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Symptom Expression in the Last Seven Days of Life Among Cancer Patients Admitted to Acute Palliative Care

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ABSTRACT

Introduction: The study was to analyse the symptom burden and characteristics of advanced cancer patients who died in the acute palliative care unit. Based on the determined characteristics from the present study.

Methods: Evaluated all of the advanced cancer patients' medical records that were admitted to King Abdulaziz Medical City's acute palliative care unit between January 2022 and December 2022 in retrospect. The Edmonton Symptom Assessment System (ESAS) was used to gather basic features and symptom burden from nursing professionals with palliative care training. The average severity of nine symptoms is rated on the ESAS, a validated numerical rating system, from 0 (absence) to 10 (worst possible).

Results: The data of 217 patients were collected 160 of them passed away in the palliative care unit included in the study. If the patient scored more than 4 in any day during any of the last 7 days. Pain 124 (77.4%), tiredness 155 (96.9%), drowsiness 107 (66.9%), nausea 46 (28.7%), loss of appetite 157 (96.1%), SOB 118 (73.8%), depression 119 (74.4%), anxiety 127 (79.4%), and well-being 160 (100%).

Conclusion: Patients have been found to have a high prevalence of symptoms that need intervention as they are approaching death. Drowsiness, loss of appetite, and shortness of breath have shown an increase in severity, but pain intensity hasn’t increased, although this can be explained by being admitted under PCU, where pain control can be intensely managed.

Key words: Palliative Care Unit; Edmonton Symptom Assessment Scale; Advanced cancer

INTRODUCTION

Cancer is one of the primary causes of morbidity and death globally. A considerable number of patients suffer from a considerable symptom load, especially in the later and terminal phases of the illness (15, 21). In the last phase of illness, the goals of care change from curative to comfort measures, and the concepts of palliative care are used to relieve suffering and improve quality of life (17, 22). The last days of life, particularly the last 7 days, are a crucial phase of rapid clinical decline and increasing symptom burden. Studies consistently demonstrate that the incidence and severity of symptoms are much higher in cancer patients hospitalized in urgent palliative care units (1, 3). The common symptoms include pain, fatigue, dyspnea, anorexia, delirium, and psychological distress, which can be highly damaging to patients' comfort and dignity (4, 5, 23). The majority of patients experienced pain and fatigue, but dyspnea and delirium were particularly associated with the near-death phase (6, 12). The conclusion is to grasp the complexity of symptom load in terminal cancer patients, systematic and complete assessment is required. Tools such as the Edmonton Symptom Assessment System (ESAS) have been widely used to measure symptom intensity and monitor improvement over time, allowing clinicians to more carefully tailor therapy (13, 24). These tools notwithstanding, failure to adequately identify and treat symptoms is still widespread in clinical practice, especially in the acute care situation, when the focus may still be on disease-specific therapies (16, 25). Integrating palliative care early into routine cancer therapy has been demonstrated to dramatically enhance symptom management, patient satisfaction, and overall quality of life (8, 9). However, research shows that many patients are referred to palliative care services late in the trajectory of their disease, typically within days of death, which limits the potential advantages of prompt symptom control (7, 26). This delay highlights the need for studying symptom trajectories in the final days of life to better predict patient requirements and optimize care delivery. Another clinical problem is to recognize accurately the dying period. Uncertainty about prognosis typically results in delays in decision-making and may lead to actions that may be unnecessary and inconsistent with the aims of care (11, 27).

Identifying patterns of symptom presentation in the last days of life might offer important insights to doctors to help guide appropriate therapies and enhance end-of-life care planning. In patients with terminal cancer, the whole suffering includes psychological and existential issues as well as physical symptoms.Commonly included are anxiety, despair, and spiritual agony, which, if not managed, might worsen medical difficulties (2, 28). Therefore, a multidisciplinary approach comprising medical, psychosocial and supportive care is needed for holistic end of life management.

The burden of symptoms and rapid change in clinical status during the last week of life suggest a need for further research to more fully characterize symptom presentation during this time. Understanding these trends would not only improve clinical decision-making but also help improve the quality of care offered to patients in acute palliative care settings.

