



저작자표시-비영리-변경금지 2.0 대한민국

이용자는 아래의 조건을 따르는 경우에 한하여 자유롭게

- 이 저작물을 복제, 배포, 전송, 전시, 공연 및 방송할 수 있습니다.

다음과 같은 조건을 따라야 합니다:



저작자표시. 귀하는 원저작자를 표시하여야 합니다.



비영리. 귀하는 이 저작물을 영리 목적으로 이용할 수 없습니다.



변경금지. 귀하는 이 저작물을 개작, 변형 또는 가공할 수 없습니다.

- 귀하는, 이 저작물의 재이용이나 배포의 경우, 이 저작물에 적용된 이용허락조건을 명확하게 나타내어야 합니다.
- 저작권자로부터 별도의 허가를 받으면 이러한 조건들은 적용되지 않습니다.

저작권법에 따른 이용자의 권리는 위의 내용에 의하여 영향을 받지 않습니다.

이것은 [이용허락규약\(Legal Code\)](#)을 이해하기 쉽게 요약한 것입니다.

[Disclaimer](#)

The outcomes of acute palliative care unit at a comprehensive cancer center

Si Won Lee

Department of Medicine

The Graduate School, Yonsei University

The outcomes of acute palliative care unit at a comprehensive cancer center

Directed by Professor Hye Jin Choi

The Master's Thesis
submitted to the Department of Medicine
the Graduate School of Yonsei University
in partial fulfillment of the requirements for the degree
of Master of Medical Science

Si Won Lee

August 2017

This certifies that the Master's Thesis
of Si Won Lee is approved.

Thesis Supervisor : Hye Jin Choi

Thesis Committee Member#1 : Sang Joon Shin

Thesis Committee Member#2 : Kyung Ran Kim

The Graduate School
Yonsei University

August 2017

ACKNOWLEDGEMENTS

First of all, I would like to acknowledge my advisor professor Hye Jin Choi, for being my mentor and instructing me in every way. She guided and supported me greatly to complete this thesis. I would also like to thank professor Sang Joon Shin and Kyung Ran Kim for serving as my committee members despite their busy schedules.

Also, I appreciate research nurse, Ju Yeon Lee for helping me in organizing patient data.

Last but not the least, I would like to express my gratitude toward my parents and twin sister, Chung Won Lee for being my best supporters. Thank you.

August, 2017

Si Won Lee

<TABLE OF CONTENTS>

ABSTRACT.....	1
I. INTRODUCTION	4
II. MATERIALS AND METHODS.....	7
1. Study population and data collection	7
2. Statistical analysis	9
III. RESULTS.....	10
1. Baseline characteristics	10
2. Discharge outcomes	13
3. Medication changes and interventions during the APCU stay	16
4. Symptom changes	18
IV. DISCUSSION	22
V. CONCLUSION	27
REFERENCES	28
SUPPLEMENTARY	31
ABSTRACT (IN KOREAN)	32

LIST OF TABLES

Table 1. Baseline characteristics of patients	11
Table 2. Discharge outcomes of patients.....	13
Table 3. Differences between alive vs. deceased discharged patients	14
Table 4. Medication change profiles during the APCU stay	17
Table 5. Interventions during the APCU stay.....	18
Table 6. ESAS scores upon admission.....	19
Table 7. ESAS scores at baseline and one week	20
Table 8. Subdivision of ESAS score by severity 5 at baseline and one week.....	21

ABSTRACT

The outcomes of acute palliative care unit
at a comprehensive cancer center

Si Won Lee

*Department of Medicine
The Graduate School, Yonsei University*

(Directed by Professor Hye Jin Choi)

BACKGROUND: Acute palliative care units aim to actively control physical and psychosocial distress of advanced cancer patients and their families. They also help patients receive the care they need by connecting them to adequate facilities. Our interest was to retrospectively analyze the admission results of patients who utilized the acute palliative care unit of the Yonsei Cancer Center and look forward to finding effective ways to operate the acute palliative care unit.

MATERIALS AND METHODS: The admission data between April 2014 and April 2015 were retrospectively reviewed. Two hundred and five patients used the acute palliative care unit for a total of 289 admissions. Medication changes and interventions during the acute palliative care unit stay were investigated. The Edmonton Symptom Assessment System was used to estimate symptom severity initially at admission and one week afterwards to check how much the

symptom severity was lowered. Differences between deceased and alive discharged patients were also compared.

RESULTS: The 205 admitted patients had the following characteristics: male 53.2%, median age 60 years (range 53-69), and median acute palliative care unit stay 9 days (range 5.0-14.0). Hepatobiliary-pancreatic cancer and gastrointestinal cancer patients accounted for the largest portion (n=72, 35.1%; n=42, 20.5% respectively). Most patients were referred from department of oncology (n=166, 81%). One hundred and fifty-eight (77.1%) patients were referred to the acute palliative care unit after anti-cancer treatments were all finished. Forty-six (22.4%) patients died during their stay. Patients who were discharged due to death were most likely admitted from other wards (n=31, $p=0.0006$) and were finished with anti-cancer treatment before admission (n=42, $p=0.0009$). There was a significant improvement in ESAS scores for fatigue, lack of appetite, dyspnea, constipation, and depression, but pain was not controlled significantly. Forty patients requiring ongoing treatment were well-linked to hospices.

