Pain management in cancer patients: different strategiestowardone outcome

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ABSTRACT

Background:*The International Association for the Study of Pain (IASP) defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage.Pain is a universal human experience and it is the common question for people to seek health care. Different modalities reported to be an effective for painmanagement.*

Objective: *The study aimed to describe the efficacy and roles of different strategies in control of pain in metastatic cancerous patients.*

Methods*: This is a prospective observational study carried out at the Neurosurgery Department in Gulan General Hospital, from the 1ˢᵗ of March 2020 to the 30ᵗʰ of May 2020. Patients were assessed before receivingpain control modalities, at beginning, and at the end of treatment. Pain scoring used from 0 (no pain) to 10 (the worst pain).*

Result: *There were 59% males and41% females with the mean age were46.58±14.22 years.The breast cancer was the most types studied. The most pain site was backache which figured in 50% of patients. Sharp pain was commonly described by 45% patients. Frequent pain was more presentedin 60% of patients. Night was commonest timing of pain. Pain mostly relief by taking medication in 65%.Before treatment, the most common scoring was (9) in 30% of patients, followed by score (10) as 25%. Aftermedication the scoring shift downward toward borderline and low scoring with significant associations for scoring (5-10) (P=0.047, 0.049, 0.05, 0.049, 0.05, 0.05), respectively.The follow-up after one month, stable status found in 59% patients, whereas those feltbadwere 10%.*

Conclusion*: After receiving treatment, several medications like simple analgesia, NSAIDs, and narcotic cause shifting of the pain scoring downward and move from left to right. Combination of more than strategies more efficient than use single option for pain management in cancerous patients with better outcome.*

Keywords*: Pain control, Metastatic cancer, Pain scoring*

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I. Introduction

The International Association for the Study of Pain (IASP) defines pain as an unpleasant sensory and emotional experience associated with actual or potential tissue damage [1].Pain is not just a physical sensation [1]. It isinfluenced by attitudes, beliefs, personality and social factors, and can affect emotional and mental wellbeing [1].Although two people may have the same pain condition, their experience of living with pain can be vastly different—if you live with pain, you would already know this.There are three main categories of pain: acute, chronic and cancer pain [1, 2].

Acute pain lasts for a short time and occurs following surgery or trauma or other condition. It acts as a warning to the body to seek help. Although it usually improves as the body heals, in some cases, it may not [1, 2].

Chronic pain lasts beyond the time expected for healing following surgery, trauma or other condition. It can also exist without a clear reason at all [1, 2]. Although chronic pain can be a symptom of other disease, it can also be a disease in its own right, characterized by changes within the central nervous system [1, 2].

Pain palliation by medications is an effective processto relief pain that seen in 80-90% of patients and complete pain relief in 50% [2]. The response to treatment depend on a large number of factors, including sex, primary site, performance status, type of lesion, location of the metastases, weight-bearing vs non–weight-bearing site, extent of disease, number of painful sites, marital status, and level of pain prior to treatment [2]. The effectiveness of the treatment also depends on the goal: palliation of pain, prevention of pathologic fracture, avoidance of future treatments, and/or local control of the disease. Patients who have improvement in pain may also have improvement in emotional functioning, decreased insomnia, and overall improvement in qualityoflife [3]. Drugs should be an integral part of palliative treatment of pain, and prevention of other symptoms [4].Palliative care is an approach that improves the quality of life, and their families facing a life-threatening illness [2]. The aims to prevent and relief suffering by early identification, assessment and treatment of pain and other physical, social and spiritual problems [4]. It affirms dying as a normal process and does not intend to postpone or hasten death [4]. Palliative care offers a support system to help patients live as actively as possible until death [2, 4].

Cancer is a group of complex diseases, and it may develop in any body tissues [5]. Cancer results from an interaction of genetic and internal factors with environmental factors, or cancer-causing agents, carcinogens [5]. In 2018, about 18,078,957 new cancer cases were diagnosed and 9,555,027 death accounted by GLOBOCAN [6].Metastatic disease to the bone is a common cause of pain that is detrimental to quality of life [7]. The most common symptom of bone metastases is slowly progressive, insidious pain that is fairly well localized [7]. Although the pain is frequently localized [3]. A patient whose pain cannot be cured or controlled might have an end-stage illness and he or she may live for months in pain [8].

II.   Patients and methods

Study design and Setting

This is a prospective observational study carried out, from the 1st of March 2020 to the 30th of May 2020. All patients recruitment and exposed to palliative issues for pain control. Follow-up throughout period and after finishing therapy done.

