Cureus

A systematic review of literature: Analysis of painful neuropathy prevalence and associated risk factors in ART-experienced HIV Patients

Open Access
Abstract
Published 09/06/2023

Antonio Corrente [1] , Caterina Pace [2] , Aniello Alfieri [3] , Sveva Di Franco [4] , Maria Beatrice Passavanti [5] , Pasquale Sansone [6] , Marco Fiore [7]

1. Department of Women, Child and General and Specialized Surgery, University of Campania "Luigi Vanvitelli", Napoli, ITA 2. Department of Anesthesiology, University "Vanvitelli" Napoli, Napoli, ITA 3. Department of Elective Surgery, Postoperative Intensive Care Unit and Hyperbaric Oxygen Therapy, A.O.R.N. Antonio Cardarelli, Naples, ITA 4. Department of Women, Child and General and Specialized Surgery,, University of Campania "Luigi Vanvitelli", Naples, ITA 5. Department of Women, Child and General and Specialized Surgery, University of Campania "Luigi Vanvitelli", Naples, ITA 6. Department of Anesthesiology, University "Vanvitelli" of Napoli, Napoli, ITA 7. Department of Women, Child and General and Specialized Surgery, Università degli Studi della Campania “Luigi Vanvitelli”, Naples, ITA

Corresponding author: Antonio Corrente, antonio.corrente.md@gmail.com

Categories: Pain Management
Keywords: hiv-patient, neuropathy

How to cite this abstract
Corrente A, Pace C, Alfieri A, et al. (September 06, 2023) A systematic review of literature: Analysis of painful neuropathy prevalence and associated risk factors in ART-experienced HIV Patients. Cureus 15(9): a1026

Abstract

Introduction

Painful neuropathy is a common pain condition among people infected with HIV, with a prevalence that in some studies is estimated to be one-third of the population affected by HIV;[1] the burden of the problem is dramatic considering that about 40 million people were living with HIV at the end of 2021.[2] Although HIV disease itself may cause painful neuropathy, comorbid conditions and medications, such as antiretroviral therapy (ART) has been associated with changes in the central and peripheral nervous systems. To investigate the prevalence and risk factors for painful neuropathy in ART-experienced patients we conducted a systematic review of the literature.

Methods

The protocol was prospectively registered in the International prospective register of systematic reviews (PROSPERO, CRD42020216369). The systematic review of the literature was performed according to the PRISMA guidelines.[3] The search strategy was performed using two databases: PubMed and Embase. Only studies published in English were included with a range from inception to 29 June 2023. A total of 925 studies were retrieved in PubMed and 1889 in Embase. A total of 2600 papers were screened after the elimination of duplicates; of these, only 20 were included in the qualitative synthesis.

Results

Ageing is a risk factor for peripheral neuropathy. There is an association between plasma HIV-1 RNA levels and the severity of pain with peripheral neuropathy seems more likely to be associated with advanced HIV infection and lower CD4+ cell counts. Current stavudine and didanosine use continue to increase peripheral neuropathy risks with zidovudine and zalcitabine associated with the highest rate of distal symmetrical neuropathy. The acetyl-carnitine deficiency found in these subjects may contribute to the neurotoxicity of neurotoxic nucleoside analogues. The use of statin and non-insulin glucose-lowering drugs may prevent progression from asymptomatic to symptomatic peripheral neuropathy. High-dose coenzyme Q aggravated pain in patients with peripheral neuropathy.

Conclusions

There is no high-certainty evidence that using ART is more likely to be associated with neuropathy, this is because the old drugs that were more neurotoxic are no longer used and the benefit of suppression of the viral load produces improvement of the general condition and the progression of the disease. There is evidence that using drugs that improve metabolism reduces neuropathy. Evidence for the comparative safety and tolerability of different types of ART use is limited.

References

1. Adem KS, Janakiraman B, Gebremeskel BF, Chala MB, Gelaw AY, Alemu K. Epidemiology and factors associated with peripheral neuropathy among HIV infected patients in Gondar, Ethiopia: A cross-sectional study. PLoS One. 2019 Jan 29;14(1):e0211354. doi: 10.1371/journal.pone.0211354
2. The Global Health Observatory. WHO https://www.who.int/data/gho/data/themes/hiv-aids
3. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, Shamseer L, Tetzlaff JM, Akl EA, Brennan SE, Chou R, Glanville J, Grimshaw JM, Hróbjartsson A, Lalu MM, Li T, Loder EW, Mayo-Wilson E, McDonald S, McGuinness LA, Stewart LA, Thomas J, Tricco AC, Welch VA, Whiting P, Moher D. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021 Mar 29;372:n71. doi: 10.1136/bmj.n71