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Research Article

Evaluation of patients receiving treatment at palliative care centers

Palyatif bakım merkezlerinde tedavi gören hastaların değerlendirilmesi



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Abstract

Introduction: Palliative care centers (PC centers) provide multidisciplinary care for patients with multiple comorbid conditions. This study aimed to assess and compare patients' diagnoses, length of hospital stays, and demographic data and coordination with home health care services.

Methods: This is a descriptive, cross-sectional and retrospective study. Patients who were hospitalized in PC centers of secondary and tertiary care hospitals between 01.08.2018 and 01.08.2018 were retrospectively assessed. Patients' demographic characteristics diagnoses of hospitalization, and length of hospital stays and centers where they received treatment were recorded.

Results: Median age of 830 patients included in the study was 79 (24-102). Out of 830 patients, 48.9% were male and 51.1% were female. Mean length of hospital stay was 14 days and median length was 8.7 (0.6-112) days. The three most common comorbid diseases followed up were malignancy (21.8%), cerebrovascular disease (15.2%) and malaise-fatigue-senility (10.7%). The group with Alzheimer's disease was the oldest patient group. The group with nutritional deficiency-malnutrition was the patient group with the longest hospital stay ($p=0.030$). The number of patients who were hospitalized for cerebrovascular diseases was the highest in secondary care centers and the number of patients who were hospitalized for malignancy was the highest in tertiary care centers. Patients hospitalized in secondary PC center were older. The hospital stays were longer in tertiary PC center. Patients receiving treatment at a tertiary PC center had a significantly higher rate of mortality. The number of patients who were discharged was lower in the tertiary PC centers. Hospitalization to a secondary PC center through home care units was significantly higher.

Conclusion: In this study, the rate and diagnoses of hospitalization and length of hospital stays were different in secondary and tertiary PC centers. Our study has made an assessment about palliative care centers at various levels of health care and can be considered as prior knowledge for other studies.

Keywords: Palliative care, alzheimer disease, neoplasms, fatigue, cerebrovascular disorders, malnutrition

Öz

Giriş: Palyatif bakım merkezleri (PBM) çoklu komorbid durumları bulunan hastalara multidisipliner bakım veren merkezlerdir. Bu çalışmamızda PBM'nde tedavi gören hastaların tanıları, yatış süreleri, demografik verileri ve evde sağlık hizmetleri ile koordinasyonunu değerlendirip karşılaştırmayı amaçladık.

Yöntem: Tanımlayıcı, kesitsel, retrospektif tipte bir çalışmadır. İkinci ve üçüncü basamak hastanelerin, PBM'de 01.08.2018 ile 01.03.2020 tarihleri arasında yatan hastalar retrospektif olarak değerlendirildi. Hastaların demografik özellikleri, yatış tanıları, yatış süreleri, tedavi gördüğü merkezler kaydedildi.

Bulgular: Çalışmaya dahil edilen 830 hastanın yaş ortancası 79 (24-102) du. Hastaların %48,9'u erkek, %51,1'i kadın hastaydı. Yatış süresi ortalaması 14, ortancası 8,7 (0,6-112) gündü. En sık takip edilen üç komorbid hastalık kanser (%21,8), serebrovasküler hastalık (%15,2) ve kırıklık, yorgunluk-yaşlılık (%10,7) idi. Alzheimer hastalığı grubu en yaşlı bakım alan hasta grubunu oluşturmaktaydı. Beslenme eksikliği-malnütrisyon en uzun süre yatan hasta grubuydu. İkinci basamak merkezde daha fazla kişi serebrovasküler hastalıklardan, üçüncü basamak PBM'de kanser hastalıklarından daha fazla kişi yatarak tedavi almıştı. İkinci basamak PBM'de yatan hastalar daha yaşlıdır. Üçüncü basamak PBM'de ise yatış süresi daha uzundur. Üçüncü basamak PBM'de tedavi alan hastaların exitus oranı daha yüksekti. Üçüncü basamak PBM'den taburcu olan hasta sayısı daha azdı. İkinci basamak PBM'ye evde sağlık birimi üzerinden yatış daha fazlaydı.

Sonuç: Bu çalışmada ikinci ve üçüncü Basamak PBM'leri arasında yatış oranları, tanıları ve süreleri farklılık göstermiştir. Çalışmamız çeşitli basamaklarda bulunan palyatif bakım merkezleri hakkında durum tespiti yapmış olup başka çalışmaların yapılması konusunda ön bilgi niteliğinde değerlendirilebilir.

Anahtar kelimeler: Palyatif bakım, alzheimer hastalığı, malignite, kırıklık, serebrovasküler hastalıklar, malnütrisyon

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Introduction

Palliative care, which is considered among human rights values, is a care approach that aims to reduce the pain and pain of patients and improve the quality of life [1]. Especially chronic diseases and the increase in the frequency of malignancy and rapid developments in treatment options increased the need for palliative care. Palliative care will become even more important due to the growing elderly population worldwide [2]. Palliative care requires a comprehensive assessment and multidisciplinary approach. It aims to remove physical, psychosocial and emotional symptoms of the patients with treatment in addition to supporting their family and friends and those who provide the care and relieving their grief [3,4]. There are differences in national palliative care policies in terms of performing this service. However, in general, palliative care may include a comprehensive medical practice such as home care, inpatient care in specific or conventional units in the hospital, daycare and outpatient care, and emergency care. All of these should focus on the changing needs and desires of patients and their relatives.

Palliative care has reached a good point in Turkey and the awareness rate among healthcare workers has increased. Palliative care centers have started to be established in inpatient health facilities within the scope of the "Directive About the Application Procedures and Principles of Palliative Care" which came into force in 2015. In these centers, patients with multiple chronic problems and end-stage cancer patients are followed and receive treatment [5].

Although the number of palliative care centers is increasing, they are still having difficulty in meeting the need. In addition, clinical experience of the personnel is not sufficient. It is important to reveal the condition of palliative care centers and assess the clinical profile of hospitalized patients. Palliative care centers serve at different levels of health care. These centers have some differences in terms of their operational processes [6(2)]. This study aimed to assess and compare coordination with home health care services and the diagnoses, lifetimes, and demographic data of the patients who received treatment in the Palliative Care Centers of secondary and tertiary care hospitals in Kayseri.

Methods

Secondary palliative care centers work in more coordination with home health services in Kayseri. Mostly patients who are admitted to the emergency department or outpatient clinics are hospitalized in tertiary PC centers because home health services in tertiary care have just been established and have less control in the field. Patients who were hospitalized at Kayseri State Hospital serving as secondary care hospital and Kayseri City Training and Research Hospital serving as tertiary care hospital between 01.08.2018 and 01.03.2020 were included in this descriptive, cross-sectional and retrospective study. Demographic characteristics, hospitalization, hospital stay, mortality, number of hospitalization from home health services or other clinics were recorded. Hospital stays durations stated in hours in the system were assessed in day scale.

Statistical analysis

SPSS 22.0 (SPSS Inc. Chicago, IL) program was used for statistical analysis. Descriptive statistics were given as percentage, mean \pm standard deviation (Mean \pm SD) and median (min - max) values. Student T test was used to compare normally distributed independent groups. Mann Whitney U test was used for non-normally distributed data. Chi square test was used to compare categorical data.

Ethical approval

The study was approved by the ethics committee of Kayseri City Training and Research Hospital (14.05.2020/73).

Results

A total of 830 patients who were hospitalized in PC centers between 01.08.2018 and 01.03.2020 were included in our study. The median age of 830 patients included in the study was 79 (24-102), 406 (48.9%) of the patients were male and 424 (51.1%) were female. Patients' mean length of hospital stays was 14, and median length was 8.7 (0.6-112) days. The three most common comorbidities were malignancy in 181 patients (21.8%), cerebrovascular disease in 126 patients (15.2%) and malaise-fatigue-senility in 89 patients (10.7%) (Table 1).

Table 1. Diagnoses of admission to PC centers, length of hospital stays and age parameters

Diagnosis	n	%	Age med (min-max)	Length of hospital stay med (min-max)
Pain	30	3.6	64 (24-90)	8.7(0.07 -50.8)
Asthma-COPD	69	8.3	79(31-93)	6.3 (0.0-57.7)
Malignancy	181	21.8	67(27-100)	9.8 (0.00 -112.1)
Urinary System Pathologies	49	5.9	80(24-93)	11.2 (0.5 -59.6)
Alzheimer' s Disease	83	10	86(52-99)	8.4 (0.6-77.9)
Wound-Infection	36	4.3	82.5(31-95)	5.7 (0.0 -30.3)
Other Neurological Diseases	75	9	72(27-99)	9.2 (0.00 -93.7)
Cerebrovascular Diseases	126	15.2	82(47-98)	7.4 (0.00 -73.2)
Nutritional Deficiency Sequels-GIS Diseases	54	6.5	80.5(41-100)	11.3 (0.03 -59.3)
Trauma	3	4	79(38-86)	8.3 (1.3-11.3)
Hypertension-Diabetes Mellitus	35	4.2	80(61-91)	6.01 (0.4-21.2)
Malaise-Fatigue-Senility	89	10.7	81(40-102)	10.4(0.00 -110)

COPD: Chronic obstructive pulmonary disease, GIS: Gastrointestinal System

When the relationship between the diagnosis and age of the patients was assessed, a significant difference was found between the diagnoses in terms of age ($p=0.012$) (Table 1). Median ages were 86 (52-99) for Alzheimer's disease, 82 (47-98) cerebrovascular disease, and 82.5 (31-95) for wound- infection. Patients in the group of asthma, COPD, Alzheimer's disease, malaise-fatigue-senility, and hypertension-diabetes mellitus were older than the pain group ($p=0.042$, $p<0.001$, $p<0.001$, $p=0.009$ respectively). The patients in the Alzheimer's disease group were older than those in the malignancy and asthma-COPD group ($p<0.001$, $p=0.004$ respectively). Patients with asthma-COPD and urinary system pathologies were significantly older than those with malignancy ($p<0.001$).

When the relationship between diagnosis and hospitalization of patients was assessed a significant difference was found in terms of diagnosis and hospitalization ($p=0.012$) (Table 1). Considering the length of hospital stays, the group with nutritional deficiency-malnutrition had the longest hospital stay with 11.325 (0.030-59.3) days. Malignancy patients' hospital stay was longer than that of hypertension-diabetes mellitus and wound-infection group ($p<0.001$, $p=0.012$ respectively). Hospital stay of the groups with Alzheimer's disease was significantly longer than that of nutritional deficiency sequels-GIS diseases, cerebrovascular disease, urinary system pathologies and hypertension-diabetes mellitus groups ($p<0.001$, $p=0.006$, $p=0.020$, $p=0.006$ respectively). Hospital stay of malaise-fatigue-senility group was significantly longer than that of wound-infection group ($p=0.012$).

Considering the age ranges and length of hospital stays in the secondary and tertiary PC Centers, it was observed that the patients in the tertiary PC centers were younger and had longer hospital stay (Table 2).

Table 2. Length of hospital stays and age range in the secondary and tertiary PC centers

	Secondary PC Center (n:445, 53.6%)	Tertiary PC Center (n:385, 46.4%)	P*
Length of hospital stay (day)	7.1 (0.65-77.9)	12.03 (1-112.1)	<0.001
Age (year)	80 (27-102)	76 (24-100)	<0.001

*Mann Whitney U Test

When the number of patients hospitalized in both centers was assessed according to the diagnoses, it was observed that the number of those who received inpatient treatment for cerebrovascular disease was higher in secondary PC centers while the number of those who received inpatient treatment for malignancy was higher in tertiary PC Centers (Table 3). When the length of hospital stay was assessed according to the diagnoses, the nutritional deficiency-GIS diseases group was observed to have the longest hospital stay [13.265 (0.39-45.19)] in the secondary palliative care centers. On the other hand, the malaise-fatigue-senility had the longest hospital stay [13.85 (0-110.08)] in the tertiary palliative care centers group (Table 3). The oldest patient group who received treatment in both centers was the patient group diagnosed with Alzheimer's disease (Table 3).

Table 3. Comparison of patients in secondary and tertiary care centers according to their diagnoses

Diagnosis	Secondary PC Center of Hospitals			Tertiary PC Center of Hospitals			p1	p2	p3
	Inpatient n (%)	Age (median)	Length of stay (day) (median)	Inpatient n (%)	Age (median)	Length of stay (day) (median)			
Pain	8(0.018)	59(56-77)	1.975(0.62-7.39)	22(0.057)	64.5(24-86)	11.63(0.07-50.82)	<0.001	0.027	0.185
Alzheimer's Disease	51(0.115)	82(61-96)	7.3(0.02-28.65)	18(0.047)	86(73-95)	12.87(1.15-45.85)	<0.001	0.250	0.527
Asthma-COPD	58(0.13)	81(31-93)	4.4(0.45-43.4)	123(0.319)	70(59-92)	11.09(0-48.94)	<0.001	0.060	0.743
Nutritional Deficiency Sequels-GIS Diseases	9(0.02)	81(41-91)	13.265 (0.39-45.19)	40(0.104)	73(47-100)	6.975(0.03-45.14)	<0.001	0.518	0.318
Other Neurological Diseases	68(0.153)	58(27-94)	8.34(0-52.45)	15(0.039)	77(37-99)	12.45(0.85-93.78)	<0.001	0.037	0.300
Hypertension-Diabetes Mellitus	25(0.056)	79.5(65-91)	4.985(0.4-21.25)	11(0.029)	78(72-79)	6.01(085-7.95)	0.267	0.479	0.287
Malaise-Fatigue-Senility	40(0.09)	78(40-89)	5.905(0.6-24.02)	35(0.091)	82(62-94)	13.85(0-110.08)	0.505	0.004	0.264
Malignancy	79(0.178)	70.5(33-91)	6.7(0-50.3)	47(0.122)	65(27-100)	10.93(0.08-112.12)	0.011	0.226	0.077
Cerebrovascular Disease	34(0.076)	81(56-95)	6.465(0-43.92)	20(0.052)	79(47-96)	13.16(1.01-73.72)	0.010	0.001	0.047
Urinary System Pathologies	3(0.007)	81(79-86)	9.855(8.35-11.36)	0(0)	80(24)	13.95(0.82-59.63)	<0.001	0.043	0.102
Wound-Infection	32(0.072)	76.9(31-95)	5.98(2.56-21.14)	3(0.008)	74.9(57-95)	15.1(0.35-23.12)	<0.001	0.028	0.194

p1: Chi Square Test, p2 and p3 Mann Whitney U Test, COPD: Chronic obstructive pulmonary disease, GIS: Gastrointestinal System

The mortality rate of the patients receiving treatment in this study was 29.3% (n=244), the discharge rate was 58.4% (n=485), and the rate of referral to intensive care was 12.3% (n=101). The mortality rate of patients receiving treatment in the tertiary PC centers was 47.27% (n=182), discharge rate was 40.51% (n=156), and the referral rate for intensive care was 12.2% (n=47). The mortality rate of patients receiving treatment in the secondary PC centers was 14% (n=62), the discharge rate was 73.9% (n=329), and the referral rate for intensive care was 12.1% (n=54). The number of patients who were referred from home health care units and hospitalized in the secondary PC center was 155 (35%) and the number of those who were referred from the emergency room-other clinics and hospitalized in the secondary PC center was 290 (65%). Considering the rates of hospitalization in the tertiary PC centers, 77 (20%) patients were referred from home health unit and 308 (80%) were referred from the emergency room and other clinics.

Discussion

As in the whole world, the need for palliative care centers is increasing gradually due to the increasing elderly patient population in Turkey as well as increasing advanced chronic diseases [2]. In Turkey, the number of palliative care centers and clinical experience are still less than expected [5]. With this study, we presented the demographic characteristics, hospitalization diagnoses and length of hospital stays of patients admitted to palliative care centers in the secondary and tertiary care hospitals within 18 month and differences between the centers. In the study conducted by Yuruyen et al. in a palliative care center of a tertiary hospital, mean age of the patients was 71 and 45% of the patients were female while 41% of the patients were female and mean age was 70.6 in another similar study. The mean length of hospital stay in PC centers was 27.2 days in a study while it was 14.50 ± 12.03 days in another study in literature [7, 8]. In our study, mean age of the patients was 74.5, 51.1% were female, and the mean length of hospital was 14 days. Our results are similar to those in other studies in literature. We think patients at the age of 70 and above need care more in palliative care centers. The number of female population especially at the age of 65 and above is higher, which reveals that disability in these age groups is more in women than in men [9].

The three most common comorbid diseases in the PC centers are malnutrition (59%), malignancy (44%) and infection disease (33%) (5). Benli et al. reported in their study that neurological disorders and malignancies including cerebrovascular events were in the first place in terms of the diagnosis of hospitalization in tertiary PC centers [8]. In our study, the rate of malignancy and cerebrovascular disease was higher, which is consistent with the findings in literature.

As far as we know the number of studies comparing hospitalization diagnoses, length of hospital stays and demographic data of inpatients in different PC centers is low [7]. The number of patients who are hospitalized for cerebrovascular diseases is the highest in secondary PC centers and the number of patients who are hospitalized for malignancy is the highest in tertiary PC centers. This may be because the number of patients who are referred from home health units to secondary PC centers is higher while the number of patients who are referred from oncology/hematology clinics to tertiary PC centers is higher. In home health care services, the number of patients followed up for cerebrovascular disease, Alzheimer's disease, hypertension and cardiovascular diseases is higher [10].

Patients hospitalized in tertiary PC centers are younger. In studies on cancer groups, mean age is decreasing in cancer patients compared to the other patients in PC centers [11,12]. Malignancy patients account for the largest part of the patients hospitalized in the tertiary palliative care centers, which may cause the mean age to be younger. While hospital stay of patients hospitalized for cerebrovascular diseases is the longest in palliative care centers hospital stay of patients hospitalized for cancer is shorter [5]. In our study, the second most common patients in tertiary PC centers were those receiving care for senility, which may have extended the length of hospital stays rather than patients with malignancy.

In the study by Yuruyen et al., the rate of patients discharged was 52%, the rate of referral to intensive care was 15% and the mortality rate was 33% [5]. Akdogan et al. found in their study that mortality rate in the PC center of a tertiary care hospital was 43.0%, referral to intensive care unit was 24.3%, and the discharge rate was 32.8% [13]. Mortality rates and intensive care referral rates of the patients included in our study were found to be consistent with the findings in literature.

Mortality rate in tertiary PC centers is similar to that in literature, but it is higher than the rate in the secondary PC centers. This may be because the number of patients receiving care for end-stage malignancy is higher in tertiary PC centers. Oncological patients have the highest rate in tertiary PC centers because inpatient bed availability is more and there is an oncology clinic in these centers. Mostly the bed-bound patients are followed up in secondary care. This may be because home health care services have bed-bound patient profile and work in coordination with secondary care.

Limitations

This study was performed retrospectively and with document scanning method, which may be the limitation of our study.

Conclusion

In this study, the rate and diagnoses of hospitalization and length of hospital stays were different in secondary and tertiary PC centers. The rate of patients followed up for cerebrovascular diseases is higher in secondary care. This may be because they are similar to patient group followed up by home health care services. The rate of cancer patients is higher, hospital stay is longer and mortality rate is higher in tertiary care. This may be because further examination, diagnosis and treatment are performed in tertiary care centers. Our study has made an assessment about palliative care centers at various levels of health care and can be considered as prior knowledge for other studies.

Conflict of interest: None

Author Contributions		Author Initials
SCD	Study Conception and Design	HA, MBG, ARB
AD	Acquisition of Data	HA, DA, MBG,OB
AID	Analysis and Interpretation of Data	HA, ARB, MBG,
DM	Drafting of Manuscript	MBG,DA,OB
CR	Critical Revision	ARB, DA, OB

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