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Cancer Pain and its Management: A Survey on Interns' Knowledge, Attitudes and Barriers

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Abstract

Objective: We conducted this study to evaluate the knowledge and attitudes of interns regarding cancer pain and its management.

Materials and methods: This study included 116 interns recently graduated from the Faculty of Medicine, Prince of Songkla University. They provided their demographic characteristics and completed a questionnaire in regards to their knowledge and attitudes about cancer pain and its management.

Results: Data were obtained from 116 interns. The majority of interns did not hesitate to provide maximal doses of analgesics for patients in severe pain when the prognosis was poor. A significant number favored to prescribe pethidine more than morphine and thought that pethidine caused less harmful effects in long-term use. Most respondents agreed or strongly agreed that they would prescribe opioids carefully to avoid tolerance and addiction. They considered that barriers to effective pain management were inadequate knowledge, inadequate pain assessment and lack of time to attend patients' requirements.

Conclusion: The interns demonstrated positive attitudes toward cancer pain and its management, principally on opioid usage. However, a significant number of them had misconceptions in terms of knowledge for prescribing opioids. To provide better cancer pain management, attention must be given to improving the curriculum and integrating it into clinical practice.

Keywords: attitudes, cancer pain, cancer pain management knowledge, morphine, pethidine, opioids

Palliative Care: Research and Treatment 2010:4 11–17

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Introduction

Pain is a very common symptom in cancer patients. However, it has been found that cancer pain management is suboptimal at rates as high as 50%–75%.¹ Inadequately controlled cancer pain leads to many adverse consequences including impaired quality of life. Barriers to adequate cancer pain management include barriers from doctors and nurses,^{1–4} patients,⁵ patients' carers and the health care system.¹ Barriers related to doctors are determined as being the most important item.² Under these circumstances, doctors' knowledge and attitudes are significant and powerfully affect cancer pain management.⁶

Thailand is a developing country in South East Asia where the proportion of health care providers within the population is very low. Thailand has only a few pain clinics and palliative care physicians available. The great majority of cancer patients who have pain are treated by their physicians in charge. Only a minority of cancer pain patients are cared for by a pain clinic or a palliative care physician. Opioids have been available in Thailand for a long time and most hospitals have parenteral opioids. Even though the number of hospitals having oral preparations of opioids is increasing, not many hospitals in Thailand readily have this facility.

At the site where this study was conducted (Prince of Songkla University), cancer pain management and palliative care medicine have been officially included in a medical curriculum for almost a decade.

Interns usually provide care to patients both inside and outside medical schools. Therefore, their attitudes and knowledge regarding cancer pain management have a lot of impact on quality of medical care. This study aimed to evaluate the attitudes and knowledge of the interns who graduated from the Faculty of Medicine, Prince of Songkla University, which is the principal medical school of the southern part of Thailand.

Materials and Methods

This was a descriptive study on the interns of the Faculty of Medicine, Prince of Songkla University, who returned to the medical school for their graduation ceremony. These interns had been working for approximately five months prior to graduation. The study protocol was approved by the faculty's ethics committee. Each participating intern signed

an informed consent form before completing a questionnaire. They filled out the questionnaire in person. The questionnaire was adapted from previous studies performed by Jeon et al¹ and Ger et al.² Apart from questions related to the demographic characteristics of the interns, the questionnaire consisted of four sections:

- Part 1: three questions regarding attitudes of using opioids to control cancer pain,
- Part 2: eight questions regarding knowledge of opioid prescription,
- Part 3: five questions regarding attitudes toward opioid prescription,
- Part 4: nine questions on barriers to cancer pain management.

The data in this study was recorded with Epidata version 3.0 and analyzed using Program R version 2.8.0.

Results

Out of 125 interns, 116 answered the questionnaire (a response rate of 92.8%). There were slightly more females (51.8%) than males (48.2%), and the respondents were aged 23–28 years (average: 24.6 years old). The majority of them were Buddhist (96.4%). The mean value of their grade point average was 3.3 (range: 2.5–3.8).

