2] Richard Gilson,[1] Caroline Sabin[1]

Tariq S, *et al*. *BMJ Open* 2018;9:e025497. doi:10.1136/bmjopen-2018-025497

National Institute of Health Research (NIHR) (PDF-2014-07-071)
PRIME Report, May 2018

Implications of Menopause Symptoms in HIV

- Hot flashes (persistent/severe) associated with: symptoms of depression and anxiety (Maki, 2012; Looby, 2018, Tariq, 2018) daily activities/QOL, (Looby, 2013), worse cognitive function (Rubin, 2014)
- Higher CD4 count associated with greater HF prevalence (Clark, 2000)
- Menopause symptoms, including depressive symptoms, associated with reduced adherence to antiretroviral therapy (Maki, 2012; Duff, 2017)
- WWH describe challenges with distinguishing symptoms of menopause versus symptoms of HIV, and symptoms impact HIV management including ART adherence (Tariq, 2018)

Reduced ovarian reserve relates to monocyte activation and subclinical coronary atherosclerotic plaque in women with HIV

- To investigate differences in subclinical coronary atherosclerotic plaque and markers of immune activation among WWH categorized by ovarian reserve/menopause status.

- 49 WWH; 25 women without HIV and known CVD from Fitch/Srinivasa et al. 2013 (Mean age 47, similar in race, no difference in traditional CVD risk; JID, 2013)

- Methods: Enhanced coronary computed tomography angiography (CCTA), Immune parameters: sCD163, sCD14, MCP-1, CXCL10; Menopause status: AMH, date of LMP.

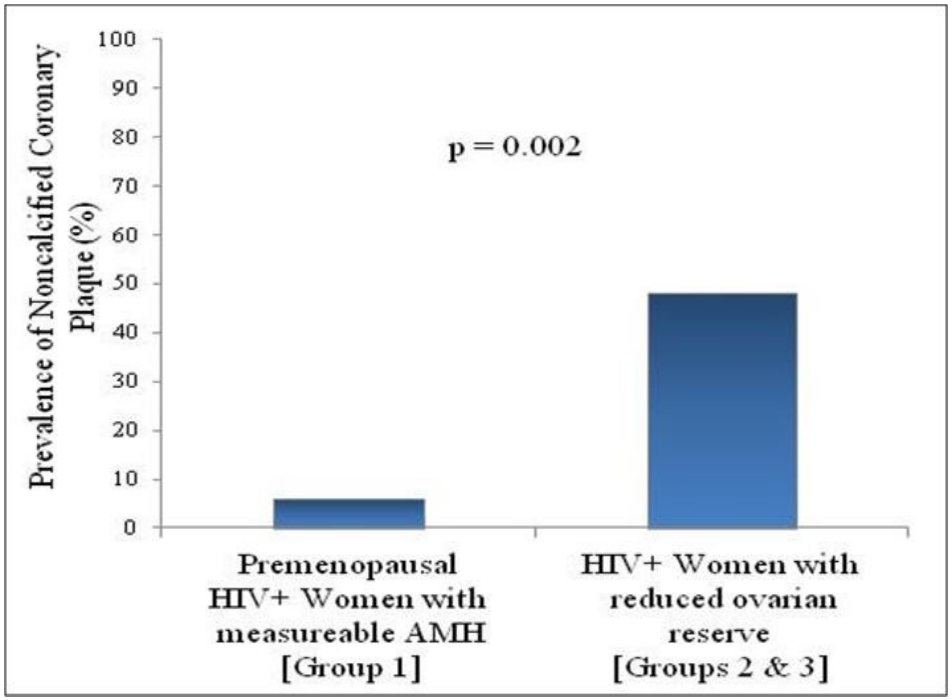
Looby Zanni et al. AIDS. 2016;30(3).

Image: http://betablog.org/national-women-girls-hivaids-awareness-day-2013/

Reduced Ovarian Reserve and CVD in WWH

- WWH with reduced ovarian reserve (undetectable AMH) had higher prevalence of coronary atherosclerotic plaque (52 vs 6%, P=0.0007), and non-calcified plaque (48 vs. 6%, P=0.002).

