

An Audit of Morphine Prescribing in a Hospice

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ABSTRACT

Aim of study: This audit was designed to investigate the morphine prescribing pattern in a hospice.

Method: A review of 358 medical charts of all existing patients was conducted with a set of questionnaire. The prevailing practice was compared with an established standard guideline.

Result: One-third (35%) of patients were receiving morphine. Several deficiencies in morphine prescribing were identified. These include omission of breakthrough morphine dosing, use of morphine as p.r.n. (when necessary) alone for chronic pain, absence of review after prescribing treatment, and lack of double dosing at night. Prophylactic laxative and anti-emetics were often not co-prescribed.

Conclusion: Despite much of what is known about the pharmacology and therapeutic use of morphine, there is much variation and even inappropriate prescription in a palliative care institution. Implementation of recommended European guidelines and education may improve morphine prescribing habits. However, such guidelines may have to be validated in future studies to see if they need to be revised to suit our local population.

Keywords: pain, symptom, opioid, guidelines

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INTRODUCTION

Morphine is an opioid analgesic of choice for treatment of cancer patients with severe pain⁽¹⁾. However, many doctors are not fully conversant with the use of morphine for management of pain and may even harbour misconceptions and biases. As symptom control is a clear goal of good hospice care, pain management becomes an explicit part of quality assurance procedure. A standard guideline will be helpful to ensure proper use and good treatment outcome with decreased adverse sequelae. The aim of this audit is to understand the current morphine prescribing patterns in our hospice and thereafter implement changes to improve the practice.

Table 1. Standard guidelines for prescription of morphine^(2,3).

1. Start with oral morphine mixture. There is no fixed dose of morphine. The dose may range from 2.5mg 4 hourly to more than 200mg 4 hourly. Majority of the patients will not need more than 30mg 4 hourly. Start with a low dose and work up using immediate release preparation for dose titration.
2. A common sequence of dose increment is 2.5/5/10/15/30/40/60/80/100/120/150/200mg.
3. Prescribe a regular 4 hourly dose.
4. Prescribe the same dose for p.r.n. use to be repeated as often as necessary for breakthrough pain.
5. A double dose can be prescribed at night to save waking the patient at 3 to 4 a.m. (except for doses more than 300mg 4 hourly).
6. Review after 24 to 48 hours and adjust regular dose according to breakthrough requirements.
7. Once pain control is adequate, convert to morphine slow release tablet to be given 12 hourly.
8. When neither the oral nor rectal routes are available, use morphine sulphate via subcutaneous route (one third of oral morphine dose).
9. Always prescribe laxatives to be taken concurrently with morphine.
10. Prescribe antiemetics on p.r.n. basis.

MATERIAL AND METHOD

The method for this study was modelled after Turner who observed the prescribing pattern on a single day⁽²⁾. A review of all existing patients in our hospice was carried out on a selected day. There were 319 home care patients and 39 patients in the in-patient hospice. A standard questionnaire was given for each medication chart and completed by doctors and staff nurses in charge of their respective patients.

The answers were then analysed against a standard guideline adapted from Palliative Care Unit in Royal Marsden Hospital, London⁽²⁾ and the Expert Working Group of the European Association for Palliative Care⁽³⁾. Modifications of the guidelines were made to suit local population. (Table I)

RESULTS

Morphine was prescribed for 127 out of 358 patients. Among those patients, 66 (52%) were on regular dosing, and 18 (14%) took morphine on an as needed (p.r.n.)

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basis. Forty-three (34%) were given both regular and p.r.n. morphine. Double dosing with morphine at night was only prescribed for three (2%) patients.

The main route of prescription was oral. Six (5%) patients required subcutaneous morphine infusion. Rectal suppository was not used. Of the 121 patients on oral morphine, 105 (87%) were given morphine mixture and 32 (26%) took slow release morphine tablets.

The duration of morphine use was noted as follows: 46 (36%) patients on morphine for less than a month, 38 (30%) for one to three months, and 33 (26%) had been on morphine for more than three months. From the record, the duration of use could not be determined in 10 (8%) patients. Out of the 72 patients who were given morphine mixture on a regular schedule, 29 (40.3%) have been taking morphine mixture for less than one month, 18 (25%) for one to three months, 19 (26.4%) for more than three months. The duration of use was not documented in six (8.3%) patients whose morphine was started before our care. (Table II)

Sixty-two patients were started on morphine by doctors and nurses in our Hospice. Only 33 (53%) were reviewed within the next 48 hours of prescription. Fourteen (23%) patients were assessed after three days. Another 15 (24%) patients had no record of review and continued with the same dose. Good compliance to morphine was only documented in 72 (56%) patients.

The indications for morphine are shown in Table III. Vast majority of the patients were given morphine for pain control. The nature and site of the pain were usually (57%) not specified. Only one patient was given morphine solely for control of breathlessness. A few patients had multiple pain.

Co-analgesics were prescribed to 79 (62%) patients, the commonest (48%) of which is non-steroidal anti-inflammatory drugs (NSAIDS) (Table IV). Ninety-eight (77%) patients had concomitant laxatives. Antiemetics were given to 28 (22%) patients when morphine was started.