CONCLUSION: Most patients admitted to the acute palliative care unit at the Yonsei Cancer Center were at the end stages of their disease or finished with their anti-cancer treatments. Overall symptoms improved with some drawbacks during the acute palliative care unit stay. To improve acute palliative care unit's

role, a more aggressive symptom management and a system for early access are necessary.

Key words : palliative care, palliative medicine, palliative treatment, palliative therapy

The outcomes of acute palliative care unit
at a comprehensive cancer center

Si Won Lee

Department of Medicine
The Graduate School, Yonsei University

(Directed by Professor Hye Jin Choi)

I. INTRODUCTION

Most Americans prefer dying at home,¹⁻³ but in reality inpatient death accounts for most cases.⁴ Likewise, in Korea a significantly increasing trend of hospital deaths has been noted.⁵ Therefore, it has been essential to find ways to improve the end-of-life care for patients who are most likely to face death at the hospital. As a solution, palliative care has been developed in many countries. The primary goal of palliative care is to reduce pain and elevate patients' quality of life. While hospice care was the main option for terminally ill cancer patients, now it is combined with early palliative care starting at cancer diagnosis. It has been shown in several randomized clinical studies that advanced cancer patients receiving anti-cancer treatment with palliative care at the time of diagnosis are more satisfied with their quality of life than those receiving standard treatment.⁶⁻⁸ Therefore, the importance of early palliative care has been widely accepted.

Palliative care programs can be divided into four types. First, there are ambulatory-based palliative care clinics, which facilitate acute care in the outpatient setting. They not only decrease visits to the emergency department, but also provide goal-directed and cost-effective care. The next option is home-based palliative care for those who find hospital visits burdensome. This offers patients goal-directed care in their homes or community setting in the presence of their families or caregivers. Third, inpatient palliative care units provide optimal care to complex palliative care patients. The greatest advantage of this type of palliative care is that interdisciplinary team work is available. Lastly, there are inpatient consultation services, which have been widely used since they do not require a specific space or resources.⁹

Casarett et al. reported the results of a nationwide telephone survey targeting bereaved families who utilized the palliative care consultation services and palliative care units (PCU) provided by 77 Veteran Affairs medical centers. Generally, families of terminal patients who received palliative care consultation perceived patient's care during their last month to be excellent compared to those of patients who received usual care. Additionally, families of patients who utilized the PCU were likely to report more satisfaction in patient's care compared to those of patients who received palliative care consultations only.⁴ This suggests that PCU is perceived to provide more effective care than consultation services do. Palliative care in wards is considered advantageous over consultation services because it provides more

systemic and dedicated care. In this study, we will focus on the inpatient palliative care program, specifically the Acute Palliative Care Unit (APCU).

Most palliative care referrals have been made when no further active anti-cancer treatment was possible.¹⁰ Moreover, as anti-cancer treatment has developed rapidly, cancer patients spend more time at the hospital, and aggressive anti-cancer treatment even helps delay palliative care.¹¹⁻¹³ Because of these problems, hospital-based palliative care service was introduced in the tertiary cancer center of the United States. In 1999, the University of Texas M. D. Anderson Cancer Center (UTMDACC) started a palliative care program with a consulting service or an outpatient format. In 2002, the APCU was established to alleviate advanced cancer patients' physical symptoms and psychological distress and to establish a community where palliative care service could continue. Therefore, the APCU plays a role as a transitional care facility. Elsayem et al. have shown hospital mortality has not increased since the APCU establishment.¹⁴ Also, the ICU mortality between 2001 and 2009 in UTMDACC was lower in patients who received palliative care compared to those who did not.¹⁵

Korea has 73 national palliative care facilities,¹⁶ but the majority only provides hospice care. Palliative care service utilization in Korea rose to 13.8% in 2014.¹⁷ Currently, the utilization of palliative care facilities has been increasing since July 2015, as the use of hospice and palliative care is covered by the National Health Insurance. Early palliative care was first introduced in

Korea in 2014, when the Yonsei Cancer Center (YCC) opened the APCU. In addition, the YCC operates a palliative consulting team. We aimed to retrospectively evaluate and assess the characteristics and discharge outcomes of patients who were admitted to the APCU. The ultimate goal of the present study was to assess whether the APCU relieved or managed patients' symptoms effectively and to find ways to further improve outcomes. Through this study we hope to delineate the roles of the APCU and seek effective ways to run the unit at a tertiary hospital in Korea.

II. MATERIALS AND METHODS

1. Study population and data collection

We retrospectively reviewed the medical records of patients who were admitted to the YCC APCU from April 2014 to April 2015. The APCU has 12 beds and is operated by following staffs: a board certified oncologist, 10 nurses, two midlevel provider (advanced practice registered nurse), an internal medicine resident, chaplain, social worker, pharmacist, music therapist, art therapist, yoga instructor, a volunteer coordinator and 125 volunteers. A total of 205 admitted patients were included to our study. Among them 84 patients were readmitted and only the first admissions were investigated. We presumed, as number of readmission increases, patients' condition would lead to more of hospice patients, thereby diluting the data analysis when included in the study. We reviewed admission routes, discharge forms, admission reasons, primary cancer

sites, anti-cancer treatment continuity status. This study also includes assessment of state of consciousness, Eastern Cooperative Oncology Group (ECOG) performance status, and medication changes of before and after admission to the APCU. Art therapy, music therapy, yoga, foot massage, haircut, and body care such as bathing services were provided. We also compared the different characteristics of alive (n=159) and deceased (n=46) discharged patients.

