

GUIDELINES FOR THE ASSESSMENT AND MONITORING OF COMORBIDITIES IN PEOPLE LIVING WITH HUMAN IMMUNODEFICIENCY VIRUS (PLHIV): A SYSTEMATIC REVIEW

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Abstract number: P55/34

Introduction

Human immunodeficiency virus (HIV) is one of the world's most serious public health challenges; however, due to improvements in patient care, the life expectancy of people living with HIV (PLHIV) has increased in the last 2 decades¹

The causes of death in PLHIV have shifted from acquired immunodeficiency syndrome (AIDS) to non-AIDS-related causes^{2,3} and compared with the general population, PLHIV face a higher risk for the development of non-HIV-related comorbidities such as CVD, renal failure and bone fractures, particularly at older ages⁴

As well as their deleterious effects on life expectancy, comorbidities in PLHIV have a significant impact on the health-related quality of life (QoL) of individuals and their caregivers^{5,6}

Understanding, assessing, and monitoring comorbidities is important to improve long-term healthcare management of PLHIV; therefore, the development of clinical guidelines to aid healthcare decisions for PLHIV is of utmost value

Therefore, a systematic literature review (SLR) was conducted to identify available guidelines for clinical care of PLHIV and the strength of their recommendations

Methods

The electronic databases Medline, Medline Epub Ahead of Print (In-Process & Other Non-Indexed Citations), Embase, and EBM Reviews were interrogated on 1st February 2021. Additional searches of appropriate congress proceedings from the past 3 years, reference lists of included publications, and professional body websites were conducted to identify relevant evidence

Eligibility criteria included publications reporting recommendations or guidance for identification, assessment, and monitoring of outcomes/comorbidities in adult PLHIV, including (but not limited to): cardio-metabolic disease, QoL, menopause, frailty, pain, mental health, bone-related diseases/disorders, and renal, hepatic, respiratory, or sleep disorders. Documents published from 2010 onwards in the UK, EU-5, Australia, or Canada were included

Records were reviewed based on title and abstract in the first instance, and those included were reviewed based on the full publication. Quality assessment was conducted using the AGREE II tool⁷

Results

In total, 17 publications reporting on 16 sets of recommendations/guidelines met the inclusion criteria⁸⁻²⁶. Of the included publications, 11 related to 10 "formal" clinical guidelines^{8, 9, 12, 13, 17, 19, 20, 22, 23, 25, 26} and 6 publications included recommendations relating to comorbidities in PLHIV but were not considered "formal" clinical guidelines^{11, 14, 16, 18, 21, 24}. The overall quality of the guidelines was rated as high, with the majority rated ≥5 (on a scale of 1-7 of increasing quality)

An overview of the included publications is provided in *Table 1*

The total number of guideline documents making recommendations and the number reporting a frequency of assessment, the population for assessment and the tools to be administered by comorbidity are reported in *Table 2*

THIS PROJECT WAS ORGANISED AND FUNDED BY GILEAD SCIENCES

PRESENTED AT THE 18TH EUROPEAN AIDS CONFERENCE, OCTOBER 27-30, 2021



18th EUROPEAN AIDS CONFERENCE
October 27-30, 2021
Online & London, United Kingdom

Table 1: Summary of the available guidelines and recommendations for assessment of comorbidities in PLHIV

