

HIV and Comorbidities: the Impact of Comorbidities on Health-Related Quality of Life in People Living with HIV in Italy

Emanuela Foglia¹, Barbara Menzaghi², Giuliano Rizzardini³, Giovanni Cenderello⁴, Elisabetta Garagiola¹, Lucrezia Ferrario¹

PED0833

¹ Centre for Health Economics, Social and Health Care Management, LIUC Business School, LIUC- University Cattaneo, Castellanza, Italy

² Valle Olona Hospital, Busto Arsizio, Italy

³ Fatebenefratelli Sacco Hospital, Milan, Italy

⁴ ASL-1 Imperia, Sanremo, Italy

Background

- Aging of people living with HIV (PLHIV) contributes to increase in comorbidities
- Since the presence of comorbidities could affect the general wellbeing of PLHIV, the study aims to investigate the impact of comorbidities on Health-Related Quality of Life (HRQoL), in an Italian cohort of 564 PLHIV
- This study could help to empower the HIV patient's clinical pathway, supporting the achievement of "the fourth 90" and enhancing the wellbeing factors

Methods

- An observational cross-sectional analysis of an Italian HIV+ patients' cohort study (May 2019 – January 2020) was conducted
- Demographics (age and gender) and clinical information (HIV risk factors, comorbidities, CD4 cell count and viral load) were collected
- PLHIV involved in the study completed self-reported questionnaires to investigate their HRQoL and general wellbeing with validated scales

EQ-5D^{1,3}

- Generic HRQoL tool to measure individual's mobility, self-care, usual activities, pain/discomfort, anxiety/depression with 3-level scale (1=no problem; 2=some problem; 3=extreme problem)
- The range of EQ-5D score is 0-1.00 and a higher EQ-5D score indicates a better HRQoL

ISS-QoL^{4,5}

- To measure the occurrence of HIV symptoms with an intensity scale (1=not at all; 2=little; 3=somewhat; 4=much; 5=very much)
- The range of ISS-QoL score is 1-5 and a higher ISS-QoL score indicates more severe HIV symptoms

CES-D⁶

- To measure the depression symptoms with a 4-level scale (1=never; 2=rarely; 3=sometimes; 4=often)
- The range of CES-D is 0-60 and a high CES-D score indicates greater depressive symptoms
- CES-D ≥16 indicates the individual is at risk of clinical depression

- T-test and one-way ANOVA were used to compare the HRQoL across different patient sub-groups. A hierarchical sequential linear regression model was used to explore the determinants of HRQoL.

- All analyses were conducted at a significance level of 0.05.

Results

The sample under assessment

- The 564 PLHIV assessed (Table 1) had a mean age of 48.5 years and 80.7% were male
- The median follow-up was 3 years
- Most PLHIV reported good adherence (91.8%), were virologically suppressed (96.3% with viral load ≤37 copies), and in good immunological status (76.2% with CD4 >500 cells/mm³)
- Almost half (47.5%, N=268) of the sample had comorbidities, in particular HCV co-infection (21.8%), and cardiovascular diseases (25.7%)

Differences of EQ-5D scores across patient sub-groups

- Patients (Figure 1) with good immunological status, successful virological suppression, adherence to ART regime, and presence of mild and moderate HIV symptoms, reported significantly better HRQoL
- Patients with a higher number of comorbidities reported significantly worse HRQoL, particularly in the presence of cardiovascular diseases, diabetes and neurocognitive impairment
- The results of the regression analysis (Table 2) indicated that being not adherent, with severe HIV symptoms, presence of HCV infection or neurocognitive impairment were independent predictors of lower HRQoL. These factors, taken all together, could explain the 30.8% of the QoL scale variability

Conclusions

These results showed the association between comorbidities, adherence and HRQoL in a real-world setting, highlighting the need for additional interventions to promote well-being in the PLHIV.

