

Age at Menopause in Women Living with HIV: A Systematic Review

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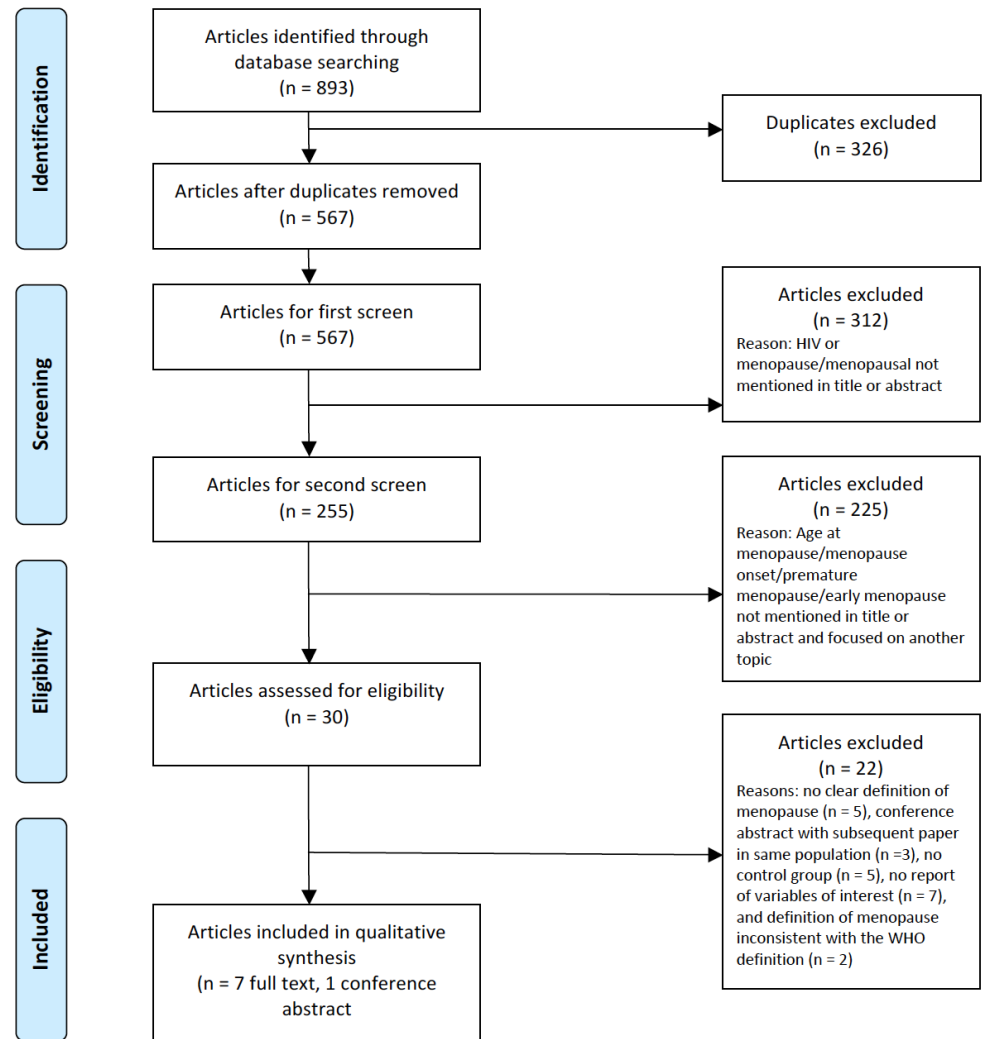
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Introduction

- 3.7 million women living with HIV (WLWH) >50 years of age¹
- Global median age at menopause 50.5 years²
- Menopause marks a time period of increased morbidity³
- Conflicting data on age at menopause in WLWH
- WLWH have higher prevalence of prolonged amenorrhea⁴

How does HIV impact the age at menopause and the prevalence of early and premature menopause in WLWH?

Methods



Inclusion: WLWH, WHO definition of menopause >12months of amenorrhea
Exclusion: did not consider surgical or iatrogenic menopause, did not have a control group or cite age at menopause in other population control

