DOI: 10.24875/AIDSRev.25000022

Supplementary Table 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	P1
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	P1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	P2
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	P2
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	P3
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	P2
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supplement file
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	P3
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	P3
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	P3
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	P3
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	P3
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	P3
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	P3
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	P3
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	P3

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	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	NA
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	P3
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	P3
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	P3
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	P3
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	P3-4
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Supplement file
Study characteristics	17	Cite each included study and present its characteristics.	P5
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	P7
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	P6-7
Results of syntheses	20	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	P4-7
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	NA
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	NA
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	P7-10
	23b	Discuss any limitations of the evidence included in the review.	P10
	23c	Discuss any limitations of the review processes used.	P10
	23d	Discuss implications of the results for practice, policy, and future research.	P10
OTHER INFORMATION			
Registration and protocol	24	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	P3
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	P3
Competing interests	26	Declare any competing interests of review authors.	P10
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	P10

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Supplementary Table 2. List of excluded references

N	Author & Year	Complete Title	Journal	Statut	Notes
1	Belbacha I, 2024	The APOBEC3G gene rs2294367(C>G) variant is associated with HIV-1 infection in Moroccan subjects	Acta Tropical	EXCLUDED	No HIV Genotyping Data
2	Shipitsyna E, 2023	Mycoplasma genitalium prevalence, antimicrobial resistance-associated mutations, and coinfections with non-viral sexually transmitted infections in high-risk populations in Guatemala, Malta, Morocco, Peru and South Africa, 2019-2021	Intervirology	EXCLUDED	No HIV Genotyping Data
3	Sartelli M, 2017	The Global Alliance for Infections in Surgery: defining a model for antimicrobial stewardship-results from an international cross-sectional survey	World J Emerg Surg	EXCLUDED	Review article
4	Annan A, 2024	Proposal of pharmacophore model for HIV reverse transcriptase inhibitors: Combined mutational effect analysis, molecular dynamics, molecular docking and pharmacophore modeling study	Int J Immunopathol Pharmacol	EXCLUDED	No HIV Genotyping Data
5	Benaissa E, 2023	The occurrence of a fatal tuberculous pancreatic abscess simulating a pancreatic tumor in an immunocompromised patient	Germs	EXCLUDED	Case report
6	Hill G, 2022	The Origin, Epidemiology, and Phylodynamics of Human Immunodeficiency Virus Type 1 CRF47_BF	Front Microbiol	EXCLUDED	Not Morocco

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7	Murray CJ, 2014	Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013	Lancet	EXCLUDED	Review article
8	Miri L, 2014	Impact of immigration on HIV-1 molecular epidemiology in West Africa, Maghreb and Southern Europe	AIDS Rev	EXCLUDED	Review article
9	El Hamouchi A, 2017	Intraspecific genetic variability in a population of Moroccan Leishmania infantum revealed by PCR-RFLP of kDNA minicircles	Acta Trop	EXCLUDED	No HIV Genotyping Data
10	Baassi M, 2023	Towards designing of a potential new HIV-1 protease inhibitor using QSAR study in combination with Molecular docking and Molecular dynamics simulations	PLoS One	EXCLUDED	No HIV Genotyping Data
11	Trimbitas RD, 2014	The "hidden" epidemic: a snapshot of Moroccan intravenous drug users	Virology Journal	EXCLUDED	No HIV Genotyping Data
12	Bouqdayr M, 2023	MBL2 gene polymorphisms related to HIV-1 infection susceptibility and treatment response	Hum Immunol	EXCLUDED	No HIV Genotyping Data
13	Rebbani K, 2013	Co-infections with hepatitis B and C viruses in human immunodeficiency virus-infected patients in Morocco	Clin Microbiol Infect	EXCLUDED	No HIV Genotyping Data
14	Youssoufi F, 2017	The prevalence of human leukocyte antigen-B*57:01 allele in HIV-1-infected Moroccan subjects	Gene Reports	EXCLUDED	No HIV Genotyping Data
15	Laganà AS, 2015	The prevalence of sexually transmitted infections among migrant female patients in Italy	Int J Gynecol Obstet	EXCLUDED	No HIV Genotyping Data

