Morphine use in the last six days of life of patients with HIV/AIDS at the inpatient unit of a South African hospice implementing the ICHC model

Els R, MBChB, MPhil Pall Med
Radiation-oncology Department, Port Elizabeth Provincial Hospital, South Africa
Power HM, BSc (Hons), MBBCh, MD, DCH
Sowerby Centre for Health Informatics, University of Newcastle upon Tyne, UK

Correspondence: Dr R Els, Email: reneee@global.co.za

Abstract

Background

Seventy-five per cent of the world's HIV/AIDS population resides in Sub-Saharan Africa. South Africa, along with the rest of Sub-Saharan Africa, is experiencing an increasing disease and palliative care burden as a result of the HIV/AIDS pandemic. At present there is no cure for AIDS and access to antiretroviral treatment is limited.

HIV/AIDS is the largest single cause of death in South Africa, accounting for 30% of deaths in 2000. An estimated 20 000 of the approximately 5 350 000 infected South Africans receive antiretroviral treatment.

To cope with the rising need for AIDS-related health services, a comprehensive, integrated approach to health care is advocated, with a shift in focus from hospital care to home-based care. The Department of Health supports a community home-based care (ICHC) model as one of five models of care. It is based on similar principles to palliative care and was piloted at seven hospices in South Africa. This study was conducted in the inpatient unit (IPU) of a hospice participating in the ICHC pilot project.

This model requires that the hospice provide the overall management of the home-based care programme, as well as various forms of support. Care provision is shared between professional nurses and non-professional community-based caregivers, who are trained by Hospice. For challenging symptoms, respite or terminal care, the hospice has a six-bed IPU to which patients can be admitted for short periods. The AIDS patients admitted to the IPU of the study hospice were all cared for under the ICHC model.

Method

This study was a retrospective case-control study conducted in a hospice in South Africa. Cases were consecutive deaths related to AIDS. Controls were cancer patients matched for socioeconomic status.

Results

Five days before their death, morphine for pain control was given to three of the 29 (10%) AIDS patients and to 20 of 29 (69%) cancer patients ($p < 0.001$). On the day of their death, morphine for pain control was given to 17 (59%) of the AIDS patients and 25 (86%) of the cancer patients ($p < 0.05$). Eleven (65%) of the 17 AIDS patients who were given morphine died within 48 hours of commencing with the treatment. The morphine starting dosages were within the lower therapeutic range.

Conclusions

The palliative care of dying cancer patients met internationally recognised standards. The results suggest that the pain of AIDS patients admitted to the IPU was under treated in terms of both dosage and duration. It is unlikely that the use of opiates or sedatives hastened death in dying AIDS (or cancer) patients. All the AIDS patients admitted to the IPU were cared for under the integrated community home-based care (ICHC) model. This raises the following questions: Is the ICHC model as implemented by this hospice achieving the symptom relief intended? And, is this typical of palliative care for AIDS patients in South Africa?

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Table I: WHO definition of palliative care (updated 2002)[4]

"Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual.

"Palliative care for adults:

- provides relief from pain and other distressing symptoms
- affirms life and regards dying as a normal process
- intends neither to hasten or postpone death
- integrates the psychological and spiritual aspects of patient care
- offers a support system to help patients live as actively as possible until death
- offers a support system to help the family cope during the patient's illness and in their own bereavement
- uses a team approach to address the needs of patients and their families, including bereavement counseling, if indicated
- will enhance quality of life, and may also positively influence the course of an illness
- is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and manage distressing clinical complications"

Table II: Patient characteristics

	Death related to:	
	AIDS	Cancer
Number	29	29
Age: mean (minimum – maximum)	35 (21–60)	56 (27–89)
Sex ratio, F:M	14:15	19:10
Health care funding: State/Private	29/0	29/0
Ethnic group: Black/Coloured/White	20/3/6	20/3/6

Objectives

The objectives of this study were to compare pain control practices for terminally ill patients with HIV and patients with cancer. More specifically, the aim was to discover whether some AIDS patients die without adequate analgesia.

Setting

The study was conducted in the six-bed inpatient unit of a hospice in South Africa.

Methods

The local hospice gave permission for their records of deceased patients to be accessed and the Ethics Committee of the University of Cape Town consented to the study.

This was a retrospective case-control study. Cases were consecutive deaths related to AIDS from August 1998 to December 2001. Controls were cancer patients matched for socio-economic circumstances. There were 29 people in each group.

