SARCOPENIA, FRAILTY, NUTRITION AND HCV INFECTION AMONG OLDER PEOPLE WITH HIV

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BACKGROUND:

- Sarcopenia is a geriatric syndrome associated with loss of muscle mass and functionality. It may increase morbidity and mortality.
- As Asian data are limited, we investigated the prevalence and risk factors for sarcopenia in older people living with HIV (PLWH).

METHODS:

- We conducted a cross-sectional study in a cohort of virologically well-suppressed PLWH and age- and sex-matched HIV-negative controls, aged ≥50 years, from 2017 to 2018 in Bangkok, Thailand.
- Diagnosis of sarcopenia was based on Asian Working Group for Sarcopenia 2019 criteria: handgrip strength by a handheld dynamometer (male <28kg, female <18kg), walking speed 4-meter-walk <0.8m/s and skeletal muscle mass (male <7.0kg/m^2, female <5.7kg/m^2) by bioelectrical impedance analysis.
- Osteoporosis was defined as T-score cutoff points ≤-2.5 at any site of DEXA scan (lumbar spine, total hip and femoral neck).
- Frailty and nutritional status were evaluated using Fried's criteria and Mini-Nutritional Assessment, respectively.
- Multivariable logistic regression analysis was used to assess the relationship between sarcopenia and participant demographic and clinical variables.
- We also compared bone turnover markers between those with or without sarcopenia.

RESULTS:

- 407 participants (277 PLWH and 130 controls) were included; 36% were female. Median age was 55 (interquartile range (IQR): 52-60) years and median duration of ART was 16 (IQR:13-19) years.
- PLWH had a higher prevalence of sarcopenia (8.3% vs 3.1%, p=0.05), HCV infection (9.0% vs 2.3%, p=0.011), frailty (9% vs 3.1%, p=0.001) and at higher risk of malnutrition or malnourishment (18% vs 7%, p=0.002) when compared with control groups.
- Osteoporosis at any site was almost two-fold in PLWH than in controls (15% and 8.5% (p=0.06)).
- Serum 25(OH)D, phosphorous, calcium, C-terminal telopeptide (CTX), amino-terminal pro-peptide of type-1 procollagen (P1NP) and intact Parathyroid Hormone (iPTH) were not significantly different between the sarcopenia and non-sarcopenia groups.
- In a multivariate model among PLWH, BMI <18.5kg/m2, male sex, HCV coinfection, frailty, and malnutrition were significantly associated with sarcopenia, described in the table.

Table: Association between sarcopenia with sociodemographic and clinical-related factors Among 277 PLWH, identified by multivariate logistic regression

VARIABLES		OUTCOME		BIVARIABLE		MULTIVARIABLE	
		No sarcopenia (n=254)	Sarcopenia (n=23)	OR (95%CI)	p-value	OR adj (95%CI)	p-value
Sex	Male	153 (88.44)	20 (11.56)	4.40 (1.27-15.20)	0.019	7.9 (1.48-42.23)	0.016
	Female	101 (97.12)	3 (2.88)	1 (ref)			
BMI (kg/m^2)	<18.5	12 (70.59)	5 (29.41)	5.60 (1.78-17.65)	0.003	12.22 (2.22-67.22)	0.004
	≥18.5	242 (93.08)	18 (6.92)	1 (ref)		1 (ref)	
HCV coinfection	Yes	20 (80.00)	5 (20.00)	3.25 (1.09-9.68)	0.034	4.05 (1.1-14.93)	0.036
	No	234 (92.86)	18 (7.14)	1 (ref)		1 (ref)	
Frailty	Robust	92 (95.83)	4 (4.17)	1 (ref)			
	Pre-frail or frail	162 (89.5)	19 (10.5)	2.70 (0.89-8.17)	0.079	4.67 (1.2-18.16)	0.026
Nutritional status	Normal	215 (95.13)	11 (4.87)	1 (ref)		1 (ref)	
	At risk of malnutrition/malnourished	39 (76.47)	12 (23.53)	6.01 (2.48-14.59)	<0.001	5.69 (1.86-17.44)	0.002

CONCLUSION:

- In this aging cohort, PLWH had a higher burden of sarcopenia than HIV-negative individuals.
- Besides low BMI and male gender, hepatitis C co-infection, poorer nutritional status and frailty were identified as predictive risk factors.
- Therefore, interventions to improve nutritional status and early HCV treatment may reduce the risk of sarcopenia in older PLWH.

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