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16	Belglaiaa E, 2015	Human papillomavirus genotypes among women with or without HIV infection: an epidemiological study of Moroccan women from the Souss area area Cancer centers in low- and middle-income countries	Infect Agents Cancer	EXCLUDED	No HIV Genotyping Data
17	Zaidane I, 2018	Assessment of toll-like receptor 7 and 8 gene polymorphisms with susceptibility to HIV-1 infection, AIDS development and response to antiretroviral therapy	Immunol Lett	EXCLUDED	No HIV Genotyping Data
18	Cacoub P, 2000	Epidemiologic and virologic study of hepatitis C virus infection in Morocco	Gastroenterol Clin Biol	EXCLUDED	No HIV Genotyping Data
19	Eddabra R, 2018	Rapid molecular assays for detection of tuberculosis	Pneumonia	EXCLUDED	Review article
20	Liman W, 2022	Hybrid Molecules as Potential Drugs for the Treatment of HIV: Design and Applications	Pharmaceuticals	EXCLUDED	Review article
21	Belmiloud Y, 2012	Theoretical Study of the Anti-Human Immuno-Deficiency Virus TIBO Molecule Confined Into Carbon Nanotubes	J Comput Theor Nanosci	EXCLUDED	No HIV Genotyping Data
22	Calmy, 2012	Mean CD4 cell count changes in patients failing a first-line antiretroviral therapy in resource-limited settings	BMC Infect Dis	EXCLUDED	No HIV Genotyping Data
23	Atipo-Ibara BI, 2015	Hepatitis B virus in Congo: prevalence and genetic diversity among blood donors in hyper endemic areas	J Afr Hepato-Gastroenterol	EXCLUDED	No HIV Genotyping Data

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24	Ouladlahsen A, 2018	Human papillomavirus among women living with human immunodeficiency virus in Morocco: A prospective cross-sectional study	J Infect Dev Ctries	EXCLUDED	No HIV Genotyping Data
25	Belglaiaa E, 2019	Cervical cancer: Current situation and management in Morocco	Bull Cancer	EXCLUDED	Review article
26	Farissi FZ, 2020	Analysis of the CCR2-64I genetic polymorphism distribution and its effect on the risk of HIV-1 infection and immunovirological outcomes in Moroccan ART-treated individuals	Gene Reports	EXCLUDED	No HIV Genotyping Data
27	El Bahi Y, 2024	Characteristics of tuberculosis in Marrakech (Morocco): Epidemiology and related factors	Clin Epidemiol Global Health	EXCLUDED	No HIV Genotyping Data
28	Diawara I, 2014	Staphylococcus aureus nasal carriage in hemodialysis centers of Fez, Morocco	Iran J Microbiol	EXCLUDED	No HIV Genotyping Data
29	Lo SW, 2020	A mosaic tetracycline resistance gene tet(S/M) detected in an MDR pneumococcal CC230 lineage that underwent capsular switching in South Africa	J Antimicrob Chemother	EXCLUDED	No HIV Genotyping Data
30	Messoussi A, 2014	Structural Elucidation of the DFG-Asp in and DFG-Asp out States of TAM Kinases and Insight into the Selectivity of Their Inhibitors	Molecules	EXCLUDED	No HIV Genotyping Data
31	Miantezila J, 2021	Overview of HIV treatment failure in Africa using the WHO Pharmacovigilance data	Trop Med Int Health	EXCLUDED	Review article
32	Canossi A, 2001	Identification of a novel allele variant of HLA-B*57 in a Caucasian Moroccan individual: B*57032	Eur J Immunogenet	EXCLUDED	Case report

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33	Sáez-López E, 2016	Characterization of Vaginal Escherichia coli Isolated from Pregnant Women in Two Different African Sites	PLoS One	EXCLUDED	No HIV Genotyping Data
34	Bocharov G, 2016	Mathematics of Pharmacokinetics and Pharmacodynamics: Diversity of Topics, Models and Methods	Math Model Nat Phenom	EXCLUDED	No HIV Genotyping Data
35	Chander S, 2017	Synthesis and study of anti-HIV-1 RT activity of 5-benzoyl-4-methyl-1,3,4,5-tetrahydro-2H-1,5-benzodiazepin-2-one derivatives	Bioorganic Chemistry	EXCLUDED	No HIV Genotyping Data
36	Fayssel N, 2015	Association of CD209L tandem repeats polymorphism with susceptibility to HIV-1 infection, disease progression, and treatment outcomes	Clin Microbiol Infect	EXCLUDED	No HIV Genotyping Data
37	Moundir A, 2024	Insights into the genetic theory of infectious diseases	Tunis Med	EXCLUDED	Review article
38	Alouane T, 2020	Genomic Diversity and Hotspot Mutations in 30,983 SARS-CoV-2 Genomes: Moving Toward a Universal Vaccine?	Pathogens	EXCLUDED	No HIV Genotyping Data
39	Calderón R, 2016	Tuberculosis and immigration in an area of southwest Madrid	Int J Tuberc Lung Dis	EXCLUDED	No HIV Genotyping Data
40	Suleiman M, 2023	Recent Progress in Synthesis, POM Analyses and SAR of Coumarin-Hybrids as Potential Anti-HIV Agents-A Mini Review	Pharmaceuticals	EXCLUDED	Review article
41	Baba H, 2021	Programmed cell death-1 single-nucleotide polymorphism rs10204525 and HIV-1 RNA viral load	Med Microbiol Immunol	EXCLUDED	No HIV Genotyping Data

