

Inadequate pain relief in ambulatory patients with human immunodeficiency virus disease in Port Harcourt

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Objectives: To estimate the prevalence of pain in ambulatory patients with *human immunodeficiency virus*/acquired immune deficiency syndrome (HIV/AIDS) in Port Harcourt and to determine the type, site, severity, and adequacy of the treatment of pain in these patients.

Materials and methods: A cross-sectional survey was carried out at two antiretroviral therapy centers in Port Harcourt, Nigeria. A data sheet, the brief pain inventory, and the short form of the McGill pain questionnaire were used and 157 patients in various stages of HIV/AIDS participated in the study.

Results: About 83.7% (129/157) of the ambulatory patients with HIV/AIDS complained of pains. Of the patients who reported pain 61.24% (79/129) reported nociceptive pain while 38.76% (50/129) reported neuropathic pain. Chest pain was the most frequent site of pain followed by headache. About 82% (106/129) of those who complained of pain received some form of analgesic, but only 23.58% (25/106) of these obtained adequate pain relief. The majority of the participants had significant impairment of their quality of life due to the severity of their pain.

Conclusion: Pain associated with significant impairment of quality of life is common in ambulatory patients with HIV/AIDS in Port Harcourt. Whereas the majority of the patients used various pain relief methods, analgesia was inadequate.

Keywords: ambulatory HIV/AIDS patients, pain, inadequate relief

Introduction

Pain associated with disease from *human immunodeficiency virus*/acquired immune deficiency syndrome (HIV/AIDS) is common and multifactorial, with different causes possible at different stages of the disease.¹ Its prevalence has been estimated to be as high, if not higher than, in cancer patients.² HIV-related pain has been found to significantly impair the quality of life of the people with this condition.³ Adequate relief of pain in these patients is therefore a necessity. However, the pain of HIV disease is often underestimated by care givers and is undertreated.⁴

The aim of this study was to determine the prevalence, severity, and adequacy of the treatment of HIV-related pain of ambulatory patients in Port Harcourt.

Patients and methods

After obtaining institutional research ethics committee approval, a cross-sectional survey was conducted during which data was collected at the two government-owned tertiary health care centers offering free antiretroviral therapy (ART) in Port Harcourt. These health care centers were University of Port Harcourt Teaching Hospital (UPTH)

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and Braithwaite Memorial Specialist Hospital (BMSH). HIV-positive patients at both centers were being treated with a combination of zidovudine, lamivudine, and nevirapine. For those patients who were anemic, tenofovir was used to replace zidovudine in the drug combination, while for those patients who were also on antituberculosis drugs, efavirenz was used to replace nevirapine. Patients who complained of pain were offered acetaminophen or ibuprofen, but detailed assessment of the type or severity of pain was not done.

A data collection sheet, the brief pain inventory (BPI), and the short form of the McGill pain questionnaire⁵ were used to collect relevant data during the survey. The data sheet was used to record patients' demographic data, whether on ART or not, presence of pain, and performance status of the patient. The BPI has been used previously to measure pain in HIV/AIDS patients.^{3,4} The BPI asks patients to report if they experienced pain because of their disease during the previous 24 hours and to rate their pain (worst, least, and on the average) on a 0–10 numerical scale.

The patients were asked to rate their quality of life, which assessed their activity, mood, sleep, ability to walk and working ability, relationship with others, and enjoyment of life. The McGill pain questionnaire was used to collect data on the type of pain that the respondents had. An explanation was given to the participants about the purpose of the study and data was collected in each case following an interview. The interview was conducted in the English language by the same investigator, but effective translation into the mother tongue was done for those participants who did not understand the English language. Informed consent was obtained from each of the participants.

All consenting, ambulant, HIV-positive patients who presented for ART at both centers within a 1 week period were included once in the study. Inpatients with HIV disease were excluded. Patients who were already diagnosed with diabetic neuropathy, arthritis, gout, sciatica, or trauma-induced pain were excluded. Analysis of collected data was done manually with the use of an electronic calculator and simple percentages.

Results

A total of 157 patients participated in the study. Patients' ages ranged from 22 to 65 years, with the highest number of the patients in the 21 to 30 years age group. The sample consisted of 99 females and 58 males (Table 1).

Complaint of pain was made by 129 (83.7%) of all the participants. Among the patients who complained of pain, 92 (71.3%) were already on ART. The site of pain in these

Table 1 Frequency of HIV-related pain in various age groups

Age group (years)	Number with pain	Number without pain	Total
1–10	–	–	–
11–20	–	–	–
21–30	51	15	66
31–40	53	5	58
41–50	16	5	21
51–60	7	2	9
61–70	2	1	3
Total	129	28	157

Abbreviation: HIV, human immunodeficiency virus.

patients varied. The four most frequent sites of pain were: chest pain (38.0%), headache (25.6%), lower abdomen (16.3%), and upper abdomen (12.4%) (Table 2). About 6.9% of the patients described pain in two sites, 4.4% in three sites, and 7.0% had pain all over the body.

Using the BPI, least pain was reported by 22.0% of the patients as 0–3, by 69.2% as 4–6, and by 8.8% as 7–10 on the numerical scale. Average pain was reported by 13.1% of the patients as 0–3, by 75.9%, as 4–6 and 11.0%, as 7–10. Worst pain was reported by 4.1% as 0–3, 79.1% as 4–6, and 16.8% as 7–10 on a 0–10 numerical scale.

People who described their pain as aching, cramping, splitting, tender, or heavy according to the McGill short-form pain questionnaire were classified as having nociceptive pain while those who reported that pain was shooting, stabbing, sharp, or burning were placed in the neuropathic pain category. Based on the above categorization, 61.2% (79/129) of the patients had nociceptive pain while 38.8% (50/129) had neuropathic pain.

About 82.2% (106/129) of the patients received some analgesics (paracetamol, nonsteroidal anti-inflammatory drugs, and tegretol). Paracetamol was the analgesic drug most frequently used by the patients (Table 3). Some of the patients were using a combination of analgesic drugs and/or methods. None of the patients received any form of opioid.

Table 2 Frequency of HIV-related pain at various body sites

Site of pain	Number with pains	Percentage
Chest	49	38.0
Head	33	25.6
Lower abdomen	21	16.3
Upper abdomen	16	12.4
Generalized	9	7.0
Waist	8	6.2
Lower limb	7	5.4
Perineum	3	2.3
Back	1	0.8

Abbreviation: HIV, human immunodeficiency virus.

Table 3 Use of pain relief drugs/methods by patients

Pain relief drug/method	Frequency of use	Percentage
Paracetamol	77	59.7
Ibuprofen	42	32.6
Aspirin	26	20.2
Tegretol	16	12.4
Massage	16	12.4
Herbs	10	7.8
Patent medicines	4	3.1

Among the patients who received analgesics, only 23.6% (25/106) had pain relief of 70% or more. The rest of the patients did not have adequate pain relief.

The quality of life of the majority of the patients as assessed with the BPI was adversely affected. About 86.7% (113/129) of the patients reported that pain impaired their general activity, 89.9% (116/129) reported that their mood was adversely affected while 73.4% (94/128) reported that it affected their sleep. As high as 83.0% (107/127) reported that the pain impaired their working ability, thereby reducing productivity.

Discussion

The adult prevalence rate for HIV/AIDS in Nigeria by the year 2007 was 3.9 percent and nearly 2.9 million people were living with the virus.⁶ More recent findings suggest that while there is a decline in the prevalence rates of HIV infection in other areas of the country, it might still be in the epidemic phase in Rivers state.⁷ Port Harcourt is the capital city of Rivers state which is one of Nigeria's oil producing states. The prevalence rates of HIV/AIDS in the oil producing states are often higher than the national averages,⁸ due to the migrant nature of work in the oil industry.⁹ The prevalence of pain in ambulatory HIV patients in this study was found to be 83.7%. This was quite high considering that estimates of the prevalence of pain complaints by HIV infected patients from other studies range between 30% and 80%.¹⁰⁻¹²

About 79.0% (124/157) of the participants in the study were aged between 21–40 years, while 63% of them were female. Women and girls have been reported to make up 57% of people living with HIV/AIDS in sub-Saharan Africa.¹³ However, Erhabor et al,¹⁴ also in Port Harcourt, Nigeria found a 1:1 male to female ratio in HIV infections and also noted that the highest HIV infection rate was in the 29–38 year age group. The high prevalence of HIV/AIDS infection in this age bracket with its attendant morbidity such as pain of varying severity tends to adversely affect the economy of the nation, since the youths are the bedrock of the labor force.

About 71.3% of the HIV patients with pain were already on ART. ART has changed the landscape of HIV/AIDS-related care in the developed world and in patients fortunate enough to have access to it. This has led to a transformed perception of HIV from being a fatal disease to a manageable chronic illness.¹⁵ The prevalence of pain in HIV patients is known to increase as the disease progresses^{3,16} and some treatments for HIV/AIDS patients may contribute to the pains suffered by them.^{4,13,17}

The most frequent site of pain found in this study was chest pain (38.0%), followed by headache (25.6%). Headache was the most frequent site of pain in the study by Nair et al,³ followed by pain in the soles of the feet and low back. Whereas, in the multicenter study by Larue et al,⁴ it was digestive or mouth pain. About 20% (31/157) of the participants in this study had chest infections such as pulmonary tuberculosis, pneumonia, and bronchitis. This could have contributed to the high frequency of chest pain in our study population. The majority of the patients had pain of moderate severity, while a significant percentage (38.8%), of the participants had neuropathic pain. A frequent cause of pain at all stages of the disease is neuropathic pain associated with asymmetrical sensory polyneuropathy. These HIV-associated sensory neuropathies (HIV-SNs) are attributable to HIV itself and to some treatments.¹⁷ Some HIV treatments, in particular nucleoside reverse transcriptase inhibitors (NRTIs) such as stavudine, didanosine, and zalcitabine, are potentially neurotoxic.^{18,19} Although participants in this study were not being treated with any of these three drugs, the available evidence suggests that the prevalence of HIV-SN remains high among patients treated with a combination of ART drugs, even in countries where known neurotoxic antiretroviral drugs such as stavudine are no longer commonly used.²⁰ When HIV-SN is caused by HIV itself, it is termed distal sensory polyneuropathy (DSP). It is termed antiretroviral toxic neuropathy (ATN) when it results from toxicity to antiretroviral drugs. Incidence of pain in the limbs, which would be expected to be due to DSP, was low in this study. This was in contrast to some previous studies which found incidences of 14% to 20.9%,²¹ even in those ambulatory HIV patients with no ART exposure. However, the incidence of DSP has been associated with ethnicity.^{22,23} Also, early diagnosis and early initiation of ART may decrease the risk of developing DSP.^{21,22} Although provision of free ART, as in this case, could enhance early diagnosis and initiation of ART, our study could not determine the interval of time between onset of illness and commencement of ART for the participants. Quality of life (general activity, mood, sleep, and ability to work) was severely impaired in the majority

of the participants in the study. Impairment of the quality of life of the patients has been known to adversely affect their productivity.³

The majority of the patients (82.0%) received some analgesic drugs, although none of them received any form of opioid. About 20.0% of the patients resorted to alternative methods of pain relief such as massage and herbal preparations, while some used “various combinations” of medicines from patent medicine stores. However, the majority of the participants did not obtain adequate pain relief from the various analgesic methods they used. Patient-related barriers to pain management have been noted,²⁴ which were significantly associated with undertreatment of pain in HIV/AIDS patients. These include concerns about the addiction potential of some pain medications, physical discomfort associated with opioid administration (eg, injections), or side effects (eg, nausea, constipation). Patients need to be educated on the proper use of pain medications and helped to understand which therapeutic options could be beneficial to them. Whereas the anticonvulsants lamotrigine^{25,26} and gabapentin^{27,28} have been shown in placebo-controlled trials to be effective and beneficial for relief of HIV-associated painful neuropathies, carbamazepine (tegretol), which was the only anticonvulsant used by many of the participants in this study, should be avoided as it might cause adverse drug interactions with protease inhibitors and non-nucleotide reverse transcriptase inhibitors (NNRTIs) such as nevirapine and tenofovir, which some of the patients were also using.²⁹

Palliative care and pain treatment have often been neglected in national and international responses to HIV/AIDS despite significant prevalence of pain and other symptoms in people living with HIV/AIDS.^{4,30} The assessment, evaluation, and treatment of pain should be an integral part of any comprehensive care for patients with HIV/AIDS.³¹ It is important for HIV clinicians to develop the knowledge and skills to deliver effective pain control and palliative care together with ART. Palliative care training for physicians caring for HIV/AIDS patients can improve the quality of pain relief provided for the patients.³

Conclusion

Pain, severe enough to significantly impair quality of life, is common in ambulatory patients with HIV/AIDS in Port Harcourt. Whereas the majority of the patients have been using various methods of pain relief, analgesia has been grossly inadequate. Mandatory training in palliative care medicine can enable the physicians caring for these patients to improve the quality of pain relief provided for them.

Disclosure

The authors report no conflicts of interest in this work.

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