HIV Neuropsychiatry

Aging well with HIV infection: beyond the absence of comorbidities

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What is Cognitive Ageing?

Cognitive abilities include awareness, information handling, memory and reasoning.

While the existing literature is largely focused on a "deficit approach," understanding the characteristics of older individuals with HIV who are "aging successfully" (e.g., free from actual and perceived cognitive impairment) may help to inform preventative efforts.

Successful Cognitive Aging (SCA)

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SCA broadly refers to the multidetermined process of preserving cognitive abilities, or exhibiting less- than-expected decline in neural structure and function typically associated with aging and its comorbidities

SCA is operationalized as the absence of neurocognitive and depressive symptoms in elderly

Purpose

HIV Neuropsychiatry

✓ to describe prevalence and predictors of Successful Cognitive Aging (SCA), defined by absence of neurocognitive and depressive symptoms in elderly HIV infected pts.

✓ to find relationships between HIV-Associated Non AIDS (HANA) conditions and both SCA and non-SCA condition (Depressed or Cognitive Impaired).

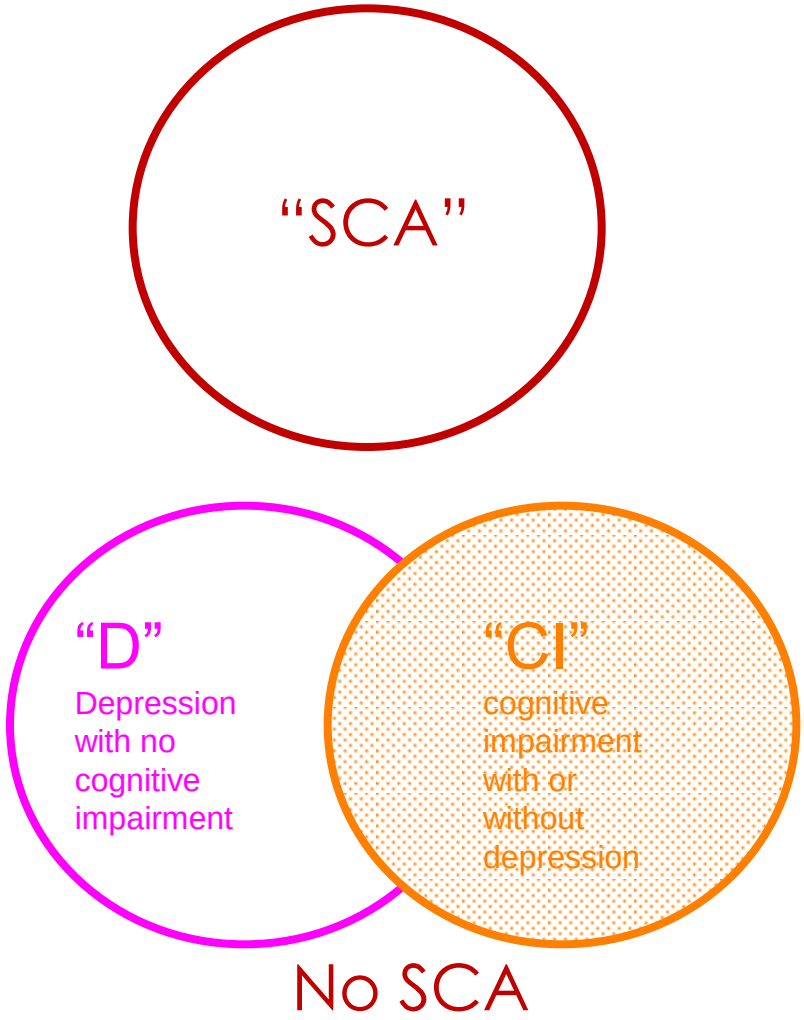
METHODS

SCA was defined as absence of:

1. Performance based neurocognitive deficits including:
   - Hopkins Verbal Learning Test
   - Non-dominant Grooved Pegboard,
   - Trail Making Test (Parts A&B)

2. Self-reported symptoms including:
   - Evaluation of personal performance in the daily activities
   - Instrumental Activities of Daily Living questionnaire (IADL)

- Depression (Centre for Epidemiologic Studies Depression Scale - CESD≥16)



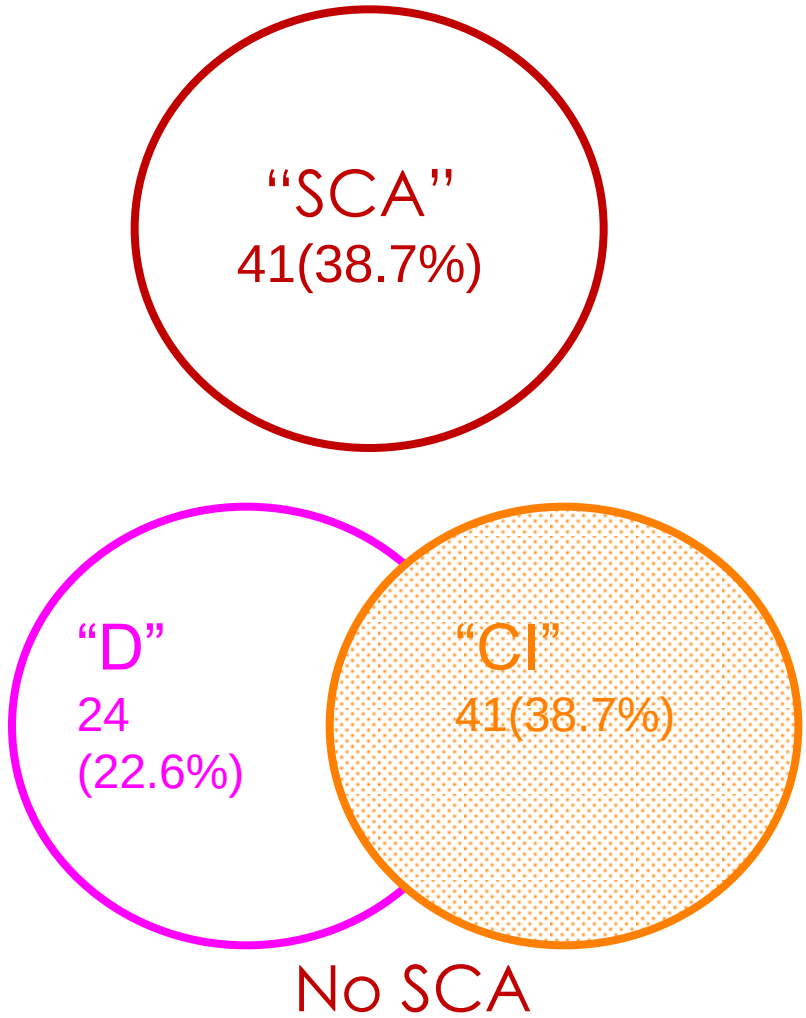
METHODS

Inclusion criteria were:

- age≥50 years
- on HAART for at least 1 year,
- suppressed HIV-RNA viral load (<40copies/ml)

Exclusion criteria were:

- acute psychotic disorders
- severe neurological disease
- end-stage organ failure.

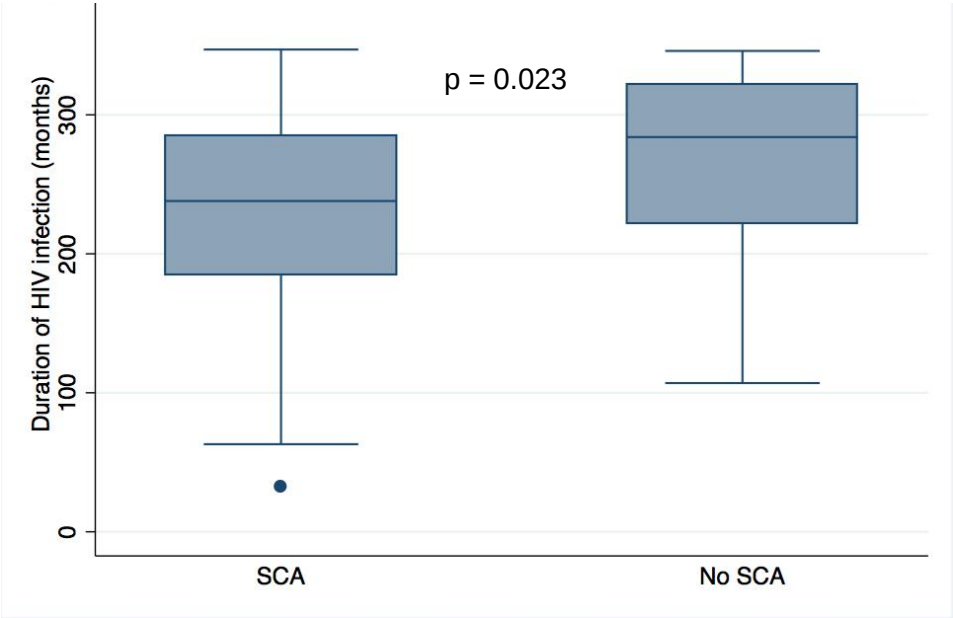


Demographic variables of the population

CHARACTERISTICS n(%), m(IQR)	SCA GROUP 41 (38.68%)	D GROUP 24 (22.64%)	CI GROUP 41 (38.68%)	P-VALUE
DEMOGRAPHIC CHARACTERISTICS				
Age	54 (52-62)	55 (52-59.5)	54 (52-58)	
Male sex	28 (68.29%)	17 (70.83%)	33 (80.49%)	
Smoke pack year	22.2 (12.7-32)	25.5 (8.5-25.5)	21 (10.4-32.7)	
Physiscal activity				0.046
No physical activity	15 (36.6%)	16 (66.67%)*	23 (56.10%)	
<30 min/week	22 (53.7%)	8 (33.3%)	10 (39.%)	
>3 min/week	4 (9.8%)	0 (0%)	2 (4.88%)	
Daily alcool intake				
No alcool	19 (46.3%)	14 (58.3%)	28 (68.29%)	
<20 g/day	20 (48.8%)	10 (41.67%)	13 (31.71%)	
>20 g/day	2 (4.88%)	0 (0%)	0 (0%)	
BMI	24.8 (22.1-26.4)	24.9 (21.5-27.8)	24.2 (21.1-26.3)	

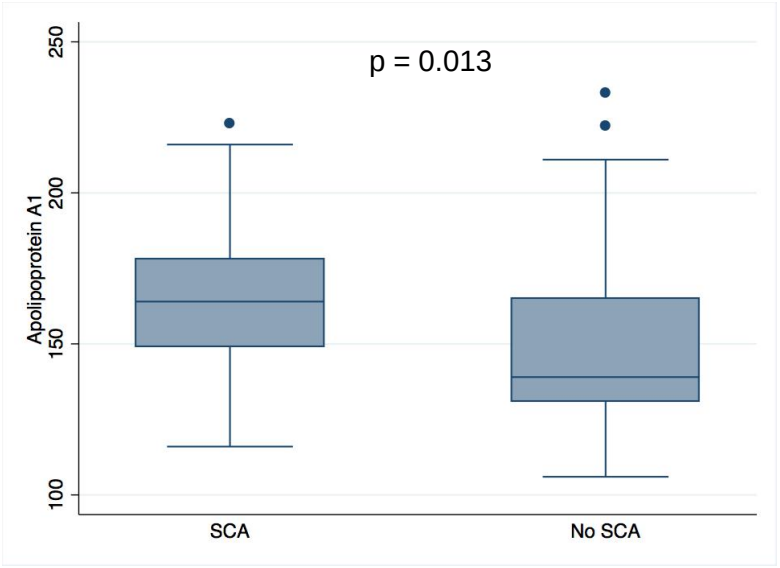
HIV-specific variables of the population

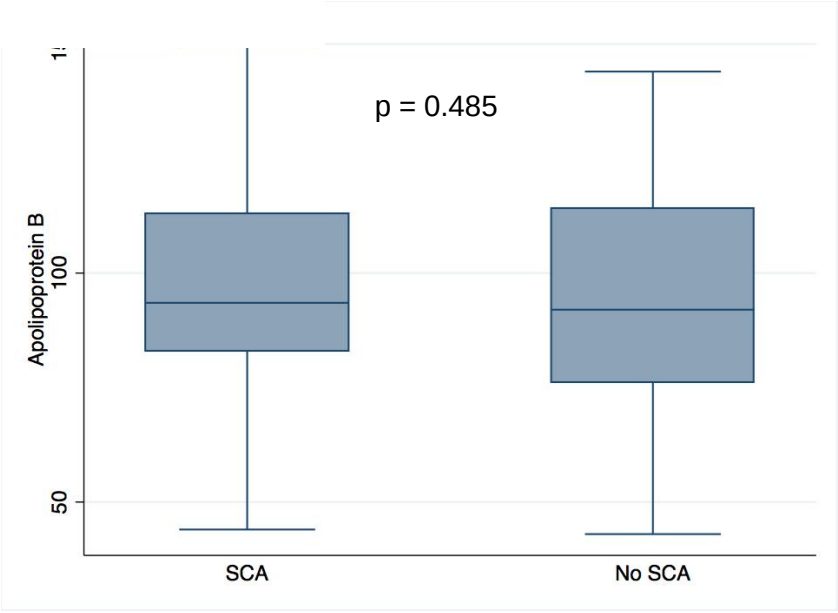
CHARACTERISTICS n(%), m(IQR)	SCA GROUP 41 (38.68%)	D GROUP 24 (22.64%)	CI GROUP 41 (38.68%)	P-VALUE
CDC group C	11 (28%)	7 (29%)	13 (34%)	
HIV Risk Factor				
IDU	9 (21.9%)	1 (4.17%)	12 (29.27%)	
MSM	11 (26.83%)	12 (50%)	13 (31.71%)	
Hetero	17 (41.46%)	8 (33.33%)	14 (34.15%)	
HIV infection duration (months)	257 (210-2297)	230.5 (175-274)*	284 (222-322)	0.034
HCV infection	13 (31.7%)	3 (12.5%)	15 (36.59%)	
Lympho CD4+ nadir	170 (100-245)	200 (87.5-303)	160 (57-216)	
Lympho CD4+ count	606 (493-715)	669 (447-742)	564 (432-687)	
ARV duration (months)	166 (121-208)	123 (96-197)	183 (126-200)	
Prevoius NNRTI (months)	56 (12-128)	77 (0.5-107.5)	25 (0-100)	
Prevoius PI (months)	91 (58-142)	75 (7.5-108)	100 (52-149)	



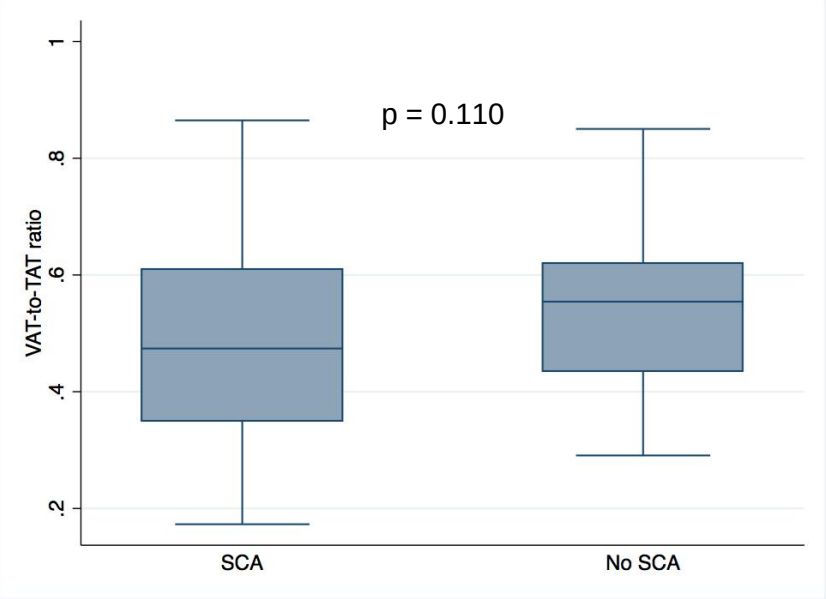
Metabolic variables of the population

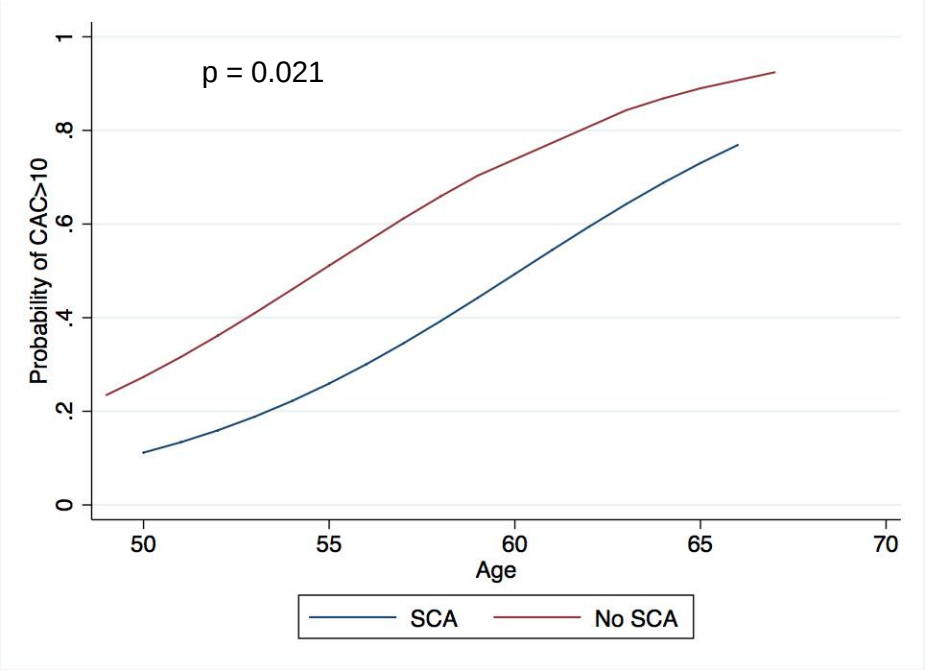
CHARACTERISTICS n(%), m(IQR)	SCA GROUP 41 (38.68%)	D GROUP 24 (22.64%)	CI GROUP 41 (38.68%)	P-VALUE
Glucose	94 (88-103)	96 (90-113)	98 (89-106)	
Triglycerides	145 (87-191)	147 (93-211)	137 (79-281)	
Total cholesterol	186 (166-203)	199 (190-232)*	191 (152-211)*	0.0356
HDL cholesterol	56 (42-64)	55 (44-65)	43 (35-63)	
LDL cholesterol	117 (95-127)	135 (111-166)*	104 (91-136)*	0.0051
ApoA1 lipoprotein	162 (149-173)	169 (135-182)	138 (130-165)*	0.0444
ApoB lipoprotein	88 (78-102)	108 (91-123)*	92 (76-114)*	0.0088
HOMA index	2 (1.42-2.92)	1.7 (2.49-3.64)	2.135 (1.49-4.1)	
PTH	38.15 (30-44)	39 (28.4-50)	32.2 (22.8-41.6)	
TSH	1.83 (1.19-2.96)	1.67 (1.1-2.31)	2.2 (1.59-3.42)	
Vitamin D	32.7 (25.9-38.5)	31.1 (22.4-37.1)	33.9 (26.3-38.9)	
MDRD	84.2 (66.9-98.4)	84 (78.8-92.9)	87.6 (79.5-108.8)	



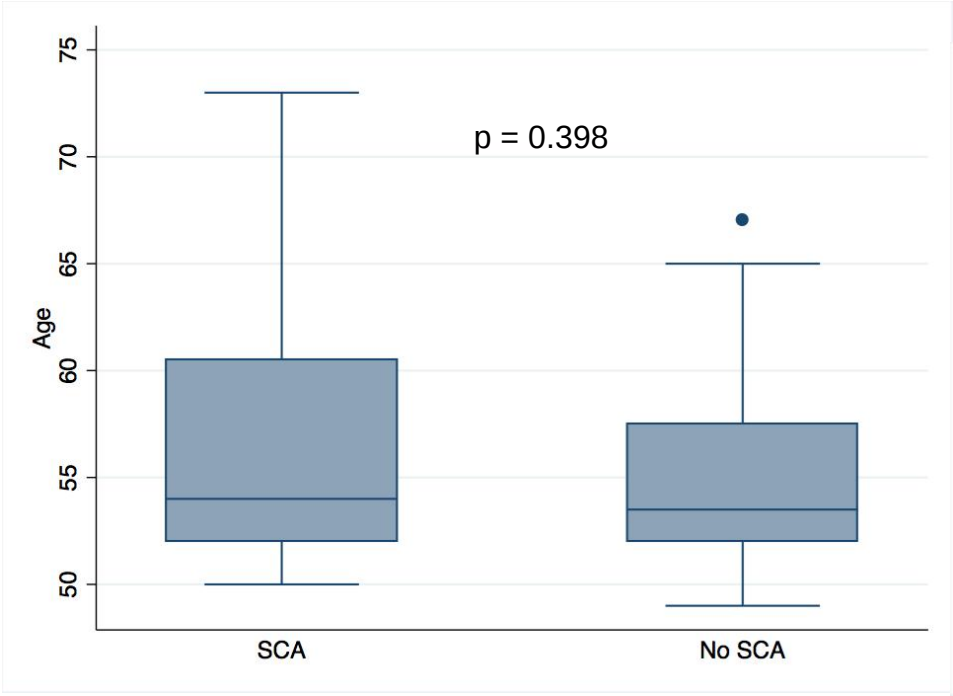


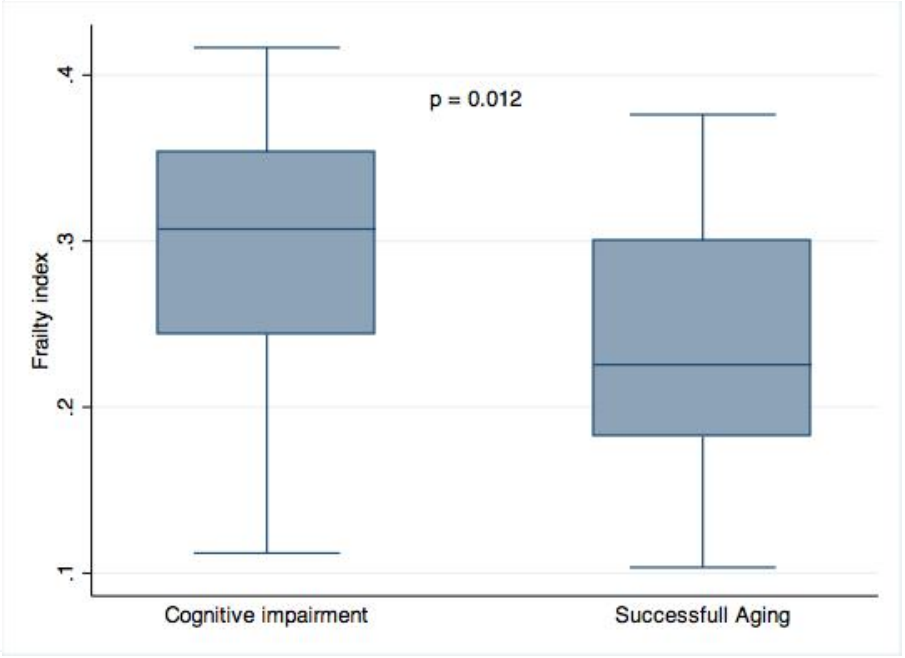
Cardiovascular variables of the population



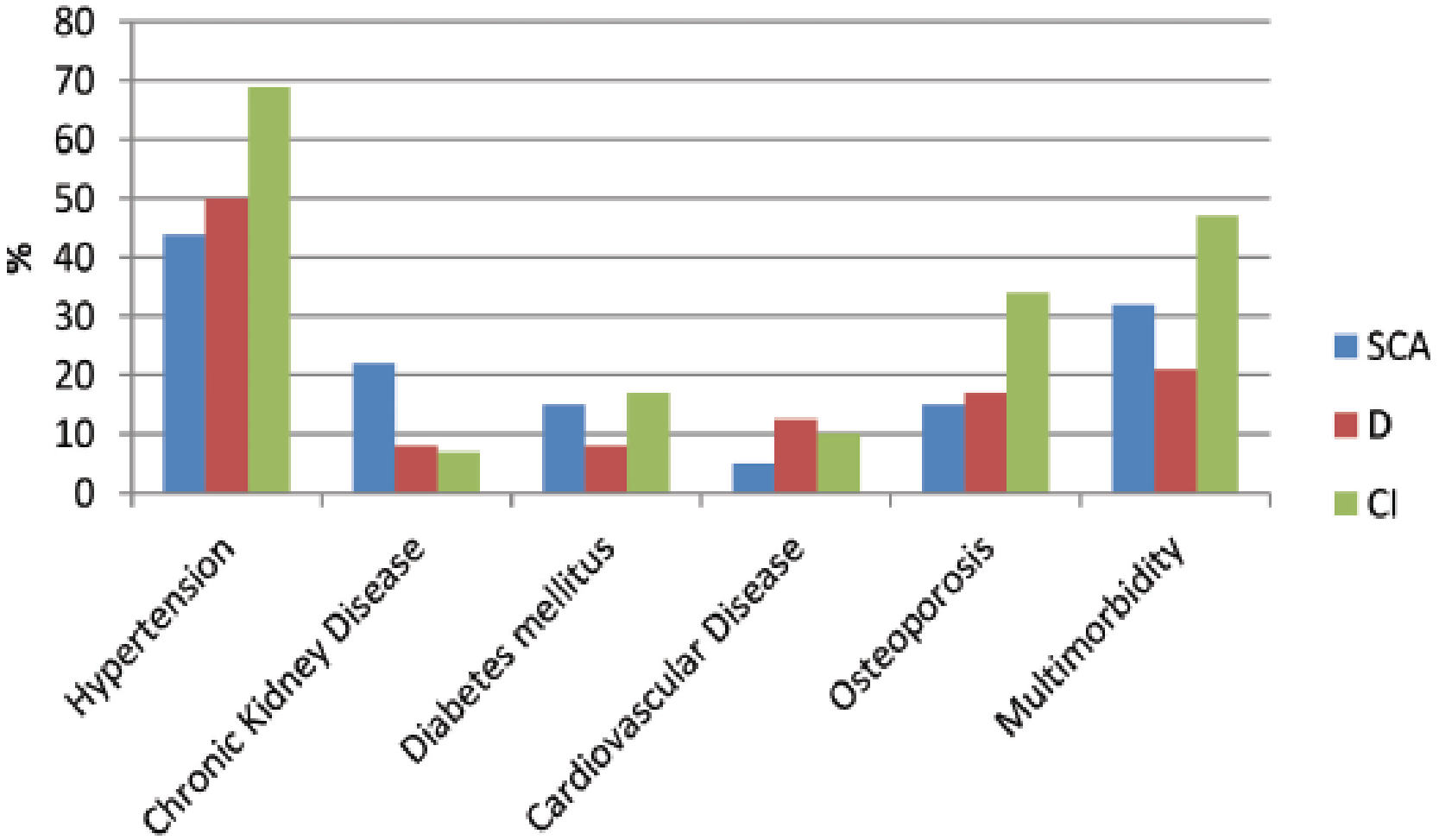


Age vs frialty





Distribution of patients according to classification in SCA group, CI group and D group.