Data collection

All information about variables collected from patient as age, tumor types, site of pain, words describe pain, characteristics of pain, timing of pain, medication used to relief pain (simple analgesia, NSAIDs, opioids), conditions interfering with pain as general activity, mood, work, sleep, enjoyment, concentration, and relationship with others.

Participants

100 Patients, who were referred for pain control center, enrolled into the study after informed consent were taken from all patients. We catch eligibility criteria, and the sources and methods of selection of participants by using the questionnaires sheet.

Follow-up

Patients were assessed before receiving drugs, at beginning, and at the end of treatment. Then we assessed the quality of pain control after finishing. For evaluation of pain relief, a numerical scale was used. This scores the pain from 0 (no pain) to 10 (the worst pain). Scoring was performed before, and at eight weeks after. During this period, the patients were interviewed by telephone for assessment of pain status. Complete pain relief was defined as a complete absence of pain and without the need for analgesics. Partial pain relief was defined as reduction of pain by a decrease in pain score of more than two. Pain progression was defined as any increase in the pain score or increased medication uses. The time to achieve pain relief was recorded from the day of treatment. The duration of pain relief was measured as the time from pain relief to progression of pain or an increase in analgesic medication.

Name:

ID:

Pain Questionnaire

1. Where is your pain?

   _____
   _____

2. Circle the words that describe your pain.

Aching	Sharp	Penetrating
Throbbing	Tender	Nagging
Shooting	Burning	Numb
Stabbing	Exhausting	Miserable
Gnawing	Tiring	Unbearable

3. Does your pain occur occasionally, frequently or is it constant? (Circle one)

   Occasionally   Frequently   Constant

4. What time of day is your pain the worst? (Circle one)

   Morning   Afternoon   Evening   Nighttime

5. Rate your pain by circling the number that best describes your pain at its **worst** in the last month.

   No pain 0 1 2 3 4 5 6 7 8 9 10   Pain as bad as you can imagine

6. What makes your pain **better**? _____

7. What makes your pain **worse**? _____

8. What treatment or medication are you receiving for your pain? If you are not receiving any treatment or medication, circle NONE.

   None

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9. Circle the one number that describes how, during the past week, pain has interfered with your:

   a. General Activity   Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes

   b. Mood   Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes

   c. Normal Work   Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes

   d. Sleep   Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes

   e. Enjoyment of life   Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes

   f. Ability to concentrate Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes

   g. Relationships with   Does Not Interfere 0 1 2 3 4 5 6 7 8 9 10 Completely Interferes
      other people

Patient Signature _____   Date: ___/ ___/ _____

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Notes:

☐ No action plan required.

☐ Action plan required. See progress note.

Clinician Signature & Professional Designation _____ Date: __/ __/ ____

Statistical methods

All variables were collected in Excel sheet then transfer to statistical analysis into a file of "IBM SPSS Statistics"(SPSS, Chicago, and USA V 22). Frequencies and relative frequencies tabulation. Mean, and standard deviation describe normal distribution. A two-sided *P* value of 0.05 or less was considered statistically significant.

III.   Results

There were 59(59%) males and 41(41%) females included.The mean age was 46.58±14.22 years, and the most frequent age group was 41-50years 36(36%). The breast cancer was the most type studied 45(45%), followed by prostate carcinoma 20(20%). The most pain site was the back which figured in 50(50%) of patients, (**Table 1**).

Pain properties of this study, figured in Table 2. Sharp pain was common, described by 45(45%) of patients. Frequent pain was more presentedin 60(60%) of patients. Night was commonest timing of pain felt 75(75%). Pain mostly relief by taking medication in 65(65%) and aggravated by movement in 75(75%), (**Table 2**).

Pain scoring ascending from 1-10 estimated before analgesia and after. Before treatment, the most common scoring was (9) in 30(30%) of patients, followed by score (10) in 25(25%) of patients, score (8) in 20(20%) of patients, and score (7) in 15(15%) patients, those represented high scoring referred to worsen pain. Regarding borderline score, (6) and (5) were recorded in 6(6%), and 4(4%), respectively. Aftermedication the scoring shift downward toward borderline and low scoring with significant associations for scoring (5-10) (*P*=0.047, 0.049, 0.05, 0.049, 0.05, 0.05), respectively. The scores (1), (2), (3), and (4) figured in 1(1%), (6(6%), 5(5%), and 5(5%), respectively, which were previously zero recording.Post treatment, both scores (5) and (6) presented in 22(22%), and 20(20%) respectively. Scores (7) and (8) figured in eight patients (8%). 15(15%) cases recorded for score (9). Highest score (10) recorded in 10(10%) of patients, (**Table 3**).

The follow-up after one month, stable status found in 59(59%) of patients, and no change conditions in 31(31%) of patients. Patients feel bad in 10(10%) of patients, (**Table 4**).