DISCUSSION

In the last decade, several organisations have developed clear guidelines relating to appropriate use of opioids and standards for quality improvement in cancer pain relief^(4,5). Despite these strides in supportive care and the availability of effective systemic analgesics, many patients continued to endure poorly relieved pain⁽⁶⁾. It is therefore not surprising when 81% of health care professionals in a survey agreed that the most common form of narcotic abuse is undertreatment of pain⁽⁷⁾. The present audit demonstrated that even in a hospice unit, there is significant aberration from standard guidelines.

Table 11. Duration of use of morphine in patients on regular morphine mixture.

Duration of morphine use	Number of patients	Percentage
<1 month	29	40.3
1-3 months	18	25
>3 months	19	26.4
Unknown	6	8.3
Total	72	100

Table III. Indications of morphine use.

Indications	Number of patients	Percentage
Visceral pain	41	32
Bone pain	13	10
Neuropathic pain	5	4
Dyspnoea	1	1
Unspecified pain	72	57

Table IV. Other analgesia used concomitantly with morphine.

Analgesic prescribed	Number of patients	Percentage
NSAIDS	41	48
Paracetamol	16	19
Panadeine	4	5
Amitriptyline	13	15
Codeine phosphate	3	3
Beserol	1	1
Durogesic (Fentanyl)	2	2
Temgesic (Buprenorphine)	1	1
Buscopan (Hyoscine-Butylbromide)	2	2
Tramal (Tramadol)	1	1
Carbamazepine	1	1
Traditional Chinese Medicine	1	1
Total	86	100

More than one-third of our patients required morphine for pain control. Chronic pain that is well controlled with regular doses sometimes breaks through or is exacerbated by incidental events in the patient's life. Patients should be given rescue doses equivalent to what is regularly scheduled for such breakthrough or incidental pain^(2,3). More than two-thirds of our patients were not instructed to take breakthrough morphine as adjunct to their regular doses. On the other hand, many were given morphine only when the need arises (p.r.n.) instead of round-the-clock. Studies have shown that maintaining an effective concentration of active metabolites morphine-6-glucuronide at the receptor sites is necessary for its analgesic effect. Intermittent dosing yields negligible amount of morphine-6-glucuronide⁽⁸⁾, leaving abundant unconjugated morphine to cross the blood-brain-barrier, thus increasing central nervous system adverse effect. As palliative care not only aims for symptom control but also to prevent symptoms, this form of ineffective prescribing which allows pain to recur should be discouraged.

The majority of our patients were on oral morphine (95%). This is in keeping with the recommendation

that whenever possible, morphine should be given by mouth⁽³⁾. Although considerable interpersonal variation exists, regular morphine mixture should be converted to slow release preparation as soon as the pain is controlled without the need for frequent breakthrough doses. The present audit showed that a significant proportion of patients were still managing with frequent four to six hourly regular morphine mixture even after three months.

This could be partly due to lack of symptom review for optimum titration of analgesia. Among the 62 patients whose morphine was started during our care, 14 (22%) were not reviewed within the next 48 hours. There was no record of review at all in a further quarter of patients. Some staff attributed that to poor documentation, which was a real problem noted in this audit. The nature and type of pain were frequently not recorded, even when this was the standard practice in our centre. This rendered a proper assessment and a meaningful conclusion impossible. One would never be able to tell if morphine was used as the sole analgesic for the control of bone pain or neuropathic pain, which are classically opioid-resistant⁽⁹⁾. We recognise that the frequency of review may be limited by resources in home care patients but this may be overcome by telephone reviews even when a physical visit is not possible.

In the home care setting, patients are mainly reviewed by nurses who are not able to make changes in drug prescriptions. We recommend that patients on stable doses of short acting morphine be brought to the attention of doctor so that prescriptions can be rationalised.

The practice of double dosing of morphine at night has been recommended to avoid waking patients in the early morning and disturbing sleep with no increase in mortality during the night⁽¹⁰⁾. The small number of patients who received double-dose at bedtime may, in some cases, reflect either ignorance of such practice or fear of excessive sedation.

Patients receiving morphine may experience opioid-induced nausea at least in the initial period. Constipation is almost universal. Despite this, a high proportion of patients were not given anti-emetics when morphine was started, and a quarter of them did not have laxatives.

The side effects could have explained why many patients were not taking the morphine as prescribed. While adverse drug effects may explain the non-compliance to morphine, the fears of narcotics stemming from deeply held cultural beliefs (opiophobia)⁽¹¹⁾ could also contribute to the poor discipline. The phobias and biases include not only intolerance of adverse effects like respiratory depression, sedation, constipation, nausea etc but also the fear of addiction, and its associations with the evils of drug abuse. Refusal of good symptom control deserves careful exploration. With good empathic communication, irrational and unproven beliefs can be dispelled effectively.

In summary, this audit showed us that there is room for improvement in the use of morphine if better prescribing habits can be adopted⁽¹²⁾. Adherence to standards and guidelines should result in more efficient relief of pain, and reduction of family distress. Properly implemented, these recommendations will curtail needless variations and confusion. However, review audit must be carried out from time to time to determine whether such guideline has truly achieved its goal of improving patient outcome.

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