References

1. Brooks R. EuroQol: the current state of play. *Health Policy*. 1996;37: 53-72.
2. King P. The EuroQol instrument: an index of health-related quality of life. In: *Spitzer B, ed. Quality of Life and Pharmacoeconomics in Clinical Trials*. 2nd ed. Philadelphia, PA: Lippincott-Raven Publishers; 1996:191-201
3. Rabin R, de Charro F. EQ-5D: a measure of health status from the EuroQol Group. *Ann Med*. 2001;33:337-343.
4. Bucciardini R, Murrì R, Guarini M, et al. ISSQoL: A new questionnaire for evaluating the quality of life of people living with HIV in the HAART era. *Quality of Life Research* 2006;15: 377-390.
5. Bucciardini R, Pugliese K, Francesco D, et al. Validation of a self-reported HIV symptoms list: the ISS-HIV symptoms scale. *AIDS Res Ther*. 2016;13:18.
6. Radloff LS. The CES-D scale: a self-report depression scale for research in the general population. *Appl Psychol Meas*. 1977;1:385-401.

Acknowledgements and Disclosures

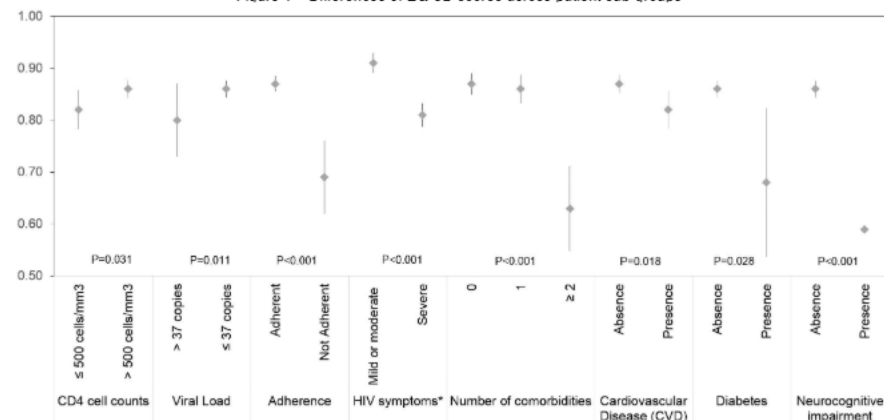
Funding for this study was provided by Gilead Sciences

Table 1 – Description of the sample under assessment

(N=564)	
Follow-up period, years [median; range]	3; 1 - 29
Age, years [mean ± SE; range]	48.5 ± 0.4; 21 - 85
Gender - male [%]	80.7%
Caucasian [%]	88.1%
Education - High school or higher [%]	60.2%
Heterosexual [%]	43.8%
Men who have sex with men [%]	41.7%
Years with HIV [mean ± SE]	12.9 ± 0.4
CD4 > 500 cells/mm ³ [%]	76.2%
VL ≤ 37 copies/ml [%]	96.3%
Presence of comorbidities [%]	47.5%
Presence of HCV coinfection [%]	21.8%
Presence of HBV coinfection [%]	5.1%
Presence of cardiovascular disease [%]	25.7%
Presence of diabetes [%]	2.7%
Presence of bone disease [%]	3.4%
Presence of neurocognitive impairment [%]	3.2%
Adherent [%]	91.8%
HRQoL measured by EQ-5D score [mean ± SE; range]	0.86 ± 0.01; 0.12 – 1.00
Depression measured by CES-D [mean ± SE; range]	16.07 ± 0.29; 0.00 – 48.00
HIV symptoms measured by ISS-QoL [mean ± SE; range]	1.32 ± 0.01; 1.00 – 2.72

SE: standard error

Figure 1 – Differences of EQ-5D scores across patient sub-groups



The difference of EQ-5D score across the sub-groups of depression, HCV coinfection, HBV coinfection, bone disease was not significant.

* Mild or moderate HIV symptoms defined as ISS-QoL Score <1.24 and severe HIV symptoms defined as ISS-QoL score ≥1.24

Table 2 – Effects of variables on EQ-5D score

	Effect on EQ-5D score	Significance
Not Adherent	-0.10	0.031
Severe HIV symptoms	-0.48	<0.001
Presence of HCV infection	-0.08	<0.001
Presence of neurocognitive impairment	-0.17	<0.001

Age, gender, ethnicity, transmission route, education level, CD4 cell counts, viral load and depression were also included the hierarchical sequential linear regression model, but not significant.