Frailty Among People Living With HIV, A Cross Sectional Pilot Study

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Synopsis

Frailty is a clinical syndrome associated with adverse health outcomes and characterized by a constellation of various health deficits. Although age is a major contributor of being frail, chronic conditions may impact frailty. HIV infection is associated with accelerated aging, and likely contributes to frailty among people living with HIV (PWH). However, frailty is an understudied condition among PWH, and the contribution of HIV to frailty has seldom been evaluated.

Aim

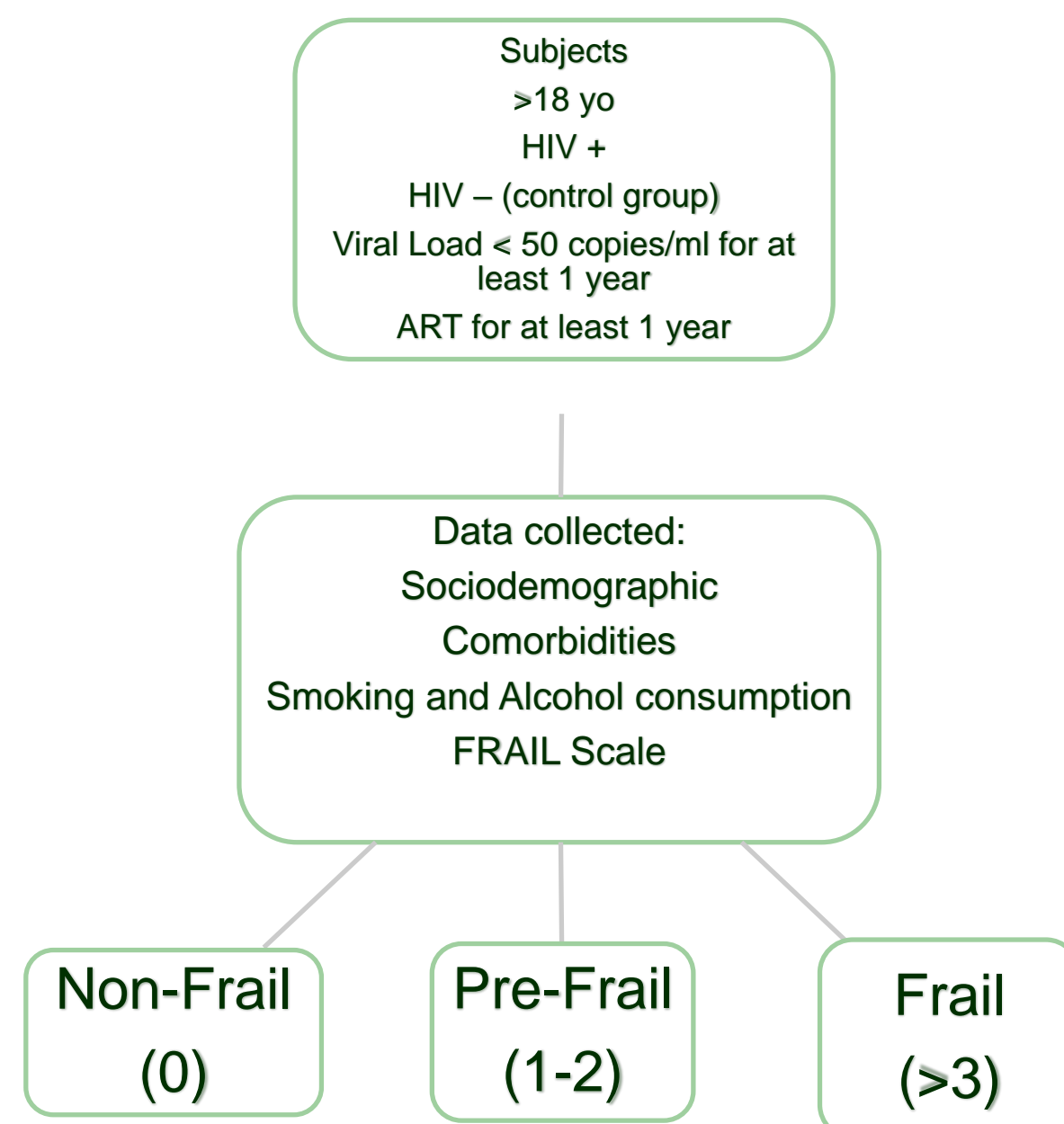To determine whether HIV is cross-sectionally associated with frailty.

Methodology

- Design: Cross-sectional study.

- The "FRAIL Scale" was administered and included self-reported symptoms
  - **F**atigue
  - **R**esistance or ability to climb a single flight of stairs
  - **A**mbulation or ability to walk one block
  - **I**llnesses > 5 or non-HIV associated comorbidities
  - **L**oss of > 5% in weight in the previous year

- The association of demographic factors and comorbidities were compared by Frail categories using descriptive statistics and ordinal logistical regression.

References:

Frailty: toward a clinical definition.
Abellan van Kan G, Rolland YM, Morley JE, Vellas B
J Am Med Dir Assoc. 2008 Feb; 9(2):71-2.