Interns' attitudes regarding optimal usage of opioids to control cancer pain

Half of the interns did not wait until the end of life (less than six months' of prognosis) to provide maximal doses of analgesics for patients with severe pain. More than 80% of them did not think that patients required too much analgesic. Approximately 63% thought that increased amounts of analgesics indicated that patients had increased pain. However, they thought that factors related to increased analgesic requirements included increased depression, increased anxiety, tolerance and psychological addiction (Table 1).

Knowledge of interns regarding opioid prescription

About one-third of the interns preferred to prescribe pethidine rather than morphine when a potent opioid was needed and thought that pethidine caused less

**Table 1.** Interns' attitudes regarding optimal usage of opioids to control cancer pain.

Items	%
1. When do you think that it is appropriate for patients with severe cancer pain to receive optimal analgesics?	
A. Prognosis <1 month	4.3
B. Prognosis 1–3 months	12.1
C. Prognosis 4–6 months	33.6
D. Prognosis 7–12 months	18.1
E. Prognosis 13–24 months	31.9
2. What level of analgesic requirement do you think cancer patients have?	
A. Too much	15.5
B. About right	77.6
C. Too little	6.9
3. What is the reason why cancer patients request higher doses of analgesics?	
A. Psychological addiction	2.6
B. Tolerance	10.3
C. Increased pain	62.9
D. Increased anxiety	16.4
E. Increased depression	7.8
F. Needing more attention	0.0

harmful effects in long-term use. More than half of them agreed or strongly agreed that they would prescribe opioid on a PRN (*pro re nata* = as needed) basis for patients with moderate to severe cancer pain. For patients with ongoing and excruciating pain, about half of the interns agreed or strongly agreed that they would increase strong opioid dosage and offer it on a PRN dosing schedule. Forty percent of the interns agreed or strongly agreed that opioid administration on a PRN basis could lessen adverse effects. Half of them agreed or strongly agreed that most patients preferred parenteral to oral administration and that the parenteral route was more effective than oral intake. About 40% of them had no idea whether to give morphine orally even when patients were able to normally ingest food (Table 2).

Attitudes of interns toward opioid prescription

Almost 90% of the interns agreed or strongly agreed that they would prescribe opioids carefully to avoid tolerance and addiction. However, approximately 70% of them disagreed or strongly disagreed that keeping the opioid dosage much lower than required could prevent tolerance. Slightly over 80% of the

interns disagreed or strongly disagreed that they would inform patients and relatives that opioids were not good and that the patients would be better off to endure the pain as much as they could. Nearly 60% of them disagreed or strongly disagreed that they would support patients who refused to use morphine in the presence of unbearable pain. About one in ten of them agreed or strongly agreed that they did not like to prescribe opioids because of an awareness of respiratory depression (Table 3).

Barriers to cancer pain management

Approximately 80% of the interns thought that inadequate knowledge of pain management, inadequate pain assessment and lack of time to focus on what patients required were barriers to effective pain management. More than half of them did not think that physicians' reluctance to prescribe opioids, nurses' reluctance to administer opioids, patients' reluctance to report pain, patients' reluctance to receive opioids, patients' relatives' reluctance to allow patients to take opioids or patients' inability to pay for medications were barriers (Table 4).

Discussion

This study revealed that the participating interns had positive attitudes in terms of optimal opioid usage and prescription to alleviate cancer pain. The result was in accordance with that of Yun et al⁷ which showed the positive attitudes of Korean clinicians, but opposite to that of Ger et al² and Weinstein et al⁸ which demonstrated the negative attitudes of Taiwanese physicians and physicians in Texas, USA, respectively. However, a large proportion of the interns held incorrect knowledge regarding opioid prescription, a finding similar to that of Ger et al.² Many reasons were viewed as barriers to effective cancer pain management.