Thirty-nine patients with AIDS died in the in-patient unit during the study period. Ten people were excluded from further analysis: seven had both AIDS and cancer, one died from causes unrelated to AIDS (gunshot), and records were unavailable for two. The number of people with AIDS that were admitted to the IPU and subsequently died there was low. This limited the size of the study. Although the sample size is small, it is comprehensive. All eligible HIV-positive patients have been included. For each of the 29 AIDS cases, a cancer control was selected by identifying the first subsequent death of an HIV-negative patient of the same race and medical insurance status (as a proxy for socio-economic status).

AIDS patients differ from cancer patients regarding pain syndromes. The medical management of different pain syndromes includes numerous adjuvant drugs. Due to the small number of patients in the study and the complexity of correlating medical pain practices with different pain syndromes, it was decided that there would be selective focus on opioid administration as a comparative measure of control of severe pain in the study population. Comparisons were made between AIDS and cancer patients in the same IPU, as well as with similar studies elsewhere in the world.

Prescription charts were reviewed and summaries were made of opioid administration for the last six days of life. Doses of opioids were converted into equivalent doses of oral morphine.

Tests for statistically significant differences were calculated using standard functions provided by Microsoft Excel 2002 (Microsoft Corporation, USA) for the chi square and t tests, and by Stata 7.0 (Stata Corporation, 4905 Lakeway Drive, College Station, Texas 77845, USA) for the Fisher exact test.

Findings

AIDS patients that died in the IPU expressed as a percentage of all admissions to the hospice home-care community varied between 3% and 5.8%, which explains the small sample of this study. During the study, people with AIDS accounted for between 22% and 30% of the population cared for by the concerned hospice, From 1998 to 2002, the proportion of patients with AIDS rose from 12% to 49%.

Use of morphine

Five days before their day of death, 3 of the 29 AIDS patients (10%) received morphine for pain control, compared with 20 of 29 cancer patients (69%) ($p < 0.001$). On the day of their death, morphine for pain control was given to 17 AIDS patients

Table III: Administration of morphine

Morphine administration:	5 days before death (D-5)		Day of death (D)	
	AIDS	Cancer	AIDS	Cancer
Morphine	3 (10%)	20 (69%)	17 (59%)	25 (86%)
No morphine	26 (90%)	9 (31%)	12 (41%)	4 (14%)
Fisher exact test	p< 0.001		p= 0.038	
Average dose of morphine per 24 hours	39	120	120	151

(59%) and 25 cancer patients (86%) (p = 0.038).

Eleven of the 17 AIDS patients using morphine at their time of death (65%) were started on it during their last 48 hours. The average daily dosages of morphine commenced during the last 48 hours of life were 24 mg and 32 mg per 24 hours for the AIDS and cancer patients respectively. No patient was started on more than 50 mg morphine per day, which is within the recommended starting dose range for opioid-naïve patients.[5,6]

Discussion

Reports in the literature have documented that pain is widely under recognised and under treated in AIDS patients, whether they be ambulatory, hospitalised or terminal.[7,8,9] The adequacy of pain management for people with AIDS in South Africa has not been extensively researched or published, although it has been asserted that these people are dying in pain.[10]

There are few studies on the prevalence of pain as a symptom in the last week of life in people with AIDS.[7,11] Reports of the prevalence of pain in the general AIDS population (ambulatory and hospital) vary between 28% to over 93%.[6,7,8,9,11,12,13,14,15,16,17] In the Soweto Hospice, the reported prevalence of pain was 98% in stage 4 AIDS patients.[18]

The use of morphine in 30 internationally regarded palliative care services is reported to be between 70 and 89% for cancer patients near the end of life[12,19,20,21] and up to 82% for AIDS patients near death.[7,11] Kimball and McCormick reported pain prevalence of 93% in AIDS patients during the last two weeks of life in a hospice setting in Seattle, and 88% of all the AIDS patients received an opioid.[7] In Rome, Fantoni *et al.* reported a 68% prevalence of pain during the last week of life of AIDS patients.[11] Opioid analgesics were used in 29% of patients in the week before death. The AIDS population of America consists predominantly of homosexuals and intravenous drug users, for whom intravenous drug abuse is a recognised barrier to administering opioids for pain.[22]

Breitbart and colleagues found that, in ambulatory AIDS patients, the intensity of pain experienced by patients with HIV disease increased significantly as the disease progressed.[12] They also examined the adequacy of pain treatment. Only 15% of their sample received adequate analgesic therapy based

Figure 1: AIDS patients on morphine (n = 17 of 29)