The I.A.N.A Task Force on frailty assessment of older people in clinical practice.
Abellan van Kan G, Rolland Y, Bergman H, Morley JE, Kritchevsky SB, Vellas B
J Nutr Health Aging. 2008 Jan; 12(1):29-37.

Methodology

Subjects
>18 yo
HIV +
HIV – (control group)
Viral Load < 50 copies/ml for at least 1 year
ART for at least 1 year

Data collected:
Sociodemographic
Comorbidities
Smoking and Alcohol consumption
FRAIL Scale

Non-Frail (0)

Pre-Frail (1-2)

Frail (>3)

Results

Table 2. **Comparison "Frail Scale Questionnaire" by HIV Status**

Frail Scale		HIV		Total	p
		Positive	Negative		
Fatigue n (%)	No	7 (36.8)	12 (63)	19	**.001**
	Yes	18 (85.7)	3 (14.3)	21	
Resistance n (%)	No	20 (60.6)	13 (39.3)	33	.591
	Yes	5 (71.4)	2 (28.5)	7	
Ambulation n (%)	No	21 (61.7)	13 (38.2)	34	.819
	Yes	4 (66.6)	2 (33.3)	6	
Loss of Weight n (%)	No	24 (61.5)	15 (38)	39	.433
	Yes	1 (100)	0	1	
Comorbities (>5)	No	25 (62.5)	15 (37.5)	40	N/A
	Yes	0	0	0	

Results

Table 1. **Patients Characteristics**

	Non-Frail	Pre-Frail	Frail	Total (N=40)	p
Age, mean (SD)	33.4 (16.3)	47.6 (19.9)	71 (7.6)	43.5 (20.6)	**0.003**
Male, n (%)	10 (43.4)	11 (47.8)	2 (8.6)	23	0.602
Female, n (%)	8 (47)	7 (41.1)	2 (11.7)	17	0.602
Caucasian, n (%)	8 (61.5)	5 (38.5)	0 (0)	13	0.194
African American, n (%)	10 (37)	13 (48.1)	4 (14.8)	27	0.194
Non-Hispanic, n (%)	14 (43.8)	14 (43.7)	4 (12.5)	32	0.574
BMI, mean (SD)	30.6 (7.4)	29.7 (9.8)	34 (9.5)	30.5 (8.6)	0.578
HIV Infected, n (%)	7 (28)	15 (60)	3 (12)	25	**0.019**
Hypertension, n (%)	0 (0)	9 (75)	3 (25)	12	**0.001**
Hypercholesterolemia, n (%)	0	3 (60)	2 (40)	5	**0.018**
Coronary Artery Disease, n (%)	0	0	1 (100)	1	**0.010**
Stroke, n (%)	0	2 (100)	0	2	0.276
Diabetes, n (%)	0	2 (100)	0	2	0.276
CKD, n (%)	0	2 (100)	0	2	0.276
Anemia, n (%)	1	2 (100)	0	3	0.684
Bone Loss, n (%)	0	1 (50)	1 (50)	2	0.115
Menopause, n (%)	0	1 (50)	1 (50)	2	0.115
Hepatitis B, n (%)	0	0	1 (100)	1	**0.010**
Hepatitis C, n (%)	0	1 (50)	1 (50)	2	0.115
Alcohol, n (%)	1 (50)	1 (50)	0	2	0.890
Smoking, n (%)	3 (42.90)	3 (42.9)	1 (14.3)	7	0.917

- 40 participants
- mean age of 43 (SD 20.6)
- 80% Non-Hispanics
- 35% White
- 52% females
- 25 (62.5%) HIV +
- 15 (37.5%) HIV -
- 18 (45%) Non-Frail
- 18 (45%) Pre-Frail
- 4 (10%) Frail

In the HIV + group we found a significant difference between the Frail Status (p 0.019), 7 (28%) were Non-Frail, 15 (60%) Pre-Frail and 3 (12%) Frail.

The mean age for Non-Frail 33.4 (SD 16.3), Pre-Frail 47.6 (SD 19.9) and Frail 71 (SD 7.6) with a significant group differences (p 0.003).

The most prevalent self-reported variable in the Frail Scale was "Fatigue" among the HIV + group (p 0.001).

On Regression analysis:

- **HIV status and age were significant predictors of frailty status :** HIV χ2 (1) = 4.36, p = .037, **Age χ2 (1) = 13.48, p <.001**
- **When controlling for age, being HIV (-) on average reduced frailty by an odds of:** 2.16 (b = -2.164, SE = 1.04, p = .037, 95% CI [-4.2, -0.13])
- **When controlling for HIV status, for everyone year of increase in age, the ordered log odds of being frail increased by:** 0.07 (b = 0.07, SE = 0.02, p < .001, 95% CI [0.03, 0.1])

Conclusion

- Using the FRAIL scale we identified high prevalence of frailty among PWH, even when controlling for age.
- The overall non-HIV group show a reduced level of Frailty.
- Pre-frail status was prevalent among adults below 50 years old.
- Further studies are needed to identify the best tools to assess frailty.

Acknowledgments: