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Azadeh Azizollahi[1] and Mamak Tahmasebi[1]

[1]Department of Palliative Medicine, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, Islamic Republic of Iran (Correspondence to: A. Azizollahi: azadehazizollahi@gmail.com)

Abstract

Background: Symptoms and their severity are among the main causes of suffering in patients with advanced cancer. Although knowledge of symptom prevalence is important for clinical practice, little is known about the frequency of symptoms in advanced cancer patients.

Aims: To identify the most frequent cancer-related symptoms in a palliative care unit in the Islamic Republic of Iran.

Methods: A cross-sectional study was conducted on patients with advanced cancer admitted to the Palliative Care Unit at Imam Khomeini Hospital, Tehran, between March 2019 and March 2020. We collected data from 387 patients' records, including age, sex, cancer type, reported symptoms, and pain intensity. Pain intensity was measured using a numeric rating scale of no pain (0), mild (1 or 2), moderate (3–6), and severe (7–10).

Results: Gastric (16.02%), breast (13.95%), colon (11.60%), ovarian (8.79%), and lung (5.94%) were the most frequent cancers. Patients reported 2582 symptoms. The most frequent symptoms were pain (91.2%), anorexia (86.7%), oral thrush (69.3%), nausea (55.6%), constipation (53.7%), fatigue (45.5%), and vomiting (40.1%). Based on pain intensity measurement, 72.2% of patients reported severe, 17.0% moderate, and 10.8% mild pain. Pain intensity and symptom frequency did not differ significantly by age, sex, and type of cancer.

Conclusion: Cancer patients reported multiple symptoms. In the Islamic Republic of Iran, with

limited palliative care services, these findings can guide palliative care centre doctors and nurses in symptom management.

Keywords: palliative care, cancer, symptom, pain, Iran

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Introduction

Palliative care emphasizes the management of symptoms, to improve and maintain the best possible quality of life for patients with advanced disease (1). Recently, more attention has been given to introducing palliative care for patients with chronic, life-threatening illnesses, but its primary focus has been on patients with advanced cancer (2). In palliative care, the needs of patients and their families , including psychosocial, physical and spiritual needs, are taken care of by a professional team (3). Patients with advanced cancer have acute complications that lead to multiple symptoms and functional decline at the end-of-life (4). Many different symptoms are reported by patients with advanced cancer, although most of these symptoms can be effectively managed (5, 6). The most common physical or mental symptoms are pain, anorexia, fatigue, shortness of breath, anxiety, and nausea and vomiting (4–10). Complications increase the suffering of patients and their families. For example, breathlessness, which is a common symptom that becomes increasingly prevalent as disease progresses (11), can be frightening for patients and families (12). Nausea and vomiting, if poorly controlled, can increase the fear of death from dehydration or starvation for patients and their families (13). Therefore, understanding symptom patterns and good management in advanced cancer patients could be associated with improved quality of life of, and treatment compliance by, patients and their families (13).

In developed countries, palliative care services are well-established, and most patients who

need palliative care have adequate access to the appropriate network. In contrast, in most developing countries, palliative care services are limited or nonexistent (14–16). A report published by WHO in 2014 classifies the Islamic Republic of Iran as a country with isolated palliative care provision that is characterized by: “development of palliative care that is patchy in scope and not well supported; sourcing of funding that is often heavily donor-dependent; limited availability of morphine; and a small number of hospice–palliative care services that are often home-based in nature and relatively limited to the size of the population” (14). In the Islamic Republic of Iran, supportive and palliative care centres are limited and there is no integrated system to manage and standardize the structures, operational processes, and training protocols for supportive and palliative care (17). There is a lack of evidence on the symptom patterns in patients with advanced cancer admitted to Iranian palliative care units. Better characterization of symptoms in advanced cancer patients in developing countries will be useful for doctors and nurses for symptom management in palliative care centres (18). Therefore, identification of symptom clusters in palliative care is required for this population.

This study aimed to investigate the most frequent types of cancer-related symptoms in patients with advanced cancer in a palliative care centre in the Islamic Republic of Iran.

Methods

In this cross-sectional study, participants were advanced cancer patients admitted to the Palliative Care Unit at Imam Khomeini Hospital in Tehran, Islamic Republic of Iran between March 2019 and March 2020. Inclusion criteria were: (1) patients with advanced cancer if the disease was incurable and life expectancy was

At the start of specialized palliative care in our setting, patients are regularly requested by nurses to report their symptoms to complete their medical records. Medical records from eligible patients were assessed and the following information was collected and recorded in a checklist: age, sex, cancer site and symptoms. Patients were classified into 5 age groups: 70 years. Recorded cancer site was colon, rectum, anus, stomach, pancreas, liver, oesophagus, gallbladder, intrahepatic bile ducts, ampulla of Vater, lung, pleural mesothelioma, parotid gland, thyroid, tongue, cheek, larynx, sinus, nasopharynx, head and neck, breast, ovary, uterus, cervix, vulva, vagina, prostate, kidney, testis, bladder, adrenal gland, pelvic sarcoma, lymph nodes, bone, skin, and/or brain. Recorded symptoms were pain, nausea, vomiting, constipation, anorexia, diarrhoea, oral thrush, cough, productive cough, breathlessness, urinary frequency, urinary retention, urine discoloration, abnormal vaginal discharge, dysuria, urinary incontinence, fatigue, anxiety depression, confusion, drowsiness, hallucination, bedsores, and infected wound. The severity of symptoms was assessed for pain only and patients were requested by nurses to report intensity using a 10-point numeric rating scale from 0 (no pain) to 10 (worst pain). The reported score was recorded in the patients’ medical records. We classified pain intensity as no pain (score 0), mild (1 or 2), moderate (3–6), and severe (7–10) pain. Anxiety and depression were assessed by a single question about the past week as follows: “over the past week have you been feeling anxious or worried about your illness or treatment?”, “over the

past week have you been feeling depressed?". Confusion and drowsiness were assessed by nurses by observing the patients when completing their records. If the patient was not able to respond to the questions, the patient's companion was asked to respond.

Collected data were analysed using SPSS for Windows version 24 (SPSS, Inc., Chicago, IL, USA). Data were reported as mean (standard deviation), median (interquartile range), or number (%) as appropriate. A $\chi 2$ test compared the frequency of pain intensity among patients' age and sex groups. The level of significance was P

Results

We included 387 patients with advanced cancer admitted to our palliative care unit, with a mean age of 54.8 years (range, 20–91 years). There were 249 women, with a mean age of 52.9 (13.9) years and 138 men, with a mean age of 58.1 (13.4) years. Table 1 shows the frequency of cancer sites and characteristics of studied patients. The five most prevalent cancer sites were stomach (16.02%), breast (13.95%), colon (11.63%), ovaries (8.79%) and lungs (5.94%), which represented 56.33% of cancers in the studied patients (Figure 1A). The most common sites of cancer in women were breast (20.48%), ovaries (13.65%), stomach (12.85%), colon (8.84%) and uterus (7.63%), which represented 63.45% of cancers (Figure 1B). The most common sites of cancer in men were stomach (21.74%), colon (19.67%), prostate (11.59%), lungs (10.87) and oesophagus (4.35%), which represented 68.22% of cancers (Figure 1C).

Studied patients reported symptoms. Pain (91.22%), anorexia (76.74%), oral thrush (69.25%), nausea (55.81%), and constipation (53.75%) were the most frequently reported symptoms. Figure 2 shows the frequency of symptoms in patients by cancer site, and the table below the figure shows the total number of patients, frequency of symptoms, and the mean number of symptoms occurring at each cancer site. The most frequently reported symptoms in the 5 most prevalent cancers were as follows: In 62 patients with gastric cancer: pain (87.09%), nausea (82.26%), anorexia (75.81%), oral thrush (67.74%) and constipation (59.68%). In 54 patients with breast cancer: pain (98.15%), anorexia (87.04%), oral thrush (81.48%), nausea (70.37%) and constipation (61.11%). In 45 patients with colon cancer: pain (88.89%), oral thrush (75.55%), anorexia (73.33%), fatigue (57.78%) and constipation (51.11%). In 34 patients with ovarian cancer: pain (94.11%), anorexia (76.47%), nausea (58.82%), oral thrush (52.94%) and vomiting (47.06%). In 23 patients with lung cancer: pain (95.65%), anorexia (82.61%), fatigue (65.21%), oral thrush (73.91%) and breathlessness (60.87%).

Thirty-four patients (8.78%) reported 0 scores for pain, and 353 patients (91.22%) reported pain scores > 0. Pain intensity was severe in 255 patients (72.2%), moderate in 60 (17.0%) and mild in 38 (10.8%). Table 2 presents the pain intensity and symptom frequency in patients by age group and sex. Pain intensity (P = 0.552) and symptom frequency (P = 0.956) were not significantly different between patients in the different age groups. According to sex, 82.6% of men and 81.1% of women reported > 4 symptoms (P = 0.718). Also, 61.6% of men and 68.3% of women reported severe pain intensity (P = 0.249).

Comparison of pain intensity and symptom frequency according to cancer type is presented in Table 3
. Pain intensity was not significantly different between patients with different cancer types (P = 0.574). Also, symptom frequency was not significantly different between patients with different cancer types (P = 0.083).

Discussion

This study summarized the prevalence of symptoms in a sample of Iranian patients with advanced cancer who needed palliative care. Pain was the most frequent symptom, followed by anorexia, oral thrush, nausea, constipation, fatigue and vomiting, which were present in > 40% of patients. The highest total number of symptoms was reported by patients with gastric, breast, colon, ovarian and lung cancers. Therefore, primary interventions on palliative care should focus more on these symptoms.

In this study, admission to palliative care of patients with gastric, breast, colon, and lung cancers was more frequent. This range of cancer sites is in line with the estimated incidence rate of cancer in 2020, which showed more breast, prostate, gastric, colorectal and lung cancers in the Iranian population (19). Similarly, lung, colorectal, breast, pancreas and prostate were the most common cancer diagnoses among patients referred to palliative care centres in Denmark, Spain and Sweden (7, 9). Ovarian cancer was the second most frequent type in women admitted to our palliative care unit, although it is not among the most common cancers in women in the Islamic Republic of Iran and worldwide. The high admission rate of patients with ovarian cancer shows that these patients experienced frequent and more severe symptoms. In addition, most of our studied patients were aged > 65 years, which is similar to previous studies (4, 6–10), and worldwide hospice palliative care alliance annual reports show greater need of palliative care in older patients (20).

Sandgren et al. reported that gynaecological, colorectal, gastric, pancreatic and breast cancer in Spain, and gynaecological, breast, lung, colorectal and gastric cancer in Sweden were the most common in a sample of women hospitalized for palliative care (9). Similarly, in this study, the

most common cancers in women were breast, ovarian, gastric, colon, endometrial and pancreatic. Among Spanish men, lung, colorectal, gastric, pancreatic and urological cancers were the most common, and among Swedish men, prostatic, gastric, colorectal, lung and pancreatic cancers were the most common (9). In agreement with Sandgren et al., we found that gastric, colon, prostatic, lung and oesophageal cancers were the most common in men. Also, in our study, pancreatic and prostatic cancers were among the 10 most prevalent in men. We found that symptoms experienced in the most frequent types of cancer in patients in palliative care units were more severe and troublesome than in other types, and patients had a greater need for palliative care.

Pain was a prominent symptom recorded in 91.22% of patients in our study. This is similar to studies of Danish patients referred to palliative care centres (7) but more than the level reported in other studies (4, 21, 22). In a systematic review and meta-analysis, the pain prevalence rate was 66.4% in patients with advanced, metastatic or terminal cancer (22). The high rate of pain in the present study shows that Iranian specialists may be more willing to refer for palliative care, patients with pain than other symptoms because of the lack of inpatient facilities.

Anorexia, oral thrush, nausea, constipation, fatigue and vomiting were the most frequently reported symptoms in our study, which supported the findings of previous studies (3–10, 23–25). Fatigue, appetite loss, poor physical function, nausea, vomiting and constipation are among the most frequent and severe symptoms (3, 4, 7–10, 24). Anxiety and depression were the two leading mental health issues more frequent in our patients. Similarly, other studies have reported that mental health symptoms were more frequent in patients referred to palliative care units (25–27). Although these findings were obtained from studies in different countries and using different assessment tools by healthcare professionals or patients themselves, they show that symptoms can usually occur together and be related to each other. Therefore, understanding symptom clusters can lead to improvement of management in palliative care.

The need for palliative care in the Islamic Republic of Iran is increasing rapidly due to increased awareness of palliative care, and the continuous increase in cancer incidence, as in other developing countries (28,29). Palliative care services in Islamic Republic of Iran. are still patchy and not well supported, and few hospital provide services (14). To our knowledge, this is the first study to assess the pattern of symptoms in patients with advanced cancer who need palliative care in the Islamic Republic of Iran.

The study was conducted in the capital city and did not include all patients. Therefore, the study findings may not be considered representative of all Iranian patients with cancer. Further studies need to be conducted to establish more definite symptom patterns in palliative care patients.

Knowing the pattern of symptoms could help develop symptom management guidelines and protocols that are not available currently. Based on the symptom pattern, patients can be categorized to receive appropriate services, and knowledge about the prevalence of symptoms can help healthcare providers in managing the symptoms. Knowledge of the most prevalent symptoms can be useful for educating patients and family members regarding self-care management of symptoms.

This study had some strengths. First, we reported symptoms in patients with cancer related to the central nervous system and head and neck, which were not separately assessed in most previous studies. We showed that recorded symptoms in patients with these cancers were similar to those in other cancer patients. Second, assessed symptoms in patients' medical records were related to the time that patients were admitted to the palliative care unit, which can be helpful in understanding the main symptoms and palliative care planning.

The main limitation of this study was the lack of data about symptom severity except for pain. This could undermine planning for an optimal level of care for other symptoms. Another limitation was the retrospective method of data collection. The data were not recorded in the patients' medical records for research purposes, and it is possible that the lack of precision in recording the data led to more or less estimation of the symptoms occurring in the studied patients. Symptom assessment was done by a palliative care nurse as a routine task and recorded in the patients' records. This means that a specialized questionnaire was not used. Therefore, the reported symptoms may not have been measured with high precision. The lack of data on other variables in the medical records was another weakness of our study, which made it impossible to investigate the relationship between other variables and the frequency of symptoms.

Conclusion

Pain, anorexia, oral thrush, nausea, constipation, fatigue, vomiting, anxiety and depression were the most frequent symptoms in our patients with advanced cancer. As a developing country with limited palliative care services, these findings in the Islamic Republic of Iran can help develop a public-health-focused palliative care model. However, further studies are needed in other parts of the country to clarify the frequency and severity of symptoms using a standard questionnaire.

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Fréquence des symptômes chez les patients atteints d'un cancer avancé admis dans une unité de soins palliatifs en République islamique d'Iran

Résumé

Contexte : Les symptômes du cancer et leur gravité comptent parmi les principales causes de souffrance des patients atteints d'un cancer avancé. Bien que la connaissance de la prévalence des symptômes soit importante pour la pratique clinique, on sait peu de choses sur la fréquence des symptômes chez les patients atteints d'un cancer de stade avancé.

Objectifs : Identifier les symptômes liés au cancer les plus fréquents dans une unité de soins palliatifs en République islamique d'Iran.

Méthodes : Une étude transversale a été menée sur des patients atteints d'un cancer de stade avancé admis dans l'unité de soins palliatifs de l'hôpital Imam Khomeini de Téhéran entre mars 2019 et mars 2020. Nous avons collecté des données à partir des dossiers de 387 patients, concernant notamment l'âge, le sexe, le type de cancer, les symptômes rapportés et l'intensité de la douleur. Ce dernier paramètre a été mesuré à l'aide d'une échelle d'évaluation numérique : absence de douleur (0), douleur légère (1 ou 2), douleur modérée (3-6) et douleur sévère (7-10).

Résultats : Les cancers les plus fréquents étaient ceux de l'estomac (16,02 %), du sein (13,95 %), du côlon (11,60 %), des ovaires (8,79 %) et des poumons (5,94 %). Les patients ont signalé 2582 symptômes. Les symptômes les plus fréquents étaient la douleur (91,2 %), l'anorexie (86,7 %), la candidose buccale (69,3 %), les nausées (55,6 %), la constipation (53,7 %), la fatigue (45,5 %) et les vomissements (40,1 %). D'après la mesure de l'intensité de la douleur, 72,2 %, 17,0 % et 10,8 % des patients ont rapporté une douleur sévère, modérée et légère respectivement. L'intensité de la douleur et la fréquence des symptômes ne différaient pas significativement selon l'âge, le sexe et le type de cancer.

Conclusion : Les patients atteints de cancer ont rapporté de nombreux symptômes. Ces résultats peuvent guider les médecins et les personnels infirmiers des centres de soins palliatifs dans la gestion des symptômes en République islamique d'Iran, où les services de soins palliatifs sont limités.

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