To examine how well the symptoms are controlled, we used a symptom control assessment tool, Edmonton Symptom Assessment System (ESAS), starting July 2014. ESAS is a reliable assessment tool to estimate nine symptoms that are common in cancer patients: pain, tiredness, nausea, depression, anxiety, drowsiness, appetite, wellbeing, and shortness of breath.¹⁸ The ESAS was also validated in Korean patients with cancer. Korean version of ESAS (K-ESAS) evaluates 10 symptoms that includes sleep disturbance.¹⁹ Each symptom is rated from 0 to 10 on a numerical scale, 0 indicating no symptom and 10 indicating a symptom of the highest possible severity. In the current study, we added two more symptoms to the typical 10 K-ESAS symptoms: constipation and financial distress (Supplementary). Upon admission, patients were initially asked by the medical team to score their symptoms, and one week later follow up assessments were made. If patients were unable to complete the symptom assessment due to impaired cognition or passed away prior to their follow-up, we excluded them in the analysis. We also evaluated ESAS results

by severity score 5.

2. Statistical analysis

Descriptive statistics and frequency were used for continuous and categorical variables of patients' demographics, respectively. Pearson chi-square test or Fisher's exact test was used appropriately to compare categorical variables between patients who survived and those who died in the APCU. Continuous variables were analyzed with an independent T test and the Mann-Whitney U test. Initial ESAS scores were compared with follow up scores using a paired T test. All p values < 0.05 were regarded as statistically significant. All statistical analyses were performed using the SPSS statistical software, version 20.0 (IBM SPSS statistics, version 20.0 for Windows; SPSS Inc., Chicago, IL, USA).

III. RESULTS

1. Baseline characteristics

Baseline characteristics of gender, age, primary sites, ECOG, admission route, referred department, and admission reasons are summarized in Table 1. Of the total 205 admitted patients, 46 patients died in the APCU and 53 patients were readmitted during the study period. Median age was 60 years old (range 53.0-69.0). The primary cancer site was diverse, but hepatobiliary-pancreatic cancer was the most common cancer type (n=72, 35.1%) referred to the APCU, followed by gastrointestinal cancer (n=42, 20.5%) and lung cancer (n=28, 13.7%). ECOG performance status 2 was prevalent among patients and 0 was absent. Patients were most frequently admitted from other wards via consultation (n=98, 47.8%). The number of admissions through the outpatient department was 84 (41.0%). Most admitted patients were from the department of oncology (n=166, 81%). The primary reason for admission was symptom control (n=191, 93.2%).

Forty-seven (22.9%) patients were on active anti-cancer treatment and 158 (77.1%) were finished with anti-cancer treatment prior to admissions.

Table 1. Baseline characteristics of patients

Characteristics		Total (N=205), No. (%)
Gender	Male	109(53.2)
	Female	96(46.8)
Age, years	Median	60
	range	27-89
Primary site	GI	42(20.5)
	Hepatobiliary-pancreatic	72(35.1)
	Lung	28(13.7)
	Head and Neck	5(2.4)
	Brain	5(2.4)
	Gynecologic	16(7.8)
	Genitourinary	13(6.3)
	Breast	3(1.5)
	Orthopedic	1(0.5)
	Skin	4(2.0)
	Other	16(7.8)
	ECOG	0
1		60(29.3)
2		64(31.2)
3		44(21.5)
4		37(18.0)

(continued)

Characteristics	Total (N=205), No. (%)	
Admission route	OPD	84(41.0)
	ER	23(11.2)
	Ward	98(47.8)
Referred department	Oncology	166(81)
	Internal Medicine	13(6.3)
	Surgery	4(2.0)
	Obstetrics/Gynecology	3(1.5)
	Urology	9(4.4)
	Neurosurgery/Neurology	6(2.9)
	Others	4(2.0)
Admission reason	Symptom control	191(93.2)
	Terminal care	59(28.8)
	Transitional care	46(22.4)
	Evaluation	17(8.3)
	Anticancer Treatment (Radiotherapy, chemotherapy, etc.)	7(3.4)
Receiving anti-cancer treatment	Active treatment	47 (22.9)
	Treatment finished	158 (77.1)

Abbreviations: GI, Gastrointestinal; ECOG, Eastern Cooperative Oncology Group; OPD, Out-Patient Department; ER, Emergency room

*Multiple selections were possible.

Table 2. Discharge outcomes of patients

Characteristics	Total (N=205), No. (%)
Discharge form	
Death	46(22.4)
Home discharge	81(39.5)
Hospice	40(19.5)
Hospital without hospice	29(14.1)
Transfer to other department within the YCC	9(4.4)
Length of stay, days	
Median	9
range (Q1-Q3)	5.00-14.00
Abbreviation: YCC, Yonsei Cancer Center	

2. Discharge outcomes

Discharge outcomes are outlined in Table 2. Median length of stay for 205 patients was 9 days (range 5.0-14.0). Eighty-one (39.5%) patients were discharged home. Of the 205 patients, 46 (22.4%) patients passed away in the APCU. Differences between alive and deceased discharged patients are compared on Table 3. More female patients passed away compared to male patients (n=26, 56.5% vs. n=20, 43.5%), but this was not statistically significant (p -value = 0.135). The median ages were 60 (range 52.0-69.0) and 59 (range 54.0-69.0) for alive and deceased patients, respectively, without statistical significance. Primary cancer site differences between alive and deceased patients were also not statistically meaningful, with a p -value of 0.589. Median lengths of stays at the APCU for two groups were the same, 9 days (p -value

0.335). Not surprisingly, patients who died at the APCU had poorer ECOG performance status than those discharged alive. Deceased patients mostly had an ECOG performance status of 3 or 4 (each n=15, 32.6%), whereas a majority of the survivors had 1 or 2 (each n=54, 34.0%). A majority of the deceased patients were admitted to the APCU from other wards (n=31, 67.4%), while a majority of the surviving patients were admitted from outpatient clinics (n=74, 46.5%). Most deceased patients were off the anti-cancer treatment (n=42, 91.3% *p*-value 0.009). For those who survived, only 43 (27.0%) patients were on active anti-cancer treatment.