LITERATURE REVIEW

Symptom burden in patients with advanced cancer is a key area of attention for palliative care, especially in the last days of life. Studies have shown that the frequency and intensity of symptoms in patients hospitalized in acute palliative care units increase significantly as death approaches (1, 3). This time, and in particular the last week of life, is marked by a complex interplay of medical and psychological symptoms that require extensive management. Symptom expression in the last week of life in cancer patients was studied by Hui et al. (1). Symptoms such as fatigue, drowsiness, anorexia and dyspnea rose considerably in severity as patients approached death, the investigators found. Longitudinal investigations have shown that performance status declines gradually in the last year of life, with a sharp fall in the last weeks, and symptoms become more intense (3). These data indicate the steady decrease of terminal deterioration in cancer patients.

The total incidence of symptoms in people with advanced cancer is substantial, with systematic research showing pain, fatigue and psychological distress are amongst the most prevalent (4, 5). Pain is the most common symptom affecting patients as a single symptom, which often needs sophisticated management techniques, especially during breakthrough bouts of pain (10). Dyspnea is a common and painful symptom that is often present in the latter days to weeks of life, with its course changing depending on the underlying disease but often increasing as death approaches (6).

Besides physical symptoms, psychological and existential discomfort are also quite prevalent in the final period. Anxiety, despair, and delirium commonly co-exist with physical symptoms, significantly complicating patient treatment (2, 12). Delirium, in particular, has been related to poor prognosis and increased caregiver anxiety; thus, detection and management are essential in acute palliative wards (12). The Edmonton Symptom Assessment System (ESAS) is an evidence-based tool that is commonly used to quantify symptom burden among populations undergoing palliative care treatment (13). The tool enables the physician to assess symptom trajectories and adjust treatment modalities based on such assessments. Prior studies have shown that proper assessment of symptoms leads to better health outcomes and end-of-life care for these patients (16).

The integration of palliative care early on during the practice of oncology has been shown to result in better symptom control, quality of life, and survival in certain circumstances (8, 9). Despite such benefits, numerous patients tend to be referred late to palliative care, usually towards the end of their lives when the symptom burden is high (7). Prognostic estimate in end-of-life care: a challenge. Physicians tend to overestimate survival among cancer patients at the end of life, which results in a delay in appropriate palliative care measures (11). The uncertainty simply emphasizes the necessity for ongoing symptom observation and not merely predicting time of death. The World Health Organization (WHO) has published recommendations for symptom control in palliative care, recognizing the importance of this aspect (15). Over the last several years, a number of programs have been launched to include palliative care in normal cancer care (17).

RESULT

We documented the trajectory of Edmonton symptoms Assessment Scale (Pain , Tiredness, drowsiness, Nausea ,Appetite loss, SOB, Depression , Anxiety and wellbeing) in patients admitted to PCU in the last seven days of life and included 160 patients with advanced cancer admitted to our palliative care unit, with a mean age of 67 years (range, 16-100 years). There were 84 women, and 76 men. 126 of the totals was married and 4 divorced, 12 was single, widowed 17and 1 unknown. Comorbidity disease was common among our patient, 106 presents with past history of comorbidity disease. Only 4 patients of totals 106 patient complain of five comorbidity disease and 32 patients complain of one comorbidity disease. 73 patients complain of HTN and DM, 13 patients complain of DLP and 10 patients complain of CKD, 24 patients complain of heart disease, Stroke present with 9 patient, 5 patients complain of BPH and 4 patients complin of DVT. **Table 1, Figure 1**

Table 1: Demographic Of Participants In Study

Age (Years) Median	**67 (Range: 16-100)**	
Gender	Male	76 (47.5%)
	Female	84 (52.5%)
Marital Status	Single	12 (7.5%)
	Married	126 (78.8%)
	Discovered	4 (2.5%)
	Widowed	17 (10.6%)
	Unknown	1 (0.6%)

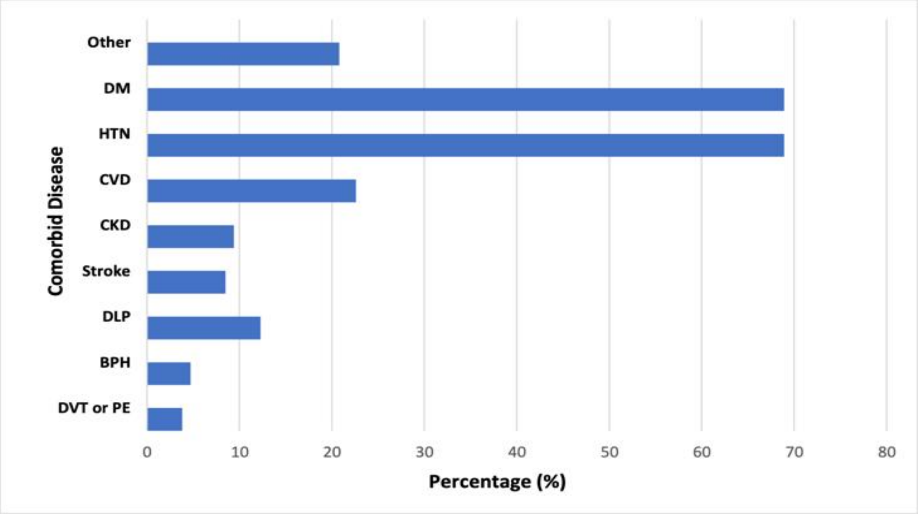

Figure 1: Comorbidity Disease in Cancer Patients

Table 2 shows the frequency of cancer sites and characteristics of studied patients. The six most prevalent cancer sites were Colon 34 (21.3%), Pancreatic and cholangiocarcinoma 25 (15.6 %), Gynecological 14 (8.8%), liver cancer 14 (8.8%), breast 13 (8.1%), GBM 12(7.5%) and lungs 7 (4.4 %), which represent 65.1% of cancer in the studied patient . 105 of the total patients in the study transfer with metastatic cancer and only 47 patient no metastasis.

Table 2: Common Cancer Sites

Metastatic	**Yes: 107 (66.9%)**	**No: 53 (33.1%)**
Diagnosis	Colon Cancer	34
	Pancreatic Cancer	17
	Liver Cancer	14
	Gynecological	14
	Cholangiocarcinoma	8
	Hematological	8
	Lung Cancer	7
	Sarcomas	5
	Thyroid Cancer	4
	Prostate Cancer	4
Others		20

Figure 2 Shows Studied patients reported symptoms if the patient scored more than 4 in any day during any of the last 7 days. Pain 124 (77.4%), tiredness 155 (96.9%), drowsiness 107 (66.9%), nausea 46 (28.7%), loss of appetite 157(96.1%), SOB 118(73.8%), Depression 119 (74.4%), anxiety 127(79.4%) and wellbeing 160 (100%).

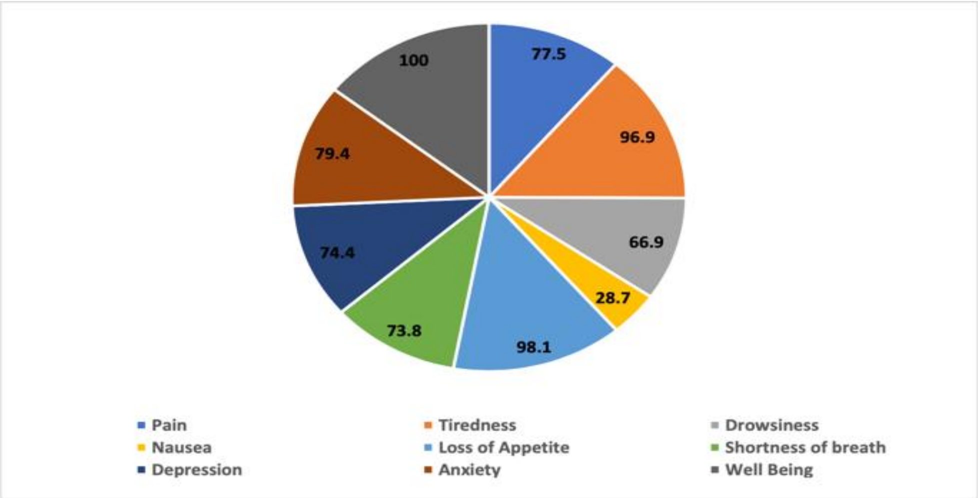

Figure 2: Reported Symptoms in Cancer Patients

As represents in the following **Table 3**, we compare ESAS between day 7and day 1 before death and the result was pain (P =0.748), tiredness (P=0.027), drowsiness (P =0.034), Nausea (P =0.062), Loss of appetite (P = 0.021), Shortness of breath (P =0.00), Depression (P = 0.002), Anxiety (P = 0.001) and well-being (P =0.391).

Table 3: ESAS Score And Difference Between Day 7and Day1 Before Passed Away

	Day 7 before death (SD)	**Day 1 before death (SD)**	**P Value**
Pain	2.07 (1.9)	2.15 (2.1)	0.748
Tiredness	3.89 (2.67)	4.66 (3.2)	0.027
Drowsiness	1.8 (2.22)	2.4 (2.99)	0.034
Nausea	0.39 (1.2)	0.69 (1.7)	0.062
Loss of Appetite	4.25 (3.2)	5.18 (3.8)	0.021
Shortness of Breath	1.54 (2.3)	3.15 (3.6)	0
Depression	2.59 (2.3)	1.8 (2.2)	0.002
Anxiety	2.26 (2.3)	1.47 (1.8)	0.001
Well-Being	4.77 (1.5)	4.59 (2.2)	0.391

In addition, by compare symptoms between males and females, show studied patients' pain (P =0.5), drowsiness (P =0.02), Nausea (P =0.009), Loss of appetite (P = 0.014), Shortness of breath (P =0.127), Depression (P = 0.068), Anxiety (P = 0.021) and well-being (P =0.04) as showing the following **Table 4.**

Table 4:- T-test compare between male and female with symptom expression

	Males (SD)	**Females (SD)**	**P Value**

Pain	2.1 (1)	2.2 (1.2)	0.5
Drowsiness	2 (1.1)	1.6 (1.2)	0.02
Nausea	0.79 (0.8)	0.48 (0.6)	0.009
Loss of Appetite	4.2 (1.7)	4.9 (1.7)	0.014
Shortness of Breath	1.8 (1.4)	2.3 (2)	0.127
Depression	2.4 (0.9)	2 (1.3)	0.068
Anxiety	2.1 (1.2)	1.7 (1.1)	0.021
Well-Being	4.77 (0.6)	4.59 (0.8)	0.04

DISCUSSION

We characterized the symptom load and trajectory in detail throughout the last seven days of life for patients with advanced cancer admitted to an urgent palliative care unit. Results show a significant and continuous incidence of multidimensional symptom distress with fatigue, loss of appetite, and reduced well-being being practically universal. Also, a large psychological load, including worry and despair is found. These findings support the known fact that the end of life is characterized by complicated multidomain pain, which requires extensive palliative care measures.

One of the most interesting aspects of this study is the fact that the symptoms of patients who are approaching death are extremely frequent. This final stage encompassed pain, fatigue, sleepiness, nausea, loss of appetite, shortness of breath, depression, anxiety, the overall mood, and the level of satisfaction. Such an alarming situation shows more strikingly the importance of strong proactive symptom management strategies that can improve the quality of life for these unprotected patients.

Symptoms such as fatigue (96.9%), loss of appetite (96.1%), and global impairment of well-being (100%) are quite prevalent and are consistent with earlier literature that suggests that the terminal phase of cancer is one of systemic decline and not isolated symptoms (3, 30). Fatigue and anorexia are intimately associated with cancer cachexia and inflammatory processes, which tend to aggravate in proximity to death (26; 30). The high prevalence of dyspnea (73.8%) and pain (77.4%) further supports the burden of advanced illness and is consistent with recent research in acute palliative care settings (3, 28).

Importantly, this study indicates significant changes in symptom severity in the last week of life. Tiredness, sleepiness, lack of appetite, dyspnea, sadness, and anxiety showed a statistically significant deterioration. The results show a gradual increase in the physical symptoms and psychological suffering as death approaches. Similar trajectories have been observed in long-term palliative care studies, with symptoms tending to develop rapidly in the last days, notably exhaustion, dyspnea, and delirium-related signs (28, 32). While ESAS score analysis has shown that on days 7 and 1 before death, there are many differences in certain symptoms, these differences are specific. This points to the ever-changing features among patients close to the end of their lives and therefore suggests that regular assessment and immediate response to signs and symptoms that are getting worse are the solution.

As for the symptoms studied, there is unique information that whatever got worse as a patient was nearing the end of life seemed to remain stable as severe pain despite the given condition. This general decrease in pain and well-being ratings was not seen with some stability in scores that may be explained by successful measures for symptom management, such as opioid titration and multidisciplinary care interventions, which are the cornerstone of specialist palliative care (33). To highlight this issue, this amazing situation reflects the fact that our pain-reduction interventions are among the most intensive in the palliative care setting, and for these patients, pain levels are at their lowest. Although this is the case, further investigation is required to find out the extent to which pain management methods are effective in palliative care centers and what role they play in improving the overall health outcomes of the patients.

The high frequency of psychological problems in this sample cohort is also worth mentioning. The most frequent psychological symptoms were anxiety (79.4%) and sadness (74.4%). Both showed a gradual unfavorable influence on their general health status over the research period. The study highlights the need of integrating psychological and spiritual care in the end-of-life treatment of terminally sick cancer patients. Psychological stresses are underdiagnosed and undertreated in dying cancer patients (34,35) with a huge impact on the quality of life of these patients and on the burden on their caregivers.

The demographic and clinical aspects of the population sample are also important to interpret the symptom load reported. First, the patient sample had a high presence of metastasis, which was consistent with prior research that showed the link between advanced-stage cancer and increased symptoms (27). Second, the comorbidities in the sample, especially hypertension, diabetes mellitus, and cardiovascular diseases, may lead to the escalation of the symptom burden, since multimorbidity is found to contribute to poor symptom management (27, 37).

The presentation of symptoms was gender-dependent, with substantial variations in the incidence of tiredness, nausea, anorexia, anxiety, and well-being. Also, a detailed investigation of symptoms by men and women patients demonstrated different results that manifested in symptoms such as pain, drowsiness, nausea or loss of appetite, depression, anxiety, and well-being. The aforesaid findings are consistent with the increasing recognition of gender variations in the perception of symptoms by patients and can be explained by gender-specific biological, psychological, and social variables (38, 39). These gender-based variations in symptom perception highlight the need for palliative care designs that have an adaptability component and incorporate individual traits and preferences in one or many cases.

From the perspective of the clinical practice, the results emphasize the necessity of systematic evaluation of symptomology based on standardized tools such as the Edmonton Symptom Assessment System (ESAS). The dynamic change of symptom severity implies that the frequent evaluation of patients' condition during the last days of their lives is required. It might help to detect some issues early, which could make possible the provision of interventions and reduce discomfort of patients.

Arguably, this research is of considerable importance as it enables us to improve the knowledge base regarding the symptom load and individual features of end-stage cancer patients undergoing palliative treatment. It irrefutably focuses on the time-sensitive and comprehensive nature of palliative care provisions as the key to quality for patients at the end-of-life stages. On the one hand, it draws attention to the lack of clear-cut domains with evidence-based guidelines aimed at symptom management and its effect in palliative care; however, it gives a glimpse of the demand for continuing research in that area in order to develop strategies with a high level of accuracy and effectiveness. Interdisciplinary cooperation among health professionals to offer comprehensive care that involves patients and families as an integral part of health care is the other highlight. Nurses and doctors need to be able to notice and face up to the broad range of emotions involved in the terminal illness experience of a patient. They have to work on maintaining the quality of life, dignity, and comfort of dying patients.

STRENGTH AND WEAKNESS

There are multiple strengths of the study. For instance, it focuses on the analysis of the last days of people's lives, which is a crucial period but underexplored topic at the same time. Besides, the authors used ESAS as the basis of the study. At the same time, there are certain weaknesses. First, it should be mentioned that the study was performed in only one palliative care ward. Second, even though ESAS allows assessing the condition of patients, this method cannot describe their feelings precisely because of cognitive problems.

CONFLICT

No conflict of interest

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CONCLUSION

In cancer patients admitted to PCU, we recorded the frequency, severity, and predictors of different symptoms. We also found that the burden of symptoms was rising in patients who were close to death. In light of the growing interest in patient-reported outcomes and quality of care indicators, our research offers insights into which symptoms are effectively manageable with the latest supportive care techniques and which ones are not. To enhance the quality of life for patients in their final days of life, further research is desperately needed.

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