Multivariable logistics regression analyses for factor associated with SCA group

	OR	95% C.I.	p
Men vs. Women	0.71	0.17 – 2.95	0.636
Age, per 1 yr	0.95	0.87 – 1.04	0.304
CAC > 10	3.25	1.05 – 10.07	0.041
FRS > 6	1.95	0.55 – 6.88	0.298
Duration of HIV infection, per 1 months	1.01	1.00 – 1.02	0.011
Diploma	1.30	0.51 – 3.32	0.586
ApoB/ApoA ratio	3.66	0.90 – 14.96	0.071

Discussion

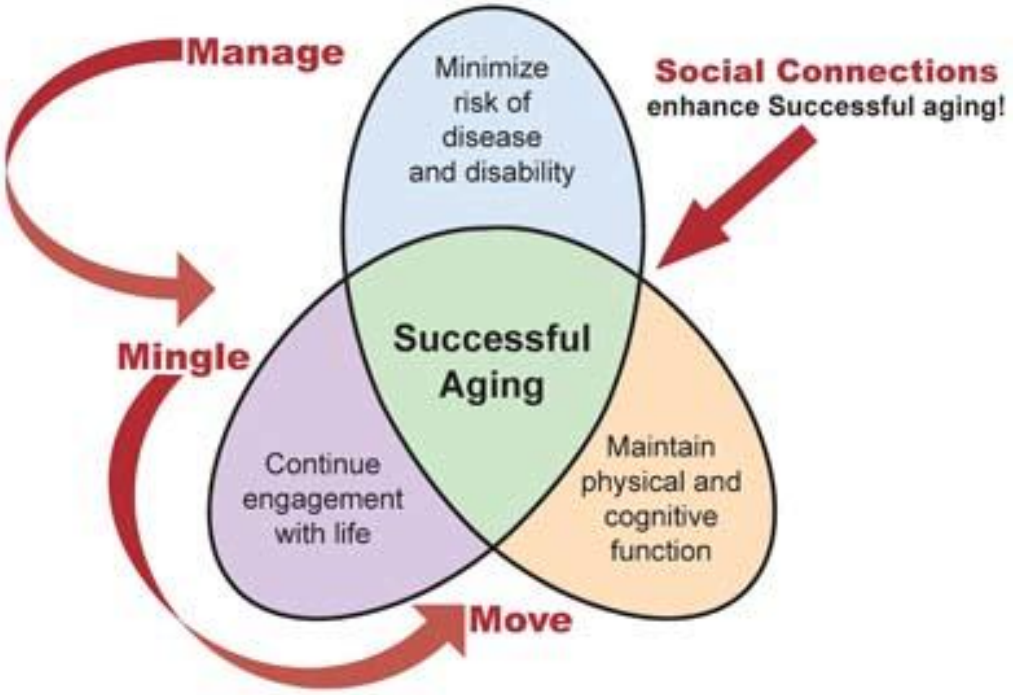
A minority (38.7%) only of HIV patients over 50 yrs experience Successful Cognitive Aging. The burden of Depression is significant in this population (38%). Treatment of this comorbidity is most likely to be most effective in increasing the proportion of individuals with SCA.

Although these pts display favorable cardio-metabolic profile, cognitive and physical conditions (HANA and MM) are not independent predictors of SCA, suggesting that other patient related outcomes including social, psychological and spiritual status may be a component of SCA that should be evaluated.

Our study provides evidence for a definition of successful cognitive aging that is broader than one based on absence of disease supporting the multidimensional model of successful aging theory, which emphasizes an integration of positive attitudes toward self and aging and attainment and maintenance of life goals and social interconnectedness.

Future steps

Facilitating the development of effective interventions aimed at promoting well-being and optimizing clinical outcomes (eg, treat depression, increase social engagement) in the rapidly growing population of aging HIV+ adults will be productive areas for future research.



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