Table 3. Differences between alive vs. deceased discharged patients

Characteristics	Survival (N=159) No. (%)	Death (N=46) No. (%)	<i>p</i> -value
Gender			0.135
Male	89 (56.0)	20 (43.5)	
Female	70 (44.0)	26 (56.5)	
Age, years			0.858
Median	60	59	
range (Q1-Q3)	52.00-69.00	54.00-69.00	

(continued)

Characteristics	Survival (N=159) No. (%)	Death (N=46) No. (%)	<i>p</i> -value
Primary cancer site			0.589
GI	32 (20.1)	10 (21.7)	
Hepatobiliary-pancreatic	57 (35.8)	15 (32.6)	
Lung	22 (13.8)	6 (13.0)	
Head and Neck	4 (2.5)	1 (2.2)	
Brain	4 (2.5)	1 (2.2)	
Gynecologic	12 (7.5)	4 (8.7)	
Genitourinary	12 (7.5)	1 (2.2)	
Breast	1 (0.6)	2 (4.3)	
Orthopedic	1 (0.6)	0 (0.0)	
Skin	4 (2.5)	0 (0.0)	
Other	10 (6.3)	6 (13.0)	
ECOG			0.001
0	0 (0.0)	0 (0.0)	
1	54 (34.0)	6 (13.0)	
2	54 (34.0)	10 (21.7)	
3	29 (18.2)	15 (32.6)	
4	22 (13.8)	15 (32.6)	
Admission route			0.006
OPD	74 (46.5)	10 (21.7)	
ER	18 (11.3)	5 (10.9)	
Ward	67 (42.1)	31 (67.4)	
Length of stay			0.335
Median	9	9	
range (Q1-Q3)	5.00-14.00	3.75-13.25	
Receiving anti-cancer treatment status			0.009
Active treatment	43 (27.0)	4 (8.7)	
Treatment finished	116 (73.0)	42 (91.3)	

Abbreviations: ECOG, Eastern Cooperative Oncology Group; GI, Gastrointestinal; OPD, Out-Patient Department; ER, Emergency Room

3. Medication changes and interventions during the APCU stay

During the APCU stay, the most commonly added drugs were opioids (n=83, 40.5%), antipsychotics (n=49, 23.9%), and laxatives (n=49, 23.9). The most commonly discontinued drugs were laxatives (n=33, 16.1%) and steroids (n=21, 10.2%). Table 4 organizes medication changes during the APCU stay. Table 5 reveals interventions conducted and indicates catheter interventions were mostly done (n=111, 54.1%). Oxygen was applied in 77 (37.6%) patients. During the APCU stay, radiation therapy and chemotherapy were performed in 15 and 14 patients respectively.

Table 4. Medication change profiles during the APCU stay

Characteristic	Number (%) of patients
Most commonly added drugs	
Total number of patients	205 (100)
Opioids	83 (40.5)
Antipsychotics	49 (23.9)
Laxatives	49 (23.9)
Aperitives	40 (19.5)
Steroids	26 (12.7)
Other analgesics	21 (10.2)
NSAIDs	18 (8.8)
Antiulcer agents	18 (8.8)
Anticonvulsant	18 (8.8)
Antiemetics	11 (5.4)
Antidepressants	7 (3.4)
Most commonly discontinued drugs	
Total number of patients	205 (100)
Laxatives	33 (16.1)
Steroids	21 (10.2)
Antipsychotics	19 (9.3)
Antiulcer agents	17 (8.3)
Aperitives	15 (7.3)
Other analgesics	12 (5.9)
Antiemetics	9 (4.4)
Anticonvulsant	8 (3.9)
NSAIDs	7 (3.4)
Antidepressants	6 (2.9)

Table 5. Interventions during the APCU stay

Characteristic	Number (%) of patients
Radiation therapy	15 (7.3)
Chemotherapy	14 (6.8)
GI interventions (ERCP, EGD, Colonoscopy, etc.)	10 (4.9)
Catheter interventions (Chemoport, ascites catheter, pleural catheter, etc.)	111 (54.1)
O2 apply	77 (37.6)
Others (L-tube, Foley, etc.)	59 (28.8)

This includes multiple interventions per patient.

4. Symptom changes

ESAS scores upon admission (Table 6) are summarized with their mean symptom intensities. Symptom scores of ≥ 5 indicate severe symptom. Major symptoms were decreased in sense of wellbeing, lack of appetite, fatigue, and drowsiness. The mean scores of ESAS upon admission and one week after are presented in Table 7. There were statistically significant improvements in patients' fatigue, lack of appetite, dyspnea, constipation, and depression scores. Subdivision ESAS results by symptom severity score 5 are displayed on Table 8. Symptom scores of 5 or more were mostly improved significantly after one week.

