Longitudinal Study of HIV and Aging in Brazil

883

10-Minute Targeted Geriatric Assessment identifies vulnerable and frail older persons with HIV

Marilia Bordignon Antonio[1], Jessica L. Castilho[2], Paridhi Ranadive[3], Thiago Silva Torres[4], Vanessa Gama[4], Sandra Wagner Cardoso[4], Roberta Schiavon Nogueira[5], José Valdez Ramalho Madruga[5], Estela Luz[6], Carlos Brites[6], Bryan E. Shepherd[3], Vivian Avelino-Silva[1,7,8] , Márlon Juliano Romero Aliberti[9], on behalf of ELEA-Brasil

[1]Department of Infectious and Parasitic Diseases, Faculdade de Medicina, Universidade de Sao Paulo, Sao Paulo, Brazil; [2]Division of Infectious Diseases, Vanderbilt University Medical Center, Nashville, USA; [3]Department of Biostatistics, Vanderbilt University Medical Center, Nashville, TN, USA; Instituto Nacional de Infectologia Evandro Chagas, FioCruz, Brazil[4]; CRT-DST/AIDS-SP (STD/Aids-SP Reference and Training Center), São Paulo, Brazil; Hospital[5]; Universitário Professor Edgard Santos (HUPES), Salvador, Brazil[6]; Vitalant Research Institute, San Francisco, CA, USA[7]; Department of Epidemiology and Biostatistics, University of California San Francisco, San Francisco, CA, USA[8]; Laboratorio de Investigacao Medica em Envelhecimento (LIM-66), Servico de Geriatria, Hospital das Clinicas HCFMUSP, Faculdade de Medicina, Universidade de Sao Paulo, SP, Brazil[9].

BACKGROUND

- Comprehensive geriatric assessments (CGA) are becoming increasingly important as the population of older persons with HIV (PWH) expands. However, traditional assessments as part of a CGA are often complex and time-consuming.
- The 10-minute geriatric assessment (**10-TaGA**) is a rapid, thorough assessment developed to **screen domains of CGA as well as global vulnerability**. We investigated the validity of 10-TaGA among older PWH in Brazil.

METHODS

- The Longitudinal Study of HIV & Aging in Brazil (**ELEA-Brasil**) enrolled PWH ≥50 years old on antiretroviral therapy for comprehensive clinical, social, and demographic data collection including CGA and 10-TaGA.
- 10-TaGA performance of **individual domains** (**Figure 1**) were compared with traditional assessments using Spearman correlation and Kruskal Wallis test.
- **Total 10-TaGA score** of global vulnerability was correlated with **Fried Frailty Phenotype** (FFP), **Frailty Index** (FI) and **Quality of Life** (QoL) as measured by EQ-5D-5L. Sensitivity and specificity by 10-TaGA was measured and plotted along with receiver operating characteristic (ROC) curves. Youden index was used to define the optimal threshold for frail/prefrail discriminations.

RESULTS

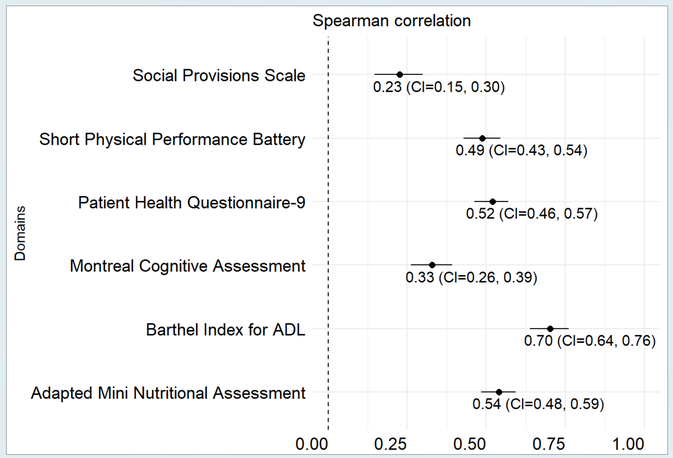
Demographic and clinical characteristics of ELEA-Brasil participants: We enrolled 703 PWH with a median age 62 years; 63% were men, 53.6% self-identified as Black/*Pardo*/mixed race/ethnicity. **Geriatric measurements:** 49% were pre-frail and 6% frail by Fried criteria.

The median time to complete the 10-TaGA was **7.53 minutes (IQR:5.72-9.48).** Results from individual domains of 10-TaGA were highly correlated with those from the corresponding extended assessments (**Figure 2**).