- WWH with reduced ovarian reserve had higher levels of log sCD163 (p=0.0004) and log MCP-1 (p=0.006) compared with premenopausal women with measureable AMH.



Reduced ovarian reserve related to noncalcified plaque, controlling for traditional CVD risk factors (p=0.04) and sCD163 (p=0.03).

Looby et al. AIDS. 2016;30(3).

Conclusions

- WWH with reduced ovarian reserve have increased subclinical coronary atherosclerotic plaque compared with premenopausal women with measureable AMH controlling for CVD risk factors including age and immune activation.
- Markers of immune activation increase across the reproductive aging spectrum in women with HIV.
- Reduced ovarian reserve may contribute to CVD risk burden in women with HIV.

Looby et al. AIDS. 2016;30(3).

Hot Flashes and Cardiovascular Disease Risk Indices Among Women With HIV

- Among the whole group (n=42) and among WWH (n=23) (but not among women without HIV), women with >1 hot flash per day had higher levels of sCD14 compared with women with ≤1 hot flash per day (P = .004 and P = .02, respectively).

- Among WWH, years since onset of hot flashes related directly to increased intramyocardial steatosis (ρ = 0.80; P = .02) and decreased diastolic function (ρ = –0.70; P = .03) (measured by MRI/MRS)

Toribio, Fulda, Looby, Zanni, et al. OFID, 2021

How does bone health differ by menopausal status in women on ART?

- 73 HIV vs. 55 non-HIV postmenopausal (FSH>30 or FSH>20+E2<30, age>55ys) Hispanic and African American women
- Change in BMD over 15.4 month showed lower BMD at spine, total hip and radius in HIV
- Prevalence of osteoporosis reported in meta-analysis of studies ranged from 7.3% to 84% and 0.7% to 23% in HIV and non-HIV postmenopausal women, respectively.

Yin, JCEM 2012

Treatment Considerations

Treatment

(General population)

- Treatment based on the person's tolerance of symptoms, health history, risk factors, and personal preferences
- North American Menopause Society: https://www.menopause.org/
- Common treatments used by menopausal women without HIV:
  - Hot Flashes: SSRIs; gabapentinoids
  - CBT, soy, behavioral modifications: layers, cool temperatures, exercise

Hormone Therapy

FDA

Menopausal hormone therapy for women living with HIV
King, EM et al. The LANCET HIV, 2021

Tx of Symptoms

Vasomotor Symptoms

HT has been shown in double-blind RCTs to relieve hot flashes and is approved as first-line therapy for relief of menopause symptoms in appropriate candidates.

Genitourinary Symptoms

Low dose vaginal estrogen has been shown in RCTs to effectively restore genitourinary tract anatomy, increase superficial vaginal cells, reduce vaginal pH, and treat symptoms of vulvovaginal atrophy.

Prevention of Chronic Disease

Prevention of Bone Loss

HT has been shown in double-blind RCTs to prevent bone loss, and in the WHI to reduce hip fractures in postmenopausal women (33%).

Premature Hypoestrogenism

HT is approved for women with hypogonadism, POI, or premature surgical menopause without contraindications, with health benefits for menopause symptoms, prevention of bone loss, cognition and mood issues, until the average age of menopause.

The North American Menopause Society 2017 Hormone Therapy Position Statement Advisory Panel (NAMS). 2018;24(7):728-753.

Menopause Hormone Therapy (MHT) Uptake & Experience in Postmenopausal WWH

Table 5. Acceptability of HRT based on ethnicity.