Table 6. ESAS scores upon admission

Symptom	No. of patients	Mean	SD	No. of patients with ≥ 5 of 10 severity	%	No. of patients with ≥ 3 of 10 severity	%
Pain	119	4.82	2.77	66	55.5	96	80.7
Fatigue	119	5.67	2.60	81	68.1	106	89.1
Drowsiness	119	5.29	2.79	73	61.3	99	83.2
Nausea	117	2.55	2.68	31	26.5	49	41.9
Lack of appetite	119	5.98	3.08	84	70.6	100	84.0
Dyspnea	120	3.72	3.03	51	42.5	71	59.2
Constipation	112	4.52	3.65	61	54.5	71	63.4
Sleep	119	4.41	2.95	66	55.5	83	69.7
Depression	118	4.25	3.26	62	52.5	75	63.6
Anxiety	118	4.43	3.20	64	54.2	81	68.6
Wellbeing	118	6.00	2.61	89	75.4	104	88.1
Financial distress	116	4.28	3.12	62	53.4	74	63.8

Abbreviations: ESAS, Edmonton Symptom Assessment System; SD, Standard deviation

Table 7. ESAS scores at baseline and one week

Symptom	No. of patients*	Baseline mean	SD	Follow-up mean	SD	<i>p</i> †
Pain	58	4.72	2.821	4.09	3.186	0.130
Fatigue	57	5.81	2.695	4.72	2.871	0.017
Drowsiness	57	5.12	2.971	4.37	3.227	0.159
Nausea	55	2.51	2.828	2.02	2.361	0.198
Lack of appetite	55	6.38	3.200	5.16	3.304	0.012
Dyspnea	57	3.98	3.215	3.16	2.757	0.016
Constipation	54	4.46	3.790	3.22	3.468	0.025
Sleep	56	4.36	3.250	4.71	3.155	0.465
Depression	56	4.71	3.323	3.71	2.884	0.034
Anxiety	56	4.64	3.083	3.95	3.065	0.129
Wellbeing	55	5.96	2.694	5.62	2.941	0.319
Financial distress	55	3.73	3.009	3.71	2.910	0.965

Abbreviations: ESAS, Edmonton Symptom Assessment System; SD, Standard deviation

*Including only individuals with values available at both baseline and follow-up.

†*P* values are based on the paired *t* test.

Table 8. Subdivision of ESAS score by severity 5 at baseline and one week

Symptom	Severity	No of patients*	Baseline mean	SD	Follow-up mean	SD	<i>P</i> †
Pain	< 5 of 10	23	1.78	1.731	2.43	3.043	0.353
	≥ 5 of 10	35	6.66	1.305	5.17	2.828	0.004
Fatigue	< 5 of 10	15	2.27	1.668	3.73	3.535	0.141
	≥ 5 of 10	42	7.07	1.659	5.07	2.551	< 0.001
Drowsiness	< 5 of 10	23	2.13	1.714	3.43	3.012	0.091
	≥ 5 of 10	34	7.15	1.598	5.00	3.257	0.002
Nausea	< 5 of 10	39	1.00	1.504	1.49	2.281	0.100
	≥ 5 of 10	16	6.19	1.642	3.31	2.089	0.004
Lack of appetite	< 5 of 10	15	2.00	1.464	3.80	3.167	0.036
	≥ 5 of 10	40	8.03	1.804	5.68	3.245	< 0.001
Dyspnea	< 5 of 10	31	1.35	1.427	1.74	2.129	0.342
	≥ 5 of 10	26	7.12	1.395	4.85	2.477	< 0.001
Constipation	< 5 of 10	24	0.63	1.096	1.38	2.081	0.110
	≥ 5 of 10	30	7.53	1.833	4.70	3.669	0.001
Sleep	< 5 of 10	26	1.35	1.441	3.46	2.888	0.001
	≥ 5 of 10	30	6.97	1.752	5.80	3.010	0.076
Depression	< 5 of 10	23	1.30	1.46	2.35	2.587	0.062
	≥ 5 of 10	33	7.09	1.826	4.67	2.723	< 0.001
Anxiety	< 5 of 10	24	1.58	1.613	2.88	2.559	0.016
	≥ 5 of 10	32	6.94	1.501	4.75	3.203	0.001
Wellbeing	< 5 of 10	13	2.23	1.739	3.00	3.317	0.356
	≥ 5 of 10	42	7.12	1.699	6.43	2.307	0.065
Financial distress	< 5 of 10	28	1.07	1.215	2.57	2.847	0.008
	≥ 5 of 10	27	6.48	1.341	4.89	2.517	0.003

Abbreviations: ESAS, Edmonton Symptom Assessment System; SD, Standard deviation

*Including only individuals with values available at both baseline and follow-up.

†*P* values are based on the paired t test.

IV. DISCUSSION

It is important to have an easy access to acute care facilities, tertiary palliative care units, hospices, and local communities.^{20,21} It would be ideal to ensure these services to patients and caregivers whenever they are needed. In order to do so, each type of palliative care models must be built well. Before the YCC APCU was established, most palliative care services provided in Korea resembled hospice care. Now palliative care programs continue to expand and develop with the National Health Insurance's support. Bruera et al. reported that a higher number of symptom complaints and poor prognostic factors were associated with treatment in tertiary hospital palliative care units. Better prognosis or less symptom complaints were associated with treatment in hospices, communities, and by the consultation team of acute care facilities.²² When properly equipped with the required conditions of a palliative care service system, early palliative care service would be readily available to advanced cancer patients.