Table 1. Studies in systematic review and reported age at menopause

| Author, publication year | Country | Data collection dates | Study design | HIV status (source of data) | Total women in study (N) | Women with menopause (N) | Age at menopause, Mean (±SD), Median [IQR], or as stated | P-value |
|--------------------------|----------|-----------------------|-----------------|-----------------------------|--------------------------|--------------------------|--|---------|
| Agaba, 2017 | Nigeria | N/A | Cross Sectional | HIV+ | 219 | NR | NR | |
| | | | | HIV- (enrolled) | 34 | NR | NR | |
| Andany, 2017 | Canada | 2013-2015 | Cross Sectional | HIV+ | 232 | 198 | 49 [45-52] | |
| | | | | HIV- (reference population) | 2014 | NR ^a | 50.7 (median) ^b | |
| Boonyanurak, 2012 | Thailand | 2010-2011 | Cross Sectional | HIV+ | 268 | 55 | 47.3 (±5.1) | P<0.01 |
| | | | | HIV- (reference population) | 2375 | 1088 ¹ | 49.5 (±3.6) | |
| Calvet, 2015 | Brazil | 1996-2010 | Prospective | HIV+ | 667 | 132 | 48 [45-50] | |
| | | | | HIV- (reference population) | 456 | NR ^b | 51.2 (mean) ^b | |
| dePommerol, 2011 | France | 2007-2008 | Prospective | HIV+ | 404 | 69 | 49 [40-50] | |
| | | | | HIV- (reference population) | 31834 | 31834 ² | 51.2 (±3.8) | |
| Fantry, 2005 | USA | 2001-2002 | Cross Sectional | HIV+ | 120 | 30 | 50 [95% CI 49-53] | |
| | | | | HIV- (reference population) | 185 | 19 ³ | 49.3 ^a [47.3-50.5] | |
| Ferreira, 2007 | Brazil | 2005-2006 | Cross Sectional | HIV+ | 96 | 37 | 47.5 (median) ^b | |
| | | | | HIV- (enrolled) | 155 | 43 | NR | |
| Schoenbaum, 2005 | USA | 2001-2003 | Prospective | HIV+ | 302 | 62 | 46 [39-49] | P=0.03 |
| | | | | HIV- (enrolled) | 269 | 40 | 47 [44.5-48] | |

^aAfrican American women in the Bromberger et. al. cohort, ^bdid not report a measure of variance, SD = standard deviation, IQR = interquartile range, 95%CI = 95% confidence interval, NA = not available, NR = not reported
¹ Chompootweep et. al., 1993, ² Parazzini et. al., 2007, ³ Bromberger et. al., 1997, ⁴ Brambilla et. al., 1989, ⁵ Pedro et. al., 2003
Studies in red found difference in age at menopause for WLWH vs. control

Global Median Age at Menopause: 50.5 years¹

Reported Median/Mean Ages at Menopause for WLWH: 46-50 years

¹Interlace Study Team, 2019

Table 2. Prevalence of early and premature menopause

| Author, publication year ^a | HIV status ^a | Number of women included in early or premature menopause calculation (N) ^a | Prevalence early menopause (<45 years) ^a | Prevalence premature menopause (<40 years) ^a |
|---------------------------------------|-------------------------|---|---|---|
| Agaba, 2017 ^a | HIV+ ^a | 219 ^a | 57 (27.9%) ^{a,b} | NR ^a |
| | HIV- ^a | 34 ^a | 1 (2.7%) ^{a,b} | NR ^a |
| Andany, 2017 ^a | HIV+ ^a | 198 ^a | 29 (14.6%) ^a | 14 (7.6%) ^a |
| | HIV- ^a | NR ^a | NR ^a | NA ^a |
| Calvet, 2015 ^a | HIV+ ^a | 132 ^a | 36 (27%) ^a | 3 (2.3%) ^a |
| | HIV- ^a | NR ^a | NR ^a | NR ^a |
| de Pommerol, 2011 ^a | HIV+ ^a | 69 ^a | 15 (22%) ^a | 8 (12%) ^a |
| | HIV- ^a | NR ^a | NR ^a | NR ^a |
| Fantry, 2005 ^a | HIV+ ^a | 30 ^a | 6 (20%) ^a | 7 (35%) ^a |
| | HIV- ^a | NR ^a | NR ^a | NR ^a |
| Schoenbaum, 2005 ^a | HIV+ ^a | 62 ^a | NR ^a | 16 (26%) ^{b,c} |
| | HIV- ^a | 40 ^a | NR ^a | 6 (10%) ^{b,c} |

^ap < 0.0001, ^bp = 0.04, NA = not available
NR = not reported

Prevalence in the General Population¹

Early Menopause (<45 years): **5%**
Premature Menopause (<40 years): **1%**

Prevalence in Studies for WLWH:

Early Menopause (<45 years): **14.6-27.9%**
Premature Menopause (<40 years): **2.3-35%**

¹Schuster et. al, 2010

Conclusions

Age at menopause in WLWH 46-50 years
5 studies found earlier menopause, 2 did not

All studies relied on self reported menopause
without biochemical confirmation (eg. FSH)

Most studies did not enroll an HIV negative
control group

A higher prevalence of premature and early
menopause may be driving the lower reported
ages at menopause in WLWH

Reported premature and early menopause may
be prolonged amenorrhea rather than
menopause

Future Directions

- HIV negative control groups
- Biochemical confirmation of menopause
- Etiology of premature and early menopause – how much of a role does prolonged amenorrhea play?