Figure 1: 10-minute Targeted Geriatric Assessment

10-TaGA	Normal (0 point)	Mild impairment (0.5 point)	Severe impairment (1 point)
1. Social support	Lives with family	Institutional	Living alone
2. Recent hospital use (6 months)	None	Emergency visit	Hospitalization
3. Recent falls (12 months)	None	1 fall	≥ 2 falls
4. Number of medications	< 5	5 – 9	≥ 10
5. Activities of Daily Living – ADL (Katz index)	6 ADLs	5-4 ADLs	≤ 3 ADLs
6. Cognition (10-point Cognitive Screener)	≥ 8 points	6 – 7 points	0 – 5 points
7. Self-rated health	Very good, good	Fair	Poor, very poor
8. Depression (4-item Geriatric Depression Scale)	0 – 1 point	2 points	3 – 4 points
9. Nutritional status (Weight loss ≥ 5% and BMI)	No & BMI ≥22	Yes or BMI <22	Yes & BMI <22
10. Gait speed	> 1m/s	0.6 – 1m/s	< 0.6m/s
10-TaGA Index (the sum of the score of each item divided by the number of items evaluated)			0 – 1.0 point

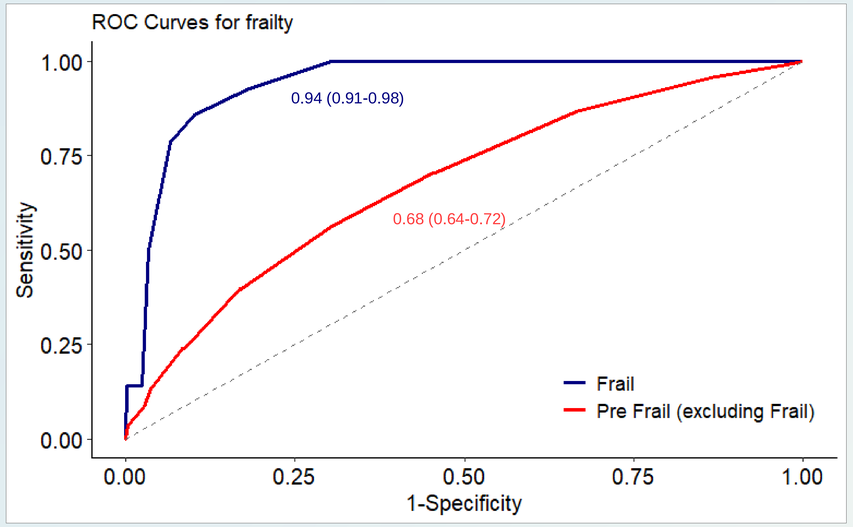
Figure 2: Individual 10-TaGA domains were highly correlated with traditional assessments



The 10-TaGA is an efficient and valid instrument for rapidly conducting a comprehensive geriatric assessment and determining frailty or pre-frailty among PWH. Highly correlated with traditional assessments and frailty measurements, it can identify specific age-related conditions and global health of older PWH.

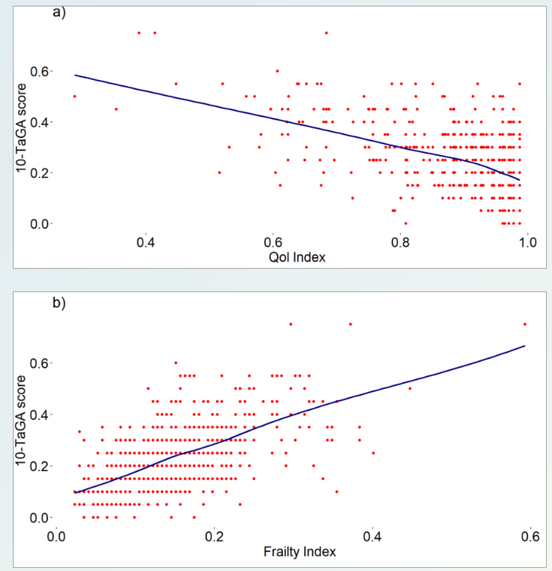
10-TaGA identified frailty in PWH (Figure 3): A total 10-TaGA score ≥0.3 provided the best balance between sensitivity (93%) and specificity (82%) for detecting frailty in PWH.

Figure 3: Discriminative Receiver Operating Characteristic (ROC) and area under curve with 95% CI of the 10-TaGA for frail and prefrail detection



10-TaGA's score was highly **positively correlated with Frailty Index** (Spearman's correlation=0.58, 95%CI 0.52 to 0.63). Conversely, 10-TaGA score **negatively correlated with the QoL index** (Spearman's correlation = -0.44, 95%CI -0.50 to -0.38), **Figure 4.**

Figure 4: Scatter plot showing relation between 10-TaGA overall score with Quality of Life Index (a) and Frailty Index (b)



CONCLUSION

10-TaGA is a CGA-based tool that detects frail PWH. Given its high applicability in HIV clinical practice, future research should investigate whether implementing 10-TaGA provides better care and improve outcomes.

Funding for this work was provided by US National Institute on Aging / NIH (R01AG071439)

bordignon.mba@gmail.com