Whereas the typical palliative care ward focused primarily on end-of-life care similar to hospice care, the APCUs concentrate more on rapid symptom control, active psychosocial treatment, shorter hospital stays, and lower inpatient mortality.²³ As shown on Table 1, the most common reason for admission to the YCC APCU was symptom control. Several studies have revealed that there were improvements in symptom controls when admitted to the APCU.^{14,24,25} Quality of life was improved or at least maintained.²⁶ We

conducted our analysis based on the assumption that major common symptoms and distress patterns exist. Indeed, patients mainly complained of wellbeing, lack of appetite, fatigue, and drowsiness. However, only 5 out of 12 symptoms, fatigue, lack of appetite, dyspnea, constipation, and depression, significantly improved (Table 7). Although not all symptom score results were statistically significant, all symptoms except sleep disturbance received higher assessment scores. Particularly worth noting is that pain did not improve significantly. Given that the primary goal of the APCU was to control symptoms like pain, at first it seemed the APCU did not meet expectations. However, we observed patients with symptom scores of 5 or more were relieved from most symptoms significantly except sleep and wellbeing. Thus, more active symptom control was necessary to improve overall symptom management. Actively developing detailed, systemic symptom control protocols and educating patients to cope with their symptoms would improve symptom control quality.

Advanced terminal cancer patients need appropriate, continuous multidisciplinary palliative care as physical symptoms and psychosocial distress tend to worsen until death.²² However, patients were referred to the YCC APCU very late and the majority were already hospice patients. Of 205 admitted patients, 158 patients (77.1%) were off anti-cancer treatment. We presume late referrals were made because of the physician's lack of awareness of the recently introduced APCU. Therefore, medical professionals' knowledge of palliative care and their ability to accurately inform patients are critical. Physicians refer

patients to palliative care centers at the end of their disease course, which reflects their reluctance to send patients to the center during the anti-cancer treatment period. Physicians' misperception of palliative care is one of the leading barriers to palliative care utilization. Patients and their families often assume that palliative care is provided only when no more anti-cancer treatments are available. However, the concepts of hospice and palliative care should not be confused. Hence, both physicians and patients should be well-aware of the benefits palliative care has to offer.

In order to enhance the APCU utilization, a well-organized system can be a useful addition to palliative care promotion and physician education. Technical innovations like the automatic referral system could be an example of a development. Automatic triggering of referrals based on the patient's diagnosis, prognosis, or any need for palliative care, with timely routine symptom screening under selective predefined criteria, can be adopted.²⁷ According to the status change of patients, automatic consultation sent to palliative care team will allow early palliative care management. Palliative care, along with active anti-cancer treatment, should be available when needed.

Hui et al. reported in the discharge outcome of the M. D. Anderson Cancer Center APCU, the median APCU stay was 7 days, 36% of patients died during the stay, 15% were discharged home, and 46% were discharged to hospice.²⁸ As presented in Table 2, the length of APCU stay at the YCC was 9 days, the APCU death rate of 22.4% and 39.5% were discharged home. This

shows the YCC APCU discharge outcome is not inferior to, or rather better compared with M. D. Anderson Cancer Center APCU. Among the survivors who could not be discharged home (n=78) from the YCC APCU, 40 patients (51.28%) were transferred to the various hospices (Table 2). In other words, advance care planning was effectively provided to APCU users. We believe this resulted from close communication between the palliative care team and patients, which led to the YCC APCU users having a better awareness of the goals of their care. Although there is still room for improvement, the YCC APCU is playing an important role as the transitional care provider.

This study had several limitations. First, this was a retrospective study. Therefore, information bias or inaccurate record keeping may have affected the study. Second, the number of study subjects was small, and there were only a number of patients who completed the ESAS since this tool was later added to assess symptom control. Also, assessment of ESAS may have not been reflected properly due to the shortage of skilled manpower for detailed and thorough assessment. Lastly, the majority of patients were referred to the APCU after they were done receiving anti-cancer treatments. As mentioned earlier, there may be some misunderstandings or prejudice that patients are supposed to be referred to palliative care when no further active anti-cancer treatments are possible. Because the majority of patients in the study were hospice patients, it is difficult to avoid the criticism that whether the current study can present the practical role of the APCU different from typical palliative care service.

Collaboration among health professionals without lack of awareness of acute palliative care remained as our task to deal with.

V. CONCLUSION

In conclusion, this study showed that many patients admitted to the APCU used the facility at the end of their disease trajectory and symptoms were slightly ameliorated after admission. Severe symptoms were well-controlled compared to mild symptoms. Giving all cancer patients access to the APCU at suitable times is being considered, but it is worth recognizing the YCC APCU for its efforts to enhance cancer patients' quality of life. Most importantly, advance care planning was effectively designed so that the APCU users who needed further care at hospital were referred to hospices. Early approach system and more active symptom management must be restored. Future studies should prospectively compare the health outcomes of cancer patients who received acute palliative care with those who were never exposed to it.

