

CHAPTER 1

INTRODUCTION

Cancer is a major global public health problem. There are about 9 million new cancer cases each year, 4 million are in the developed countries and 5 million in the developing countries. By the year 2030 the new cases are predicted to increase to 15 million, 5 million will be in the developed countries, and 10 million in the developing countries (Stjernsward, 1993; World Health Organization, 1995). The increased amounts were 25% and 100%, respectively. The incidence rate of cancer in Thailand, as elsewhere in the Asian countries, is increasing (Vatanasapt, Sriamporn, & Vatanasapt, 2002). It was estimated that 35,539 men and 38,476 women will respectively develop cancer in 1996 with the age standardized rates being 149.2 and 125.0 per 100,000 populations in men and women (Sriplung et al., 2005). The National Cancer Institute of Thailand has projected for over 120,000 new cancer cases by 2008, approximately 50% increasing for over 10 years period (Sriplung et al., 2003).

Pain is one of the most common and distress symptoms among cancer patients (Bruera & Kim, 2003). It interferes with the patients' functional ability. Cancer patients in the advanced stage mostly fear of pain more than death (Arathuzik, 1991). Cancer pain often occurs throughout the course of the disease and becomes severe at the end stage. Several surveys have reported that 30% to 40% of patients in active cancer therapy had cancer pain, while 70% to 90% of cancer patients with advanced stage experienced with cancer pain (Goudas, Bloch, Gialeli-Goudas, & et al, 2005; Grond, Zech, Diefenbach, Radbruch, & Lehmann, 1996). Unfortunately, most cancer patients were diagnosed when the disease was far advanced and incurable (World Health Organization, 1996). Therefore, pain management becomes a major aim of the treatment in these patients. The quality of life of cancer patients with pain who received improper or inadequate treatment for pain relief would be decreased due to their worsen functionality and the higher caregiver burden. A recent multicenter study showed a strong correlation between the pain and quality of life. The

deterioration of pain by more than three points (3 out of 10) has a significant impact on the patients' quality of life (Thienthong et al., 2006). Moreover, it is important to note that uncontrolled pain is a major risk factor for anxiety, depression, suicide and suicidal ideation in cancer patients (Breitbart, 1990; Levin, Cleeland, & Dar, 1985). Evidence suggested that cancer pain and depression are highly associated, but a cause and effect relationship has not confirmed (Valentine, 2003).

Cancer pain can be treated and drug treatment is the mainstay of pain management. The World Health Organization (WHO) has proposed cancer pain relief guideline, using "a three-step analgesic ladder", based on a small number of inexpensive drugs, particularly morphine since 1986 (World Health Organization, 1986). The aim is to promote adequate pain relief to all worldwide cancer patients through the existing health care systems. Such WHO guideline has been translated into 22 languages and more than 500,000 copies were distributed throughout the world. In order to achieve the cancer pain management by using analgesics based on WHO method, the five principal elements should be employed, including "by mouth, by the clock, by the ladder, for individual, and attention to detail" (World Health Organization, 1996). Because of the unique characteristic of opioid drugs, there are no standard doses for opioid drugs. The proper dose is considered for individual patient that can relieve pain with less or acceptable side effect. It should be noted that the range of oral morphine may be from 5 mg to over 1000 mg every four hours. Several studies have shown that cancer pain treatment following WHO guidelines is effective and safe in 80%-90% of patients (Mercadante, 1999; Zech, Grond, Lynch, Hertel, & Lehmann, 1995). Now, the WHO method for cancer pain relief has become integrated into the National Cancer Programmes in many countries. Unfortunately, the cancer pain is still the problem reported in several survey studies. The cancer patients receiving inadequate pain medication were 15% to 79% whereas 47% to 91% of cancer patients had moderate to severe pain (Beck & Falkson, 2001; Cascinu et al., 2003; Cleeland, Gonin, Baez, Loehrer, & Pandya, 1997; Cleeland et al., 1994; de Wit, van Dam, Vielvoye-Kerkmeer, Mattern, & Abu-Saad, 1999; Hyun et al., 2003; Larue, Colleau, Brasseur, & Cleeland, 1995; Mystakidou et al., 2001; Sabatowski, Arens, Waap, & Radbruch, 2001; Saxena, Mendoza, & Cleeland, 1999; Uki, Mendoza,

Cleeland, Nakamura, & Takeda, 1998; Wang, Mendoza, Gao, & Cleeland, 1996; Wells, 2000; Yun et al., 2003).

