Comparison of practice of end-of-Life care between lung cancer and non-malignant lung disease patients with Physicians Orders for Life-Sustaining Treatment

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INTRODUCTION

Lung diseases have a high risk of death and a negative influence on patients' daily functions and QoL due to issues such as dyspnea and depression.

Among patients with lung diseases, those with COPD have a high burden of symptoms and low QoL, similar to cancer patients, but they tend to receive fewer hospice and palliative care services and less drug therapy, and more life-sustaining treatment than cancer patients.

OBJECTIVE

The purpose of this study was to analyze end-of-life care practices in lung disease patients with physician orders for life-sustaining treatment (POLSTs).

METHODS

Study design

This was a retrospective study to identify the practices of life-sustaining treatment for patients with lung disease who wrote POLSTs.

Participants

The participants of this study were patients with lung disease who wrote POLSTs between January 1 and June 20, 2021, selected from patients hospitalized in the oncology department and a pulmonary ward at a tertiary hospital in Seoul, South Korea. Qualifying lung diseases included lung cancer, pneumonia, COPD, sepsis, ILD, pulmonary embolism, asthma, pulmonary edema, pulmonary hypertension, rheumatoid lung disease, and bronchitis. Among 313 confirmed patients, 13 had insufficient records, and data were analyzed for a total of 300 patients.

RESULTS (1)

Of 300 total patients, 198 had lung cancer (66.0%) and 102 had non-malignant lung diseases (34.0%). A POLST was written for 187 patients (62.3%), and an advance directive was written for 20 patients (6.7%). Subsequent treatments were hemodialysis in 13 patients (4.3%), surgery in 3 patients (1.0%), and cardiopulmonary cerebral resuscitation in 1 patient (0.3%). Among cancer patients, chemotherapy was performed in 11 patients (3.7%), targeted therapy in 11 patients (3.7%), immunotherapy in 6 patients (2.0%), and radiation therapy in 13 patients (4.3%). Depending on the type of lung disease, types of treatment differed, including hemodialysis, ventilators, bilevel positive airway pressure, high-flow nasal cannulas, nebulizers, enteral nutrition, central line, inotropic agents, and opioids.

RESULTS (2)

Table 1. Comparison of Patients Characteristics according to the Type of Lung Disease (N=300).

Characteristics	Lung cancer (n=198)	Non-malignant lung disease (n=102)	χ^2 or t	P
	n (%)	n (%)		
Sex				
Male	133 (67.2)	73 (71.6)	0.61	0.437
Female	65 (32.8)	29 (28.4)		
Age (yr)	69.57 ± 10.80	71.86 ± 10.68	-1.75	0.081
<60	29 (14.6)	8 (7.8)	4.34	0.227
60~69	70 (35.4)	34 (33.3)		
70~79	56 (28.3)	38 (37.3)		
≥80	43 (21.7)	22 (21.6)		
Education				
≤Middle school	67 (33.8)	37 (36.3)	1.09	0.581
High school	74 (37.4)	32 (31.4)		
≥College	57 (28.8)	33 (32.4)		
Religion				
Yes	112 (56.6)	51 (50.0)	1.17	0.279
No	86 (43.4)	51 (50.0)		
Marital state				
Married	193 (97.5)	100 (98.0)	-	1.000*
Unmarried	5 (2.5)	2 (2.0)		
Comorbidities				
Yes	171 (86.4)	94 (92.2)	-	0.184*
No	27 (13.6)	8 (7.8)		
POLST decision-maker				
Patient	131 (66.2)	56 (54.9)	3.64	0.057
Family member	67 (33.8)	46 (45.1)		
Level of consciousness				
Alert	133 (67.2)	69 (67.6)	1.94	0.585
Drowsy	14 (7.1)	7 (6.9)		
Confused	32 (16.2)	12 (11.8)		
Unresponsive	19 (9.6)	14 (13.7)		
ECOG				
1	9 (4.5)	8 (7.8)	3.99	0.262
2	48 (24.2)	17 (16.7)		
3	54 (27.3)	25 (24.5)		
4	87 (43.9)	52 (51.0)		
Advance directives				
Yes	13 (6.6)	7 (6.9)	0.01	0.922
No	185 (93.4)	95 (93.1)		

Table 2. Treatment Status after Physician Orders for Life-Sustaining Treatment (N=300).

Characteristics	Total	Lung cancer (n=198)	Non-malignant lung disease (n=102)	χ^2 or t	P
	n (%)	n (%)	n (%)		
Treatment					
CPCR	1 (0.3)	1 (0.5)	0 (0.0)	-	1.000*
Hemodialysis	13 (4.3)	2 (1.0)	11 (10.8)	-	<0.001*
Surgery	3 (1.0)	3 (1.5)	0 (0.0)	-	0.212*
Chemotherapy	11 (3.7)	11 (5.6)	-		
Targeted therapy	11 (3.7)	11 (5.6)	-		
Immunotherapy	6 (2.0)	6 (3.0)	-		
Radiation therapy	13 (4.3)	13 (6.6)	-		
Respiratory device					
Ventilator	29 (9.7)	12 (6.1)	17 (16.7)	8.67	0.003
BiPAP	16 (5.3)	6 (3.0)	10 (9.8)	6.12	0.013
HFNC	116 (38.7)	64 (32.3)	52 (51.0)	9.88	0.002
Nebulizer	48 (16.0)	21 (10.6)	27 (26.5)	12.61	<0.001
Nutrition					
Enteral nutrition	30 (10.0)	13 (6.6)	17 (16.7)	7.63	0.006
Parenteral nutrition	205 (68.3)	133 (67.2)	72 (70.6)	0.36	0.547
Invasive procedure					
Central line	27 (9.0)	13 (6.6)	14 (13.7)	4.21	0.040
PICC	71 (23.7)	48 (24.2)	23 (22.5)	0.11	0.744
PCD	35 (11.7)	28 (14.1)	7 (6.9)	3.46	0.063
PTBD	4 (1.3)	2 (1.0)	2 (2.0)	-	0.607*
Transfusion					
RBC	36 (12.0)	22 (11.1)	14 (13.7)	0.44	0.509
FFP	13 (4.3)	7 (3.5)	6 (5.9)	-	0.377*
PC	19 (6.3)	11 (5.6)	8 (7.8)	0.59	0.441
Others	4 (1.3)	2 (1.0)	2 (2.0)	-	0.607
Medication					
Inotropic agents	50 (16.7)	22 (11.1)	28 (27.5)	12.94	<0.001
Opioids	201 (67.0)	145 (73.2)	56 (54.9)	10.23	0.001

CONCLUSIONS

This study is meaningful in comprehensively investigating the practice of life-sustaining treatment for both non-malignant lung diseases and lung cancer after POLSTs were written. Although the goals of hospice care are the same whether a patient has lung cancer or a nonmalignant lung disease, because the characteristics of the respective diseases differ, end of life care practices and hospice approaches must be considered differently.

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