WLHIV black ethnicity	) WLHIV white ethnicity	
Declined HRT n/number offered (%) 15/39 (38%)	Declined HRT n/number offered (%) 2/6 (33%)	0.81 (0.20–7.68)
Accepted HRT n/n offered (%) 24/39 (61%)	Accepted HRT n/n offered (%) 4/6 (66%)	0.81 (0.13–4.92)
Reported good symptom control n/n started HRT (%) 22/24 (91%)	Reported good symptom control n/n started HRT (%) 3/4 (75%)	0.43 (0.04–4.52)
Discontinued HRT n/n started HRT (%) 4/24 (17%)	Discontinued HRT n/n started HRT (%) 0/4	0.67 (0.09–43.63)

- 73 PM WWH in UK; Retrospective chart review; 47 yrs
- MHT rx primarily for HFs & mood symptoms
- 65% were offered MHT (48/73), (28/48) 58% accepted it
- Most common regimen: transdermal oestradiol/micronized progesterone (patch or gel) + micronized progesterone
- Most discontinued due to irregular bleeding

Howells et al. 2019
Post Reproductive Health

HT Use is Low in WWH

Menopause in women living with HIV in England: findings from the PRIME Study

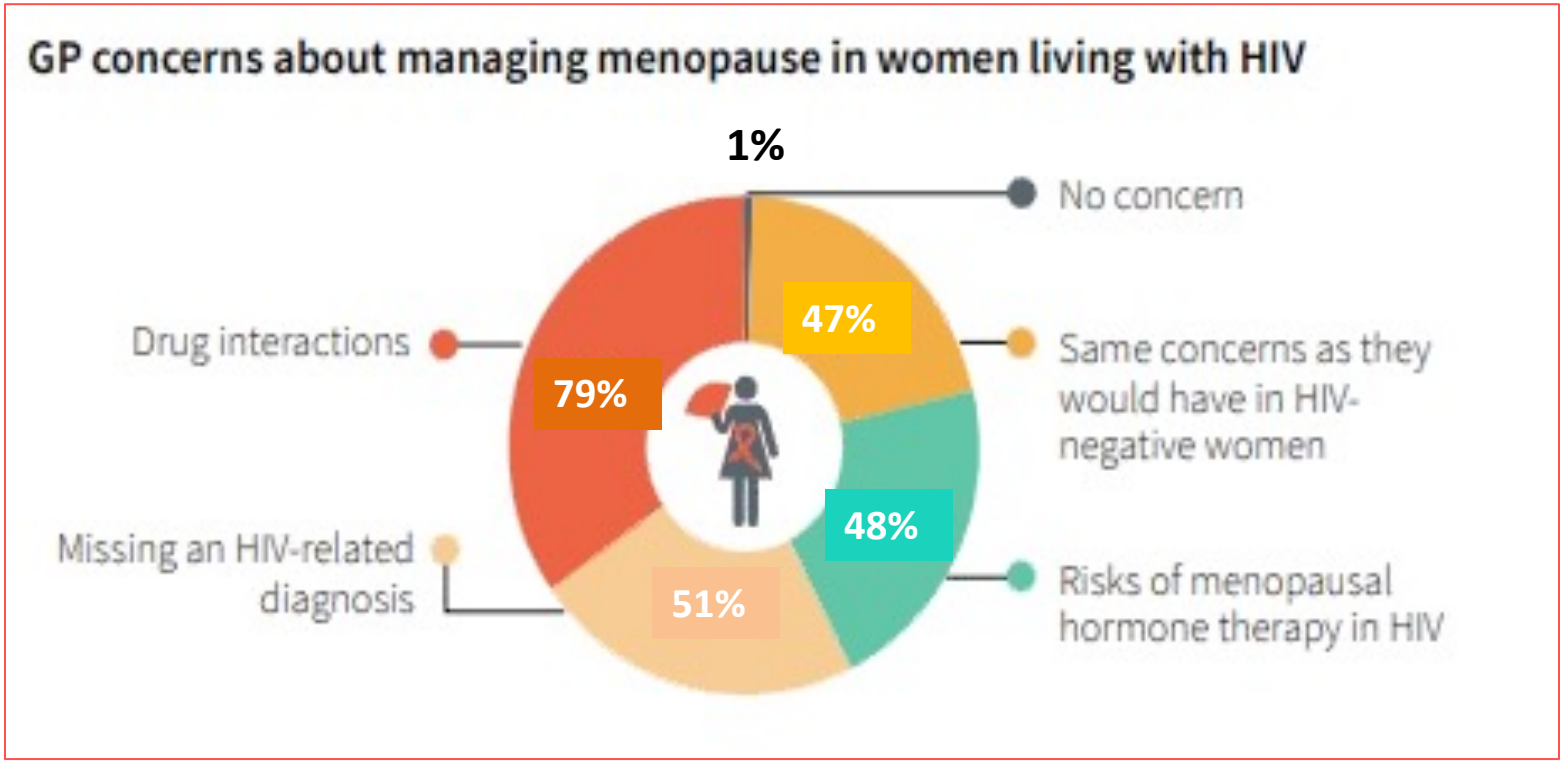
Dr. Shema Tariq on behalf of the PRIME Study Group