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42	Etta EM, 2018	HHV-8 Seroprevalence and Genotype Distribution in Africa, 1998–2017: A Systematic Review	Viruses	EXCLUDED	Review article
43	Cherradi Y, 2017	RESPONSE TO PEGYLATED INTERFERON IN HEPATITIS B PATIENTS WITH HBE AG-NEGATIVE : LONG-TERM RESULTS AND PREDICTORS OF SUSTAINED-OFF VIROLOGICAL RESPONSE	J Med Surg Res	EXCLUDED	No HIV Genotyping Data
44	Khyatti M, 2014	Infectious diseases in North Africa and North African immigrants to Europe	Eur J Public Health	EXCLUDED	Review article
45	Smits HL, 2009	Prospects for the control of neglected tropical diseases by mass drug administration	Expert Rev Anti Infect Ther	EXCLUDED	Review article
46	Belbacha I, 2024	Prevalence of HBsAg among Moroccan HIV-1 infected patients and APOBEC3G variant frequencies in HIV-1/HBV co-infection	J Infect Dev Ctries	EXCLUDED	No HIV Genotyping Data
47	Farissi FZ, 2019	Investigation of CCR5-Δ32 (rs333) genetic polymorphism frequency and its relationship with HIV-1 susceptibility and disease progression: A Moroccan case-control study	Gene Reports	EXCLUDED	No HIV Genotyping Data
48	Ramli Y, 2014	Pharmacological Profile of Quinoxalinone	J Chemistry	EXCLUDED	No HIV Genotyping Data
49	Admou B, 2010	Primary immunodeficiencies: Diagnosis approach in emergent countries	Immuno-analyse & Biologie Specialisee	EXCLUDED	No HIV Genotyping Data

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50	Baba H, 2023	Association between MTHFR C677T Polymorphism and HIV Type 1 Infection in Morocco	Lab Med	EXCLUDED	No HIV Genotyping Data
51	Miri L, 2014	Stabilization of the integrase-DNA complex by Mg2+ ions and prediction of key residues for binding HIV-1 integrase inhibitors.	Proteins	EXCLUDED	No HIV Genotyping Data
52	Bachleda 2018	Reducing Susceptibility to Courtesy Stigma.	Health Commun	EXCLUDED	No HIV Genotyping Data
53	Zaidane I 2018	Interleukin 28B rs12979860 genotype and Human Immunodeficiency Virus type 1: Susceptibility, AIDS development and therapeutic outcome.	Hum Immunol	EXCLUDED	No HIV Genotyping Data
54	Kassogue Y 2022	Influence of CYP2B6 and CYP3A4 polymorphisms on the virologic and immunologic responses of patients treated with efavirenz-containing regimen.	Pharmacogenet Genomics	EXCLUDED	No HIV Genotyping Data
55	Ouladlahsen A 2020	Lack of Association between IFNL3 Polymorphism and Human Papillomavirus Infection and Their Progression in HIV-Infected Women Receiving Antiretroviral Treatment.	Pathobiology	EXCLUDED	No HIV Genotyping Data
56	Lahsen AO 2017	TP53 R72P Polymorphism and Susceptibility to Human Papillomavirus Infection Among Women With Human Immunodeficiency Virus in Morocco: A Case-control Study.	J Cancer Prev	EXCLUDED	No HIV Genotyping Data
57	Sartelli, M 2017	A Global Declaration on Appropriate Use of Antimicrobial Agents across the Surgical Pathway,"Members Global Alliance Infect Sur	Surg Infect (Larchmt)	EXCLUDED	Review article

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Supplementary Table 3. Newcastle-Ottawa Risk of bias assessment for cohort studies

Study	Selection (Max 4 Stars)	Comparability (Max 2 Stars)	Outcome/ Exposure (Max 3 Stars)	Total Stars (Max 9)	Risk of Bias	Quality Level
Bakhouch et al., 2009	4	2	3	9	Low risk of bias	High
El Annaz et al., 2011	3	2	3	8	Low risk of bias	High
El Annaz et al., 2012	4	2	3	9	Low risk of bias	High
Miri et al., 2012	4	1	2	7	Moderate risk of bias	Moderate
Alaoui et al., 2018	3	1	2	6	Moderate risk of bias	Moderate
Alaoui et al., 2019	4	2	3	9	Low risk of bias	High