As opioids are drugs of choice for moderate to severe cancer pain management and are classified as a controlled substance, several barriers to cancer pain treatment often occur. Previous studies classified the barriers into three areas, including patients' barriers, healthcare professional barriers, and system barriers (Sun et al., 2007). For example, the patients are reluctant to report their pain to the healthcare provider or they are reluctant to take pain medication because of misconception about cancer pain and pain medication (Gunnarsdottir, Donovan, Serlin, Voge, & Ward, 2002; Ward et al., 1993). Physicians are reluctant to prescribe opioids because of the fear of addiction in their patients (Ger, Ho, & Wang, 2000). System regulation is restricted to access opioid drugs because of the drugs war. Therefore, the investigation of these barriers in each area should be made to plan for the better interventions to better quality of pain treatment.

In Thailand, the problem of cancer pain is similar to that in other countries. About 18,000 patients die from cancer each year and more than 70% of them die without proper pain management (Leelanuntakit, 1992; Statistic Division of Public Health. Permanent Secretary Office, 1998). The main aim of cancer treatment in Thailand is generally to lessen tumor size and improve the outcome of laboratory testing so the pain in cancer patients is negligible (Vatanasapt, Sriamporn, & Vatanasapt, 2002). Several survey studies conducted in Thailand in 1990s revealed that 62% - 89% of cancer patients had moderate to severe pain. Most of the cancer patients received inadequate pain treatment based on the WHO's guidelines more than 30% of cancer patients did not receive pain medication. (Chaudakshetrin, 1993; Chukkul Luengsukcharoen, 1998; Petpichetchian, 1998; Ratanathai, 1998; Vatanasapt et al., 1992). The reason of under-treated pain in Thailand may be due to the insufficient knowledge and resources, the restrictiveness of regulations resulting from the drugs war, physicians' reluctance to prescribe opioids or to adjust the appropriate dose to each patient because of the fear of addiction (Chaudakshetrin, 1993; Paiboonvorachart & Boonsong, 2000). Therefore, many efforts were made to solve the problems about the pain relief. For example, several university hospitals set up the

pain clinic within their hospital for the referral patients from other medical units who had any etiology of pain. The first Clinical Practice Guidelines for cancer pain treatment in Thai version was published and disseminated via internet in 2004. Moreover, the relaxation of the Ministerial Notification of Ministry of Public Health No. 197 B.E.2549 (2006) has notably increased the amount of opioids medication for more availability and accessibility of all hospitals in Thailand since 2006. In the past, the government hospitals were allowed to access only 400 grams of morphine per year, whereas the private hospitals were allowed only 50 grams. According to the above Ministerial Notification, the amount of such medicine for the government and private hospital has been significantly raised to 4000 grams, and 1000 grams as respectively.

Cancer patients are generally referred to university-based pain clinic or cancer centers for proper pain treatment. Unfortunately, cancer centers in Thailand do not provide the special pain services for the cancer patients. Nowadays, there are eight specialized cancer centers in Thailand but there is only one equipped with a partially functioning pain clinic. Most the referred cancer patients with pain access to the pain relief regimen from their oncologists. A recent study rendering a large number of samples (n=520) in a multi-center with the prospective cohort design during 2001-2002 showed that 61.5% of cancer patients reported moderate to severe pain (Thienthong et al., 2006). Despite the fact that the participating settings consisted of pain clinics and oncology departments of tertiary care hospitals, the quality of pain treatment was still dissatisfactory. This situation raised a question about the difference in pain treatment outcomes between physicians with different specializations. In addition, few studies in Thailand have revealed a clear discrepancy of pain control problems among physicians. Therefore, it is necessary to study the effect of the pain treatment in these clinical settings on pain and related outcomes. The findings from different medical settings with regard to the quality of pain treatment will be beneficial for cancer patients.