Table 1: General characters.

Variables		N	%
Sex	Male	59	59
	Female	41	41
Age (years)	30-40	12	12
	41-50	36	36

	51-60	22	22
	61-70	18	18
	>70	12	12
Tumor types	Lung	10	10
	Breast	45	45
	GIT	10	10
	Prostate	20	20
	Bladder	15	15
Sites of pain	Backache	50	50
	Abdomen and pelvic	20	20
	Lowerlimb	5	5
	Headache	20	20
	Other	5	5

Table 2: Pain properties.

Variables		N	%
Descriptions	Aching	20	20
	Sharp	45	45
	Penetrating	5	5
	Burning	10	10
	Stabbing	10	10

	Exhausting	5	5
	Unbearable	5	5
Occurrence	Constant	40	40
	Frequent	60	60
Timing	Night	75	75
	Day	10	10
	All	15	15
Reliving factors	Sleeping	10	10
	Resting	20	20
	Drug	65	65
	No	15	15
Aggravating factors	No	10	10
	Movement	75	75
	Everything	15	15

Table 3: Pain scoring.

Pain score	Patients number before medication	Patients number after medication	P-value*
	No (%)		
1	0	1 (1)	0.5
2	0	6 (6)	0.19
3	0	5 (5)	0.1
4	0	5 (5)	0.1

5	4 (4)	22 (22)	**0.047**
6	6 (6)	20 (20)	**0.049**
7	15 (15)	8 (8)	**0.05**
8	20 (20)	8 (8)	**0.049**
9	30 (30)	15 (15)	**0.05**
10	25 (25)	10 (10)	**0.05**
*Chi-square for paired t test			

Table 4: Follow-up of patients beyond treatments.

Outcome	N	%
Stable	59	59
No change	31	31
Worse	10	10

IV.   Discussion

Cancer pain can occur in patients with early stage and advanced disease and in cancer survivors as a severe and debilitating side-effect of treatment [1].Bone metastases are a frequent complication of many cancers, particularly prostate, lung and breast [7, 9], and can lead to skeletal-related events, like hypercalcaemia, pathological fractures, and spinal cord compression [7, 9]. Many drugs has been proven to be an effective and key treatment option for both pain and symptom management of pain [9]. It is effective in reducing pain in two-thirds of patients, with about one-quarter of patients achieving a complete response [2, 3].

Sharp pain was commonly described by patients. The pain mostly frequent at night timing, and mostly relief by taking medications. When assessing pain, patients should be asked to describe their pain, its quality, intensity, location, temporal pattern and alleviating and aggravating factors [10]. The management of pain in cancer should be undertaken in a systematic manner, based on some principles. First, each pain should be assessed separately, and it should be ascertained that they are related to the cancer [10].

All pain scoring change at period of follow-up. Before treatment, the most common scoring was highest scores which reflectingthe worse feeling of pain by patients. After treatment the scoring shifts downward. All mild scores (1), (2), (3), and (4) not presented before medications, but appear after that.

The most widely accepted definition of pain is that given by International Association for the Study of pain (IASP): "Pain is an unpleasant sensory and emotional experience associated with potential or actual tissue damage or described in terms of such damage." Pain is always subjective and it means that psychosocial and spiritual concerns can modify the sensation of it [11]. According to a research by Sloan-Kettering Cancer Center, 78% of cancer-related pain is caused by the tumor, 19% is related to the treatment and 3% is not caused by cancer [8]. The pain related to cancer is almost nociceptive, which mean tissue irritation caused by the tumor [9]. Nociceptive pain may be described as somatic or visceral pain, the somatic pain, also called bone pain, which is sharp, whereas visceral pain is generalized, throbbing, dull, and aching [12]. Neuropathic pain, also called nerve pain, is caused by damage or dysfunction of peripheral or central nerves [12]. Characteristics of neuropathic pain include burning, numbness, shooting or tingling sensations in the affected area [2, 12].

There is a significant discrepancy between the physician estimate of pain and the pain level reported by the patient [13, 14]. The use of a validated pain scale, such as the Brief Pain Inventory, gives the patient an opportunity to describe the severity of pain and the interference of pain with function in a manner that can be understood both by the patient and the physician [13, 14].

WHO developed guidelines for the treatment of cancer pain in 1986 (revised in 1996), which were aimed at decreasing the prevalence of inadequate analgesia, this most cause to used other options for alleviating pain in cancerous patients [4].

V.   Conclusions

Most of patients suffer from sharp andfrequent pain mostly at night. Medications play important role in palliation of cancerous pain. After receiving treatment the pain scoring shift downward and move from left to right. Combination of more than strategies more efficient than use single option for pain management in cancerous patients with better outcome.

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