These physicians' attitudes directly prevent effective pain management by obstructing proper opioid prescription.⁸ The majority of the interns did not wait until the end of life to commence maximum doses of analgesics to patients. von Roenn et al³ and Cleeland et al⁴ found that 31% and 23% of the clinicians in their study would wait to provide optimal analgesia until patients' life expectancy was less than six months. Weinstein et al⁸ stated that 77.2% of surveyed physicians agreed that it was suitable to raise the dosage of opioids above the usual dosage if the

**Table 2.** Knowledge of interns regarding opioid prescription.

	Strongly disagree (%)	Disagree (%)	No comment (%)	Agree (%)	Strongly agree (%)
1. When patients require strong opioids, I would rather prescribe pethidine instead of morphine.	7.8	43.0	14.6	29.3	5.2
2. For long-term use, pethidine causes fewer adverse effects including tolerance and addiction.	5.2	35.3	30.2	28.4	0.9
3. I prefer to prescribe opioids on a PRN basis for patients with moderate to severe cancer pain.	3.4	28.5	8.6	49.2	10.3
4. For patients with persistent and severe cancer pain, I would increase opioid dosage but still on a PRN basis.	4.3	38.8	8.6	41.4	6.9
5. Administering opioids as needed can reduce harmful effects including tolerance and addiction.	0.9	30.4	28.7	34.8	5.2
6. Most patients would like to receive parenteral administration rather than oral administration.	6.1	31.3	15.7	36.5	10.4
7. Parenteral administration is more effective than oral administration.	2.7	25.2	21.7	44.3	6.1
8. Oral morphine is slowly and incompletely absorbed in the gastrointestinal tract. I do not like patients to take morphine by mouth even though they can eat food normally.	3.4	40.6	36.2	15.5	4.3

PRN (pro re nata) = as needed.

"Strongly disagree" and "disagree" are the correct answers for each question.

prognosis was less than one year. Manalo⁹ found that 74.5% of medical students did not agree that opioids should not be used until the final stages of an illness. In fact, patients' pain should be maximally treated as soon as possible, no matter what the prognosis is.

A small number of the interns thought that cancer patients requested too much analgesic and their increased analgesic requirement was a result of addiction. These negative attitudes need to be addressed because they can lead to suboptimal pain management. Weinstein et al⁸ commented that a significant number of physicians in their survey demonstrated opiophobia (prejudice against use of opioids). Peker et al¹⁰ showed that almost three-quarters of the clinicians in their study worried about addiction. Addiction or psychological dependence is rarely a problem in the clinical practice of this group of patients.^{11,12}

The knowledge of the participating interns is a major area of interest. A very significant number of them demonstrated erroneous knowledge concerning opioid usage. We assume that what is taught and

practiced in a medical school may be not applied into their real clinical practice. Moreover, these interns were early in their careers so their lack of knowledge might be due to lack of experience. Additionally, their incorrect knowledge may partially be influenced by limited availability of opioids in their hospitals.

It is stated that the ongoing lack of knowledge regarding fundamental content among medical practitioners who instruct medical students raises issues about the effectiveness of the traditional continuing medical education processes.¹³ Stiefel et al¹⁴ discovered a contrary result because a majority of their responding physicians were likely to be well-informed regarding the proper treatment using opioids in cancer pain patients. Gallagher et al¹⁵ employed a questionnaire survey and discovered the first two questions were most commonly replied erroneously; these included equianalgesic dosage and enough rescue dosage for breakthrough pain, revealing knowledge deficits. Sapir et al⁶ used questions to assess knowledge deficiencies and identified the subsequent

**Table 3.** Attitudes of interns toward opioid prescription.

	Strongly disagree (%)	Disagree (%)	No comment (%)	Agree (%)	Strongly agree (%)
1. I am very careful in controlling dosage and frequency of opioid administration to avoid tolerance and addiction.	0.0	10.3	1.8	72.4	15.5
2. To prevent tolerance, opioid dosage should be much lower than what they require.	11.2	58.6	13.8	13.0	3.4
3. I will inform patients and their relatives that opioids are not good and therefore they should put up with their pain as much as possible.	24.1	56.9	11.2	7.8	0.0
4. I will support patients who bear severe pain and decline to use opioids.	10.3	47.5	19.8	19.0	3.4
5. I do not like to prescribe opioids because of respiratory depression.	6.0	71.6	10.3	9.5	2.6

areas of knowledge deficits: pain physiology and pathophysiology, the risk and incidence of iatrogenic addiction from receiving morphine, the use of adjuvant analgesics, the selection of medications and the route of administration in the presence of pain crisis, the titration of opioid dosages and the calculation of this when rotating from the parenteral to the oral route, and the management of adverse events. The authors were not surprised with the finding, as the physicians responding to their survey were dissatisfied and evaluated their training in cancer pain management in medical school and residency programs

Table 4. Barriers to cancer pain management.