Poster preliminary data N=400

- 8% WWH with somatic symptoms reported MHT use
- 3% WWH with urogenital symptoms reported current vaginal oestrogen use
- Qualitative data suggests:
  - Some women do not wish to take another medication
  - Challenges with accessing menopause care for symptoms
  - Unprepared for menopause, lack of knowledge/information

Tariq, S et al. 9th IAS Conference on HIV Science, 23-26 July; Paris 2017

Provider Perceptions of HT Use in HIV



Tariq, S: https://thebms.org.uk/wp-content/uploads/2018/05/PRIME-report-2018_web_EMBARGOED.pdf; page12

N= 88 PCPs in England (Chirwa et al. 2017)

Explored menopause management in WWH

- >95% PCPs reported feeling confident with managing menopause in the general population, 46% felt confident managing WWH
- 96% PCPs felt menopause in WWOH should be managed by PCPs, though only about 50% felt they should manage menopause in WWH

Key Considerations re: Hormone Therapy (HT) Use
(General Population)

Fundamental Concepts: **1) Use of HT for Menopausal Symptoms**
2) Use of HT for Prevention of Chronic Diseases

- Age & Timing of Use
- FDA approved indications
- Type and Duration of Use
- Safety and Uncertainty

Age and Timing of Use (General Population)

- Hormone therapy (HT) is an acceptable option for treating moderate to severe menopausal symptoms in women **below the age of 60 or within 10 years of menopause and healthy.**
- Data show reduced CHD in women who initiate HT aged younger than 60 years and/or within 10 years of menopause onset

The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.

Contraindications to HT Use

- **Undiagnosed abnormal genital bleeding**
- Known, suspected, or **history of breast cancer**, except in appropriately selected patients being treated for metastatic disease or with oncology involvement
- Suspected estrogen-dependent neoplasia
- **Active or history of deep vein thrombosis, pulmonary embolism**
- Active or recent (within the past year) **arterial thromboembolic disease**
- **Liver dysfunction or disease**
- Known or suspected pregnancy
- Known hypersensitivity to ET or EPT
- Porphyria cutanea tardis

FDA Approved Indications for Hormone Therapy

(General Population)

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The North American Menopause Society 2017 Hormone Therapy Position Statement Advisory Panel (NAMS). 2018;24(7):728-753.

Area of Scientific Uncertainty: Coronary Heart Disease

- HT is not FDA indicated for primary or secondary cardioprotection
- Caution is recommended when considering data that suggest reduced coronary heart disease and all-cause mortality when hormone therapy is initiated in women aged younger than 60 years and/or who are within 10 years of menopause onset
  - Evidence from the WHI
    - Absolute risk of CHD was lower in younger, recently postmenopausal women
    - Heart attack risk increased during the first year of EPT in older women
    - Use of HT within 10 y of the onset of menopause was associated with a lower CHD risk than if it was started ≥20 y from LMP
    - Women aged 50-59 y in the ET arm had a more favorable all-cause mortality and fewer MIs
- Greater risks if initiated further from menopause or in women aged older than 60 years

The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.

Body Composition and Weight Outcomes

- An accelerated increase in fat mass and concurrent loss of lean mass occurs in the late peri-early postmenopause: 3.6% cumulative rise and fat mass and 1.6% reduction in lean mass over the 3.5 year MT
- **Does HT associate with reduction in weight or body fat?**
- No definitive results- findings limited by body composition measurements, HT type.
- Papadakis et al JCEM 2018 – OsteoLaus Cohort- cross-sectional findings suggest MHT use is associated with lower visceral adiposity controlling for covariates; WHI did not detect impact of MHT on fat mass or weight- sub-study analysis. Chen et al 2005, AJCN

Greendale et al, JCI Insight. 2019;4(5):e124865.

