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Causes of Admission to A Palliative Care Inpatient Unit in An Egyptian Cancer Center

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Abstract

Introduction: During this early stage of development of palliative care (PC) in Egypt, research is warranted to identify PC needs of advanced cancer patients and to develop suitable PC models. One of the PC models is the hospital-based inpatient palliative care unit (HB-IPCU). This report describes causes of admission to a new HB-IPCU in an Egyptian cancer center.

Methods: We retrospectively reviewed 70 admissions related to 61 advanced cancer patients admitted to HB-IPCU from June, 2009 to end of January, 2010. Primary end point was determination of main causes of hospital admissions for palliative care, while secondary end points were the principal lines of palliative treatment and average length of hospital stay.

Results: Median age was 50 years (range, 27-76 years). Female admissions constituted 66% of all admissions. Average period from date of first presentation to PC unit till admission was 28 days (range, 0-90 days). Average length of stay was 6 days (range, 1-22 days). Median number of problems listed upon admission was three (range, 1-5). Uncontrolled pain, vomiting, dehydration, fever were the most common problems and constituted 66%, 31%, 23% and 23% respectively. Other problems included severe anaemia, constipation, respiratory distress, venous thrombo-embolism, bleeding, electrolytes disturbances, and renal impairment. In 74% of admissions, opioids were used to control pain. Other lines of treatment included infection management, blood transfusion, anticoagulation and parenteral hydration.

Conclusion: Pain was the main cause of admission to HB-IPCU in our setting. In Egypt, many barriers exist to cancer pain control including immediate release morphine unavailability and restrictive regulations. An immediate action is needed to overcome these barriers. Many of the listed problems could be managed at home to avoid unnecessary hospitalization. Our results provide provisional guidance for future PC development in our center and similar settings in Egypt.

Key Words: *Palliative – Admission – Pain – Cancer.*

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Introduction

THE focus of palliative care includes the relief of suffering for patients with life-threatening or serious debilitating illness and support for the best quality of life for patients and their families. Palliative care can transform the current disease-focused approach to a patient-centered philosophy, where the needs of the patient and family goals become essential to planning the patient's care.

During this early stage of development of palliative care (PC) in Egypt, research is warranted to identify PC needs of advanced cancer patients and to develop suitable PC models. One of the PC models is the hospital-based inpatient palliative care unit (HB-IPCU). This report describes causes of admission to a new HB-IPCU in an Egyptian cancer center. There is limited research on the effect of family caregivers' concerns about pain and analgesic use. Few studies have investigated causes of palliative care admissions, treatment given and length of hospital stay.

Material and Methods

The study included incurable advanced cancer patients admitted to the palliative care unit (PCU) of Kasr Al-Aini Center of Clinical Oncology and Nuclear Medicine (NEMROCK) from June, 2009 to end of January, 2010.

Inclusion criteria included histologically or cytologically confirmed malignant tumor, evidence of advanced or metastatic malignant disease (clinical and/or by investigations) and admission referrals to the PCU during the study period. Excluded patients included those receiving cancer-modifying therapy and non-malignant patients. The study collected patients' data of 70 admissions that in-

cluded initial assessment with full clinical history, detailed examination and review of available investigations, timing of referrals, age at diagnosis, gender, main symptom and its duration, location of primary, disease extent, pain assessment, treatment given, period of hospital stay. Patients of all types of advanced malignancies irrespective of their primaries were included in the study. During the study period, the only available opioids were slow-release morphine -30mg (SRM-30), transdermal fentanyl patches -50 g gm/h (TDF-50) and different concentrations of oral and parenteral tramadol. Patients were managed following the WHO analgesic ladder for pain control [1]. To rate the severity of pain, we routinely use a simple four-category verbal rating scale (none, mild, moderate and severe). Due to the limited opioid options and the unavailability of any form of immediate-release strong opioids in our center, we had to use combinations of the available opioids for titration. Primary end point was determination of main causes of hospital admissions for palliative care, while secondary end points were the principal lines of palliative treatment and average length of hospital stay. Statistical methods were performed using the Statistical Package for the Social Sciences (SPSS), version 10.0 (SPSS Inc., Chicago, IL).

Results

In the group of 70 patients evaluated in our study, there were 24 (34.3%) males and 46 (65.7%) females with a median age of 50 years (range 27-76 years). Average length of hospital admission was 6 days (1-22 days), while median causes of admission were 3 (1-5). Main causes of palliative cancer care admissions were pain (65.7%), vomiting (31.4%), dehydration (22.9%), fever (22.9%) and infection (20%). Other causes included constipation, anemia, respiratory distress, thromboembolic diseases, electrolytes disturbance, bleeding, ascities, renal failure and convulsions as shown in Table (2).