Items	No (%)	Yes (%)
1. Insufficient knowledge of pain management	19.0	81.0
2. Insufficient assessment of pain	15.5	84.5
3. Physicians' unwillingness to prescribe opioids	72.4	27.6
4. Nurses' unwillingness to give opioids to patients	67.2	32.8
5. Staff have insufficient time to pay attention to patients' pain needs	46.6	53.4
6. Patients' unwillingness to report pain	63.8	36.2
7. Patients refuse to receive opioids	73.0	27.0
8. Relatives' unwillingness to permit patients to take opioids	77.6	22.4
9. Patients' inability to pay for medications	79.3	20.7

as being poor,⁶ a result parallel with that of Eftekhari et al.¹⁶ Poor knowledge and misconceptions in regard to cancer pain and its management essentially need to be corrected, since they can lead to poor cancer pain relief. Possible methods to improve knowledge are to implement cancer pain management in medical students' curricula, bedside teaching and case discussions. Many studies have recommended revisions of medical curricula^{8,9} and to reinforce pain management in medical practice⁸ as a part of continuing postgraduate education.¹⁴ Eftekhari et al.¹⁶ recommended the dissemination of guidelines in order to gain a remarkable improvement in cancer pain management. It is worth to note that von Roenn et al.³ mentioned that regardless of more space allocated to pain control in textbooks of medicine, oncology or both, pain relief teaching needs to become part of clinical assessment and care of cancer patients on a daily basis.

The majority of the interns exhibited positive attitudes in terms of opioid prescription but the greatest part of them exercised a high level of care to control frequency and dosage of opioids to prevent tolerance and addiction. This attitude is not beneficial for cancer pain patients, as mentioned earlier in that they are hardly problematic. This belief also needs to be corrected.

Many reasons were viewed as barriers to effective cancer pain management. Insufficient knowledge was considered to be one of the foremost barriers. We have discussed this issue earlier.



The other main rationale for inadequate pain relief was insufficient pain assessment; this is in accordance with a number of previous studies from many countries.^{1–7,17–20} More than half of the interns felt that health care providers did not have enough time to attend to patients' needs. This is especially true in Thailand as the patient to health care provider ratio is high. This issue is a large-scale problem that needs to be addressed at a national level. Other barriers to effective pain management included beliefs resulting from physicians', nurses', patients' and patients' relatives' perspectives. All barriers should be taken seriously to improve cancer pain management.

Manalo⁹ illustrated three main reasons that can be regarded as limitations of opioid usage: fear of addiction, lack of adequate knowledge and experience and fear of adverse events and complications. Stiefel et al¹⁴ found that one in five of the physicians in their study thought that the danger of addiction, respiratory suppression and other adverse events were chief reasons for not using opioids in cancer pain patients. Sapir et al⁶ found that half of the physicians they surveyed had a reluctance to prescribe opioids.

As previously mentioned, what is taught and practiced in a medical school may not be the same as what is carried out in other types of hospitals. Further studies on the limitations of cancer pain management in various levels of hospitals (primary, secondary and tertiary care hospitals) should be taken into account.

This study has limitations related to generalizability, the choice of surveying interns in comparison to more experienced physicians and the fact that the survey questions were not prefaced by a scenario (e.g. the answers may have been different if they were asked about patients at the end of life versus patients in treatment).

Conclusion

The majority of participating interns demonstrated positive attitudes in terms of using optimal dosages of opioids and prescribing opioids to control cancer pain. However, a lot of them held incorrect knowledge regarding cancer pain management. Many causes were judged as barriers to effective cancer pain management. This study has revealed a lot of room for improvement in order to make better health care available.

Disclosures

This manuscript has been read and approved by all authors. This paper is unique and is not under consideration by any other publication and has not been published elsewhere. The authors and peer reviewers of this paper report no conflicts of interest. The authors confirm that they have permission to reproduce any copyrighted material. No financial support was received from any pharmaceutical company for this study.

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