Risks re: Age and Time Since Menopause

- For healthy symptomatic women aged younger than 60 years or within 10 years of menopause onset, the more favorable effects of HT on coronary heart disease and all-cause mortality should be considered against potential rare increased risks of breast cancer, venous thromboembolism (VTE), and stroke
- Women who initiate HT aged older than 60 years and/or more than 10 years, and clearly by 20 years, from menopause onset are at higher absolute risks of CHD, VTE (risk of pulmonary embolism), and stroke than women initiating HT in early menopause
- Personal and familial risk of CVD, stroke, and VTE should be considered when initiating HT

The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.

Risk of Blood Clots/Stroke

- Both estrogen therapy and estrogen with progestogen therapy increase the risk of blood clots in the legs and lungs
- Although the risks of blood clots and strokes increase with either type of HT, the risk is rare in the 50-59-year-old age group
- Based on observational data only, the use of lower doses and transdermal therapy appears to be associated with lower venous thromboembolic and stroke risk

The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.

Hormone therapy and breast cancer

- The effect of hormone therapy (HT) on breast cancer risk is complex and conflicting
- The effect of HT on breast cancer risk may depend on
  - Type of HT, dose, duration of use
  - Regimen, route of administration
  - Prior exposure to HT
  - Individual characteristics

The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.

Potential Adverse Events of HT

- Uterine bleeding (starting or returning)
- Breast tenderness (sometimes enlargement)
- Nausea
- Abdominal bloating
- Fluid retention in extremities
- Changes to the shape of the cornea (sometimes leading to contact lens intolerance)
- Headache (sometimes migraine)
- Dizziness
- Mood changes with EPT, particularly with progestin
- Angioedema
- Gallstones, pancreatitis

Considerations for WWH

Treatment

- Bone Loss-
  Chronic Disease Prevention
- Hot Flashes
  Downstream effects on mood, sleep, cognition
  Symptom Management

Safety

Treatment individualized- complete health history/risk assessment
CVD risk: uncertainty of HIV-non-traditional CVD risk
Age- timing of start- <60, onset of menopause w/in 10yr
Duration of HT use
Contraindications as presented: breast cancer, VTE, liver dz
Psychosocial concerns
Education- WWH and their providers
Adherence

Preparation

? Transdermal patch? Appropriate for women with metabolic syndrome, elevated triglycerides, fatty liver. Also shown to be better in smokers. Not subjected to first-pass hepatic metabolism.
For bone loss-ET, EPT or CEE

Monitoring

Safety; mammograms; assessing for adverse effects; adherence, proper use

S Looby, unpublished 2021

Conclusion

Patient-Specific Factors: PMH, current medications, Age, Symptoms/Conditions, psycho-social & lifestyle factors, patient desire for treatment

Safety- HIV, ART- Interactions, age at menopause, risk factors, side effects

Provider Comfort & Education:

ID providers, PCPs, collaboration, monitoring & management

Research

- Menopause symptom science in HIV
  - What is the interface between menopause symptoms and HIV symptoms?
  - Downstream implications on HIV clinical variables, immunologic/virologic control, ART use, adherence
  - Treatment modalities in women with HIV-use of menopause hormone therapy?
- Cardiovascular disease risk & bone health in women with HIV

Thank you!

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Hormone therapy, the Women's Health Initiative, and breast cancer

- Increased risk of invasive breast cancer in the WHI was found after 5.6 years of conjugated equine estrogen 0.625 mg + medroxyprogesterone acetate 2.5 mg therapy (CEE + MPA); 3 years in for women with prior HT use
- The attributable risk of breast cancer (women mean age 63) randomized to CEE + MPA is less than 1 additional case of breast cancer diagnosed per 1,000 users annually
- No increased risk of breast cancer was seen with 7 years conjugated equine estrogen 0.625 mg alone therapy. Allows for more flexibility in duration of estrogen therapy use in women without a uterus

The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.