Table (3) showed that 85.7% of patients had pain on presentation; with 11.4% of cases received weak opioids (tramadol 200mg/day) while 14.3% of patients received fentanyl patches and the rest had controlled pain on morphine sulfate tablets. Thirty six patients (51.3%) had control of pain with <240mg of morphine sulfate tablets. Table (4) showed the different lines of treatment for different causes of admission with the median periods of admission. Longer median days of admissions were seen in cases with dyspnea, renal failure, fever and infection that ranged between 8 to 12 days. While shorter periods of admissions occurred with cases of uncontrolled pain, vomiting, dehydration and constipation that ranged from 3 to 5 days.

Table (1): Characteristics of cancer patients for palliative care unit admissions.

Characteristics	No.
Median age	50 years (27-76 years)
Gender	
Male	24 (34.3%)
Female	46 (65.7%)
Period from 1 st presentation till palliative care admission	28 days (0-90 days)
Average length of hospital stay	6 days (1-22 days)
Median number of causes of admissions	3 (1-5)

Table (2): Causes of admissions in palliative cancer care unit.

Main Cause of admission	Incidence	
Pain	46	65.7%
Vomiting	22	31.4%
Dehydration	16	22.9%
Fever	16	22.9%
Infection	14	20%
Constipation	10	14.3%
Anemia	10	14.3%
Respiratory distress	8	11.4%
Thrombo-embolic disease	8	11.4%
Bleeding	6	8.6%
Electrolytes disturbances	6	8.6%
Jaundice	6	8.6%
Ascities	6	8.6%
Renal failure	4	5.7%
convulsions	2	2.9%

Table (3): Main lines of pain treatment for inpatient-palliative care unit.

Pain treatment	Dose/day	Number of patients	
Non opioids		10	14.3%
Tramadol	100mg BID	8	11.4%
Fentanyl (duragesic)	100-200 ug/72 hours	10	14.3%
Morphine sulfate tablet 30mg	60mg (1tab BID)	12	17.1%
	120mg (2tabs BID)	12	17.1%
	180mg (3tabs BID)	4	5.7%
	240mg (4tabs BID)	8	11.4%
	› 300mg (› 5tabs BID)	6	8.6%

Table (4): Main lines of treatment and median days of admission for inpatient-palliative care unit.

Medical condition	Treatment	Patient numbers		Median days of admission
Pain (70 cases)	Tramadol	8	11.4%	3 (2-7 days)
	Strong opioids	52	74.3%	4 (1-9 days)
Vomiting (22 cases)	Metoclopramide IM/IV	10	14.3%	4 (2-19 days)
	Corticosteroids IM/IV	6	8.6%	3 (1-15 days)
	Haloperidol SC	6	8.6%	4 (2-10 days)
Dehydration (16 cases)	IV fluids	16	22.9%	5 (2-9 days)
Fever (16 cases)	IV/IM antipyretics	6	8.6%	7 (5-19 days)
	Oral antipyretics	10	14.3%	9 (6-22 days)
Infection (14 cases)	IV/IM antibiotics	10	14.3%	10 (8-15 days)
	Oral antibiotics	4	5.7%	11 (7-22 days)
Constipation (10 cases)	Oral laxatives	6	8.6%	7 (5-10 days)
	Oral+local laxatives	4	5.7%	5 (3-9 days)
Dyspnea (8 cases)	O_2	6	8.6%	12 (7-20 days)
Anaemia (10 cases)	Blood transfusion	8	11.4%	4 (2-8 days)
Ascities (6 cases)	Tapping	4	5.7%	3 (1-5 days)
Renal failure (4 cases)	Dialysis	2	2.9%	8 (5-11 days)
Thrombosis (8 cases)	IV heparin	6	8.6%	7 (3-13 days)
Disturbed electrolytes (6 cases)	Correction	6	8.6%	6 (3-9 days)

Discussion

Current study showed that pain was the main cause of admission that constituted 65.7% of cases. Many cases with uncontrolled pain were admitted for good assessment and control of pain due to unavailability of immediate release morphine in most of Egyptian palliative centers, added to that the restrictive regulations for strong opioids' prescriptions which reserve the strong opioids for admitted inpatients cases only. Pain from cancer is a major health care problem [2]. Thirty percent of patients with cancer have pain at the time of diagnosis, and 65 to 85 percent have pain when their disease is advanced [2,3]. The impact of cancer pain is magnified by the interaction of pain and its treatments with other common cancer symptoms: Fatigue, weakness, dyspnea, nausea, constipation, and impaired cognition [3].