Identified publications	Data Source(s)	Evidence evaluation Employed	Guidelines reported for comorbidities?																	
			Bone disease	Cardio-metabolic disease	Frailty	Hepatic disorders	Hormonal issues	Mental health	Pain	QoL	Renal health	Respiratory illnesses	Sleep disorders							
Guideline documents																				
Angus (2019) / BHIVA (2018) ¹⁵	BHIVA guidelines for the routine investigation and monitoring of adult HIV 1 positive individuals/British HIV Association Standards of Care for People Living with HIV 2018	• SLR of clinical studies: Multiple databases, conference abstracts	GRADE system	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Arends (2011) ⁹	Treatment of acute hepatitis C virus infection in HIV+ patients: Dutch recommendations for management	• SLR; PubMed, conference abstracts	Bespoke grading scale				✓													
Bekker (2015) ¹²	IAPAC guidelines for optimizing the HIV care continuum for adults and adolescents	• SLR of clinical studies: Multiple databases • Expert opinion	GRADE system/ ACP methods							✓										
EACS (2020) ¹⁷	EACS Guidelines Version 10.1 October 2020	• Expert opinion	-	✓	✓		✓	✓	✓			✓	✓							
Hull (2014) ¹⁹	CIHR Canadian HIV trials network co-infection and concurrent diseases core: Updated Canadian guidelines for the treatment of hepatitis C infection in HIV-hepatitis C coinfecting adults	• Recent data • Expert opinion	Scale adapted from previous guidelines				✓													
Klein (2011) ²⁰	Management and treatment of hepatitis B virus in patients with HIV infection: A practical guide for healthcare professionals	• SLR of clinical studies: Multiple databases, conference abstract • Expert consensus	Bespoke grading scale				✓													
NHVNA(2018) ²²	Annual health review for people living with HIV – A good practice guide	• Expert opinion	-	✓	✓					✓						✓				
O'Brien (2014) ²³	Evidence-informed recommendations for rehabilitation with older adults living with HIV: a knowledge synthesis	• SLR of clinical studies: Multiple databases • Expert consensus	GRADE system	✓	✓					✓								✓		
WHO (2016) ²⁵	Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection – Chapter 5 – Clinical guidelines: managing common coinfections and comorbidities	• SLR of clinical studies: Multiple databases • Expert consensus	GRADE system		✓		✓			✓										
Wilkins (2013) ²⁶	British HIV Association guidelines for the management of hepatitis viruses in adults infected with HIV 2013	• SLR of clinical studies: Multiple databases, conference abstract • Expert consensus	GRADE system				✓													
Other recommendations																				
Baylis (2017) ¹¹	HIV services in England – Shaping the response to changing needs	• Literature review • Expert consensus • Case studies	-																	✓
Boffito (2020) ¹⁴	Clinical management of ageing people living with HIV in Europe: The view of the care providers	• Clinicians' evaluation of the relevance of assessments	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Duncan (2019) ¹⁶	Patient recommendations for developing care pathways for HIV-related metabolic comorbidities	• Patient opinion on a metabolic outpatient clinic	-		✓															
Greene (2013) ¹⁸	Management of human immunodeficiency virus infection in advanced age	• SLR of guidelines: Multiple databases	-	✓	✓		✓			✓										✓
Newsham (2013) ²¹	Evidence-Based Pain Guidelines in HIV Care	• SLR of clinical studies and guidelines: Multiple databases	-											✓						
Tseng (2012) ²⁴	Role of the Pharmacist in Caring for Patients with HIV/AIDS: Clinical Practice Guidelines	• SLR of guidelines: Multiple databases	-	✓	✓		✓			✓										✓

Abbreviations: AIDS, acquired immune deficiency syndrome; BHIVA, British HIV Association; CIHR, Canadian Institutes of Health; EACS, European AIDS Clinical Society; HIV, human immunodeficiency virus; IAPAC, International Association of Providers of AIDS Care; NHVNA, National HIV Nurses Association; PLHIV, people living with human immunodeficiency virus; QoL, quality of life; SLR, systematic literature review; WHO, World Health Organization.

Table 2: The number of guidelines making recommendations per comorbidity

Comorbidity	No. Publications reporting recommendations			
	Total	Frequency of Assessment	Population of Interest	Tool Administered
CVD	8	4	4	3
MI/Stroke	1	0	0	0
Heart Failure	1	0	0	0
Diabetes Mellitus	4	3	3	3
Metabolic disorders	3	2	2	2
Hypertension	2	2	2	0
Fracture risk and osteoporosis	7	5	5	5
Renal health	5	3	3	3
Chronic kidney disease	2	2	2	2
Depression and anxiety	9	3	8	0
Neurocognitive disorders	6	3	3	1
Disorders in hepatic functions	5	4	4	4
HBV or HCV	9	2	9	3
NAFLD/NASH	2	2	2	2
COPD	2	2	2	2
Pneumonia	0	0	0	0
Sleep disorders	0	0	0	0
Menopause	3	2	2	2
Frailty	1	1	1	0
Pain	1	1	1	0
QoL	1	0	0	0

Abbreviations: CVD, cardiovascular disease; COPD, chronic obstructive pulmonary disease; HBV, hepatitis b virus; HCV, hepatitis c virus; MI, myocardial infarction; NAFLD, non-alcoholic fatty liver disease; NASH, non alcoholic steatohepatitis

Summary and conclusions

The current study provides a comprehensive review of the published literature and identified 17 publications reporting on 16 sets of recommendations for the screening and assessment of comorbidities in PLHIV^{8, 9, 11-14, 16-26}

In general, there was consensus between guidelines in the recommendations reported for a particular comorbidity, although heterogeneity in assessment frequency, age of commencement and tool(s) administered was observed

The SLR highlighted data gaps for recommendations for certain comorbidities of interest. Although multiple guidelines on monitoring common comorbidities in PLHIV were available, there was a paucity of guidance related to assessment of respiratory comorbidities, menopause, frailty, pain, and sleep disorders. Recent evidence suggests that these conditions impact PLHIV to a greater degree compared with the general population, therefore when updating or developing future guidelines, authors should consider drafting evidence-based recommendations/consensus statements for these comorbidities

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Declaration of interest :

I have received funding for participation in Advisory Boards and for preparation of educational materials from Viiv Healthcare, Janssen-Cilag and Gilead Sciences