REFERENCES

1. Brazil K, Howell D, Bedard M, Krueger P, Heidebrecht C. Preferences for place of care and place of death among informal caregivers of the terminally ill. *Palliat Med* 2005;19:492-9.
2. Higginson IJ, Sen-Gupta GJ. Place of care in advanced cancer: a qualitative systematic literature review of patient preferences. *J Palliat Med* 2000;3:287-300.
3. Tang ST. When death is imminent: where terminally ill patients with cancer prefer to die and why. *Cancer Nurs* 2003;26:245-51.
4. Casarett D, Johnson M, Smith D, Richardson D. The optimal delivery of palliative care: a national comparison of the outcomes of consultation teams vs inpatient units. *Arch Intern Med* 2011;171:649-55.
5. Yun YH, Lim MK, Choi KS, Rhee YS. Predictors associated with the place of death in a country with increasing hospital deaths. *Palliat Med* 2006;20:455-61.
6. Temel JS, Greer JA, Muzikansky A, Gallagher ER, Admane S, Jackson VA, et al. Early palliative care for patients with metastatic non-small-cell lung cancer. *N Engl J Med* 2010;363:733-42.
7. Bakitas M, Lyons KD, Hegel MT, Balan S, Brokaw FC, Seville J, et al. Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the Project ENABLE II randomized controlled trial. *JAMA* 2009;302:741-9.
8. Zimmermann C, Swami N, Krzyzanowska M, Hannon B, Leigh N, Oza A, et al. Early palliative care for patients with advanced cancer: a cluster-randomised controlled trial. *Lancet* 2014;383:1721-30.
9. Wiencek C, Coyne P. Palliative care delivery models. *Semin Oncol Nurs* 2014;30:227-33.
10. Cheng W-W, Willey J, Palmer JL, Zhang T, Bruera E. Interval between palliative care referral and death among patients treated at a comprehensive cancer center. *J Palliat Med* 2005;8:1025-32.
11. Earle CC, Landrum MB, Souza JM, Neville BA, Weeks JC, Ayanian JZ. Aggressiveness of Cancer Care Near the End of Life: Is It a Quality-of-Care Issue? *J Clin Oncol* 2008;26:3860-6.
12. Earle CC, Neville BA, Landrum MB, Ayanian JZ, Block SD, Weeks JC. Trends in the Aggressiveness of Cancer Care Near the End of Life. *J Clin Oncol* 2004;22:315-21.
13. Emanuel EJ, Young-Xu Y, Levinsky NG, Gazelle G, Saynina O, Ash AS. Chemotherapy use among Medicare beneficiaries at the end of life. *Ann Intern Med* 2003;138:639-43.
14. Elsayem A, Swint K, Fisch MJ, Palmer JL, Reddy S, Walker P, et al.

- t al. Palliative care inpatient service in a comprehensive cancer center: clinical and financial outcomes. *J Clin Oncol* 2004;22:2008-14.
15. Bruera E, Hui D. Conceptual models for integrating palliative care at cancer centers. *J Palliat Med* 2012;15:1261-9.
 16. Hospice and Palliative Care. Facts and Figures. Designation of Terminal Cancer Patients' Palliative Care Hospitals. Available at: http://hospice.cancer.go.kr/home/contentsInfo.do?menu_no=443&brd_mgrno [Accessed Sep 14 2016]
 17. Hospice and Palliative Care. Facts and Figures. Palliative Care Service Utilization Rate. Available at: http://hospice.cancer.go.kr/home/contentsInfo.do?menu_no=443&brd_mgrno [Accessed Sep 14 2016]
 18. Capital Health, Caritas Health Group. Guidelines for using the Edmonton Symptom Assessment System (ESAS). Regional Palliative Program. CH-0373. Available at: http://www.npcrc.org/files/news/edmonton_symptom_assessment_scale.pdf [Accessed August 1 2016]
 19. Kwon JH, Nam SH, Koh S, Hong YS, Lee KH, Shin SW, et al. Validation of the Edmonton Symptom Assessment System in Korean patients with cancer. *J Pain Symptom Manage* 2013;46:947-56.
 20. Brenneis C, Bruera E. The interaction between family physicians and palliative care consultants in the delivery of palliative care: clinical and educational issues. *J Palliat Care* 1998;14:58-61.
 21. Bruera E, Neumann CM, Gagnon B, Brenneis C, Kneisler P, Selmsler P, et al. Edmonton Regional Palliative Care Program: impact on patterns of terminal cancer care. *CMAJ* 1999;161:290-3.
 22. Bruera E, Neumann C, Brenneis C, Quan H. Frequency of symptom distress and poor prognostic indicators in palliative cancer patients admitted to a tertiary palliative care unit, hospices, and acute care hospitals. *J Palliat Care* 2000;16:16-21.
 23. Bryson J, Coe G, Swami N, Murphy-Kane P, Seccareccia D, Le L W, et al. Administrative outcomes five years after opening an acute palliative care unit at a comprehensive cancer center. *J Palliat Med* 2010;13:559-65.
 24. Tsai JS, Wu CH, Chiu TY, Hu WY, Chen CY. Symptom patterns of advanced cancer patients in a palliative care unit. *Palliat Med* 2006;20:617-22.
 25. Modonesi C, Scarpi E, Maltoni M, Derni S, Fabbri L, Martini F, et al. Impact of palliative care unit admission on symptom control evaluated by the edmonton symptom assessment system. *J Pain Symptom Manage* 2005;30:367-73.
 26. Cohen SR, Boston P, Mount BM, Porterfield P. Changes in quality of life following admission to palliative care units. *Palliat Med* 2001;15:363-71.