Research questions

- 1) How good is pain management for the cancer patients in each setting?
- 2) What are the factors associated with good outcomes?

Objective of the study

1. To examine the prevalence of the inadequate pain control in cancer patients
2. To examine the prevalence of depression in cancer patients
3. To examine the quality of life among cancer patients
4. To evaluate the appropriateness of analgesic medication prescription measured by the Pain Management Index (PMI)
5. To test whether non-pain clinic setting is an independent factor associated with inadequate pain control

Significance of the Study

The study findings would be suggested to policy makers and health professionals involved in order to improve the effectiveness of the cancer pain treatment.

Operational definition**Stage of cancer**

The clinical extent of cancer is classified by the TNM classification system into four stages (1-4) (International Union Against Cancer (UICC), 1987), the higher number suggesting the more serious condition.

Number of pain sites

The number of cancer-related pain sites is reported by the patients where continuous area of pain on a body will count as one site.

Duration of pain

The period of time that the patients have suffered from their current cancer related to pain episode.

Pain intensity

The rating of experienced pain on a scale 0-10, reported by the patient at four time points; pain right now, worst pain, least pain and average pain in the past 24 hours. This study is measured by BPI-SF (Brief Pain Inventory).

Pain severity

The degree of pain severity derived from pain intensity scores when compared with interfering functional ability on usual daily life. It is classified into 3 level: mild pain (1-3 scores), moderate pain (4-6 scores), and severe pain (7-10 scores).

Adequate pain control

The level of worst pain within the past 24 hours, measured by BPI-SF, is reported by a patient. It is classified into 2 categories as adequate pain control (0-3 scores) and inadequate pain control (4-10 scores)

The Pain Management Index (PMI)

A method of assessing the adequacy of pain management based on the WHO Analgesic Ladder. The PMI was calculated as follows. The most potent analgesic prescribed was categorized at one of four levels: 0=no analgesics, 1=a non-opioid, 2=a weak opioid, 3=a strong opioid. The patient's level of pain from the worst-pain score on the Brief Pain Inventory was also categorized into four pain levels as 0=no pain, 1=mild pain (1-3), 2=moderate pain(4-6), 3=severe pain(7-10). The PMI was then computed by subtracting the pain level from the analgesic level, range from -3 to 3, with the lower value representing greater under-treatment. Negative PMI scores are considered to indicate inadequate orders for analgesic drugs, scores of 0 or higher are considered to be an indicator of acceptable treatment.

Depression

A syndrome of psychiatric illness that comprises of insomnia, fatigue, anorexia, depress mood, loss of concentration, guilty feeling, self destructive though, etc. This condition is measured by the Thai-version of HADS instrument (The Hospital Anxiety and Depression Scale) with the cut-off point scores of equal or more than 11, indicating that a patient is having a depression illness.

Patient's Barriers

The patients' misconceptions that make them neither report pain to their physician nor take pain medication prescribed by the physician, assessed by using the Barrier Questionnaires-II (BQ-II) (Gunnarsdottir, Donovan, Serlin, Voge, & Ward, 2002).

Physician's Barriers

The physicians' negative attitude or inadequate knowledge of cancer pain treatment that leads to avoiding prescribing opioid analgesics to patients, assessed by using the questionnaires developed by Luo-Ping Ger's study (Ger, Ho, & Wang, 2000).

System Barriers

The problems of the hospital system that cause unsuccessful cancer pain treatment such as drug procurement, narcotic analgesics prescription. Qualitative study with topic guide was conducted by collecting data from physicians who treated cancer patients, and pharmacists who are responsible for narcotic drugs provision.

Quality of life

The degree of patients' physical well-being, social well-being, emotion well-being, and functional well-being within the past 7 days was assessed by using the Thai version FACT_G instrument (Rattanatharathorn et al., 2001).

Figure 1.1
Conceptual Framework