Tramadol, a centrally acting analgesic that binds to g-opioid receptors and inhibits the reuptake of norepinephrine and serotonin, is used for treatment of moderate to moderately severe pain [4]. The adverse effects of tramadol include nausea, dizziness, constipation, sedation, and headache. Strong opioids commonly prescribed for the relief of moderate-to-severe cancer pain include morphine, oxycodone, hydromorphone, and fentanyl [5]. But due to shortage of immediate relase morphine preparation in most of palliative Egyptian centers; Controlled-release formulations of morphine for oral administration at 12-hour intervals have been the mainstay of the control of chronic cancer pain. It has advantage of their easy administration and titration [6]. Fentanyl delivered by means of transdermal patches can control chronic cancer pain for 72 hours and is particularly useful in patients with stable pain who cannot take oral medications [7].

Around 20% of cases received >240mg of oral morphine and 14.3% received transdermal fentanyl 100-200ug/72 hours. There is no one optimal or maximal dose of a step 3 strong opioid analgesic drug [8]. The appropriate dose is one that relieves a patient's pain throughout its dosing interval without causing unmanageable side effects.

Ninety percent of patients say they would like to die at home. However, approximately 53% of all patients die in the hospital, and 24% die in a nursing home [9]. Current study showed that the median number of admission causes was three. However, the most common causes were uncon-

trolled pain, vomiting, dehydration, fever and infection that could be managed at home with avoidance of unnecessary hospital admissions. Cancer treatment is increasingly being provided in outpatient settings and in patients' homes. The shift from inpatient to outpatient care results in greater caregiving responsibilities [10]. Family caregivers must play a greater role in assisting patients with the management of disease and treatment-related side effects [11]. But many family caregivers lack education about pain assessment and management and have misconceptions about pain. Family caregivers are at risk of burnout because of physical fatigue and psychological stress; they feel ill prepared for the administration of pain medication [12]. These data support the importance of increasing the knowledge regarding cancer pain management of caregivers of cancer patients receiving homecare. Education may be an effective tool for increasing caregiver knowledge and decreasing concerns regarding cancer pain management.

Nearly one third of cases had vomiting which required several lines of antiemetics. A dopamine antagonist, such as haloperidol, which is the most potent of dopamine receptor blockers, [13] and metoclopramide. Metoclopramide has a dopamine D_2 antagonist effect, muscarinic activity, and is a 5-HT_4 receptor agonist, [13] it stimulates peristalsis in the upper gut and aids in impaired gastric emptying secondary to opioids.

Antihistamines, such as cyclizine and promethazine, and anticholinergics, particularly hyoscine, also exhibit antiemetic effects. An advantage of these drugs is that some can be administered with a transdermal patch as well as orally or parenterally [14]. Corticosteroids are useful in heightening the effects of antiemetic agents [15]. Normal saline is administered for treatment of dehydration at a rate of 200 to 500ml per hour, depending on the baseline level of dehydration and renal function, the patient's cardiovascular status, the degree of mental impairment, and the severity of the hypercalcemia. These factors must be assessed with the use of careful clinical monitoring for physical findings that are consistent with fluid overload. Current study showed that median period from first presentation to palliative care admission was 28 days that matched other studies [16,17]. Average length of hospital stay was 6 days. However, longer median days of admissions were seen in cases with dyspnea, renal failure, fever and infection that ranged between 8 to 12 days. These patients may actually need hospital admissions. While short periods of admissions occurred with cases of uncontrolled pain, vomiting, dehydration and constipation that ranged from 3 to 5 days, which represent cases that could be managed at home. Improved palliative and end-of-life care has included institutional changes, educational activities for the variety of disciplines involved in care either professionals or caregivers, research initiatives to improve care, and the development of national guidelines for assessing quality cancer care. Attending local and national presentations on palliative care to increase clinicians' knowledge is an essential initial step. This can occur through local presentations, national meetings, online courses, and individual reading and exploration.

Conclusions:

Pain was the main cause of admission to hospital-based inpatient palliative care unit in our setting. In Egypt, many barriers exist to cancer pain control including immediate release morphine unavailability and restrictive regulations. An immediate action is needed to overcome these barriers. Many of the listed problems could be managed at home to avoid unnecessary hospitalization. Our results provide provisional guidance for future palliative care development in our center and similar settings in Egypt.

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