27. Hui D, Bruera E. Integrating palliative care into the trajectory of cancer care. *Nat Rev Clin Oncol* 2016;13:159-71.
28. Hui D, Elsayem A, Palla S, De La Cruz M, Li Z, Yennurajalingam S, et al. Discharge outcomes and survival of patients with advanced cancer admitted to an acute palliative care unit at a comprehensive cancer center. *J Palliat Med* 2010;13:49-57.

SUPPLEMENTARY

에드몬튼 증상 척도지

등록번호:

이름: _____

평가 일시 (년/월/일, 시): _____ / _____ / _____, _____ :

나이 (성별): _____ (남, 녀)

지난 24시간 동안 당신이 느낀 증상을 가장 잘 나타낸 숫자에 동그라미 하세요.

0	1	2	3	4	5	6	7	8	9	10
통증이 없음						상상할 수 없을 정도로 심한 통증				
0	1	2	3	4	5	6	7	8	9	10
피곤하지 않음						상상할 수 없을 정도로 심한 피로				
0	1	2	3	4	5	6	7	8	9	10
메스껍지 않음						상상할 수 없을 정도로 심하게 메스꺼움				
0	1	2	3	4	5	6	7	8	9	10
우울하지 않음						상상할 수 없을 정도로 심하게 우울함				
0	1	2	3	4	5	6	7	8	9	10
불안하지 않음						상상할 수 없을 정도 심하게 불안함				
0	1	2	3	4	5	6	7	8	9	10
졸립지 않음						상상할 수 없을 정도로 심하게 졸림				
0	1	2	3	4	5	6	7	8	9	10
숨차지 않음						상상할 수 없을 정도로 심하게 숨이참				
0	1	2	3	4	5	6	7	8	9	10
수면장애 없음						상상할 수 없을 정도로 심한 수면장애				
0	1	2	3	4	5	6	7	8	9	10
입맛이 좋음						상상할 수 없을 정도로 입맛이 나쁨				
0	1	2	3	4	5	6	7	8	9	10
변비 없음						상상할 수 없을 정도로 변비가 심함				
0	1	2	3	4	5	6	7	8	9	10
심신이 매우 건강하고 평안함						심신이 전혀 건강하고 평안하지 않음				
0	1	2	3	4	5	6	7	8	9	10
경제적 어려움						상상할 수 없을 정도로 경제적 어려움이 심함				

ABSTRACT (IN KOREAN)

종합병원 암 센터에서의 급성기 완화의료 병동의 성과

<지도교수 최혜진>

연세대학교 대학원 의학과

이 시 원

배경: 급성기 완화의료 병동 (Acute Palliative Care Unit)은 진행성 암 환자와 환자 가족들의 신체적, 심리적 고통을 적극적으로 조절하는 것을 목표로 한다. 또한 필요한 치료를 받을 수 있도록 환자들이 적절한 기관으로 연계되도록 돕는다. 본 연구에서는 연세암병원의 급성기 완화의료 병동을 이용한 환자들의 입원 결과를 후향적으로 분석하고 급성기 완화의료 병동을 효과적으로 운영할 수 있는 방법을 모색하고자 하였다.

연구방법: 2014년 4월부터 2015년 4월까지의 입원자료를 후향적으로 검토하였다. 급성기 완화의료 병동 입원은 총 289건이 있었고 205명의 환자가 이용하였다. 급성기 완화의료 병동에서 지내는 동안 이루어진 약물 변경과 중재시술을 조사하였다. Edmonton Symptom Assessment System(ESAS)을 사용하여 입원시점과 입원 1주일 뒤에 측정하여 증상조절을 평가하였다. 사망한 환자와 살아서 퇴원한 환자를 비교 분석하였다.

결과: 205명의 입원환자는 다음의 특징을 보였다: 남자가 53.2%, 연령 중간 값은 60세 (범위 53-69), 급성기 완화의료 병동 입원기간의 중간 값은 9일 (범위 5.0-14.0) 이었다. 간담체암과

위장관 암이 가장 많았다 (각각 $n=72$, 35.1%; $n=42$, 20.5%). 대부분의 환자들은 종양내과에서 의뢰되었다 ($n=166$, 81%). 전체 환자 중 158명(77.1%)은 이미 암에 대한 적극적인 치료가 끝난 시점에 급성기 완화의료 병동으로 의뢰되었다. 46명 (22.4%)의 환자가 급성기 완화의료 병동에서 입원 중 사망하였다. 입원기간 중 사망한 환자들은 다른 병동에서 전과되어 입실한 경우가 많았고 ($n=31$, $p=0.0006$), 입실 전 암 치료가 끝난 환자가 대부분이었다 ($n=42$, $p=0.0009$). 입원 후 피로감, 식욕저하, 호흡곤란, 변비, 우울증의 ESAS점수는 통계적으로 유의하게 증상의 호전을 보였으나, 통증은 유의한 차이를 보이지 않았다. 지속적인 치료가 필요한 환자는 호스피스 병원으로 연계가 잘 이루어졌다 ($n=40$).

결론: 연세암병원 급성기 완화의료 병동에 입원한 대부분의 환자들은 병의 말기나 암 치료를 마친 시점에 입원하였다. 전반적인 증상들은 급성기 완화의료 병동에서 지내는 동안 개선되었다. 급성기 완화의료 병동의 역할을 향상시키기 위해서는 보다 적극적인 증상관리와 조기 의뢰 시스템이 필요하다.

핵심되는 말 : 완화돌봄, 완화의료, 완화치료, 완화요법