



Palliative Care in the New Era of Lung Cancer Treatment

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Lung cancer remains the most common malignancy and is recognized as having significant impact on quality of life. Advances in lung cancer treatment over the past decade have been significant, with new agents extending life, even in late-stage disease. The purpose of this study was to evaluate palliative care needs and use of supportive care services in a randomly selected sample (N = 99) of patients with lung cancer. Results indicated that despite treatment advances, these patients continue to have significant symptom and quality of life concerns and to receive limited palliative care or supportive care services. Integration of palliative care is needed in the new era of lung cancer treatment.

KEY WORDS

lung cancer, palliative care, supportive care referrals

Lung cancer remains the leading cause of cancer related mortality in the world.¹ Despite the significant progress made in screening, diagnosis, and treatment leading to improvement in survival, the disease remains incurable for most patients. With the advent of targeted therapies against oncogenic drivers and immune-checkpoint inhibitors to promote host antitumor response, lung cancer has seen tremendous advances over the past decade.²⁻⁸ It is indeed what many have recognized as a new era in lung cancer treatment. The current status of lung cancer and its treatment also means there is a need for palliative care to address quality of life (QOL) and symptom concerns.

For most of the last century, surgery and/or radiation were the standard treatment modalities utilized in patients with stage I to III non-small cell lung cancer (NSCLC). The incorporation of chemotherapy modestly improved cure

rates over surgery alone. Efforts continued in the 2000s with research focusing on incorporating adjuvant treatment vascular endothelial growth factor inhibitors, biologic agents, and vaccines, but these agents failed to significantly improve cure rates. The success in the use of checkpoint inhibitors in treatment of metastatic stage IV NSCLC led to studies of these agents in patients with early-stage resectable disease. IMpower010 was a randomized phase III trial comparing atezolizumab (PDL1 inhibitor) with best supportive care in patients with stage IB to IIIA NSCLC after surgical resection and adjuvant chemotherapy. With the median follow-up of 32.2 months, atezolizumab produced statistically significant improvement in disease-free survival in patients with stage II to IIIA cancer whose tumors expressed PDL1 on 1% or more on tumor cells (hazard ratio, 0.66). Based on this trial, atezolizumab was approved by regulatory agencies and is recommended treatment. With advances in the treatment of lung cancer, palliative care remains important to address symptom and QOL concerns.

In the previous decades, the key questions regarding treatment of advanced NSCLC focused on histology, performance status, and comorbidities. In the year 2022, the focus shifted to defining the molecular subtype of lung cancer, the presence of a targetable genomic alteration, and to determining the first-line systemic treatment. There are also ongoing clinical trials for new emerging targets.

The incidence of lung cancer remains high throughout the world. Survival times have increased with the integration of molecular subtyping of lung cancer and