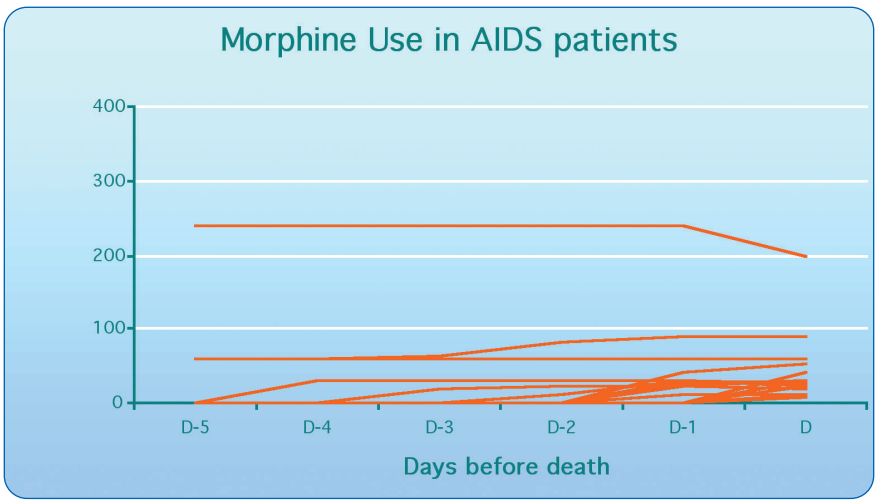
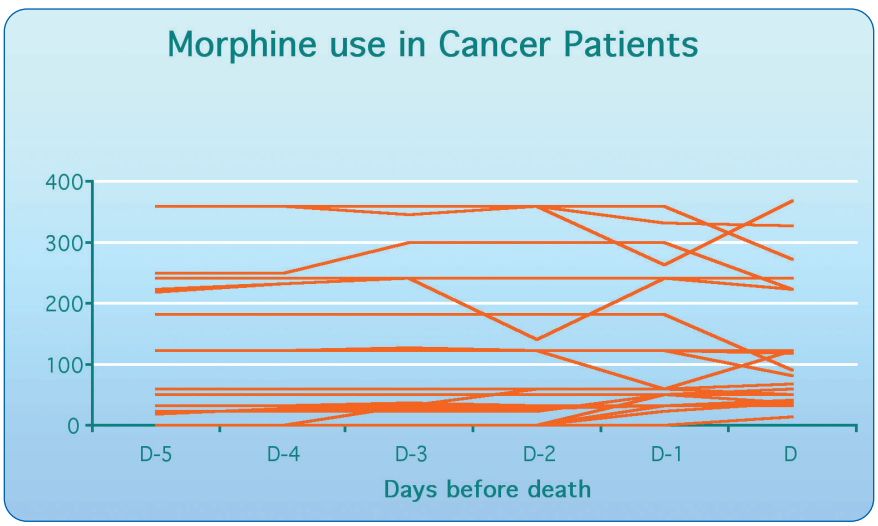


Figure 2: Cancer patients on morphine (n = 25 of 29)



on the Pain Management Index (PMI). This degree of under-medication of pain in AIDS (85%) far exceeds the 40% under-medication of pain (using the PMI) in cancer populations reported in other studies.[23]

When AIDS patients were admitted to the inpatient unit, 10% were using morphine for pain control. In contrast, 69% of cancer patients were using morphine when they were admitted to the inpatient unit, and this proportion is similar to that in internationally regarded palliative care practices.[7,11,19,20,21]

Although 65% of the AIDS patients in this study died within 48 hours of starting morphine, all doses were well within guideline ranges, and no patients had recorded symptoms that would suggest opioid toxicity. The relationship between commencement of treatment and time of death is probably due to delayed commencement of pain relief.

Barriers to managing pain in terminally ill AIDS patients are well described in the literature. When under-treatment of pain is present, it should be recognised and an attempt should be made to identify and overcome the barriers applicable to the situation.

Recommendations

This study raises questions about practices of pain control, including pain control in the community, if the goal is to achieve standards of care set out by the WHO for palliative care. Although the study subjects were IPU patients, all the HIV-positive patients admitted to the IPU were cared for under the ICHC model piloted and implemented by the local hospice.

Regular studies should audit the prevalence and management of pain in AIDS patients in IPUs, as well as in those who are cared for in the community. Similar studies should be done on palliative care practices in other South African hospices. These studies should allow general conclusions to be drawn and recommendations to be made.

Conclusion

In a country with limited resources, we find ourselves faced with an epidemic that is causing enormous suffering.[25,26,27] The numbers of hospital beds and nursing staff have not increased to meet the rising number of patients with opportunistic infections associated with HIV-positive patients. This produces an increasing burden on our health care services as well as our communities.

Unrelieved physical pain equates to poor palliative care practices. It contributes to the burden of suffering in an already overburdened section of our population. However, palliative care, within the defined norms for dying AIDS patients, is within the capacity of South African hospices, which are well known for their excellence. Successful training and implementation rely on reaching the defined standards of care in practice. *This* is where we need to ensure that the burden is being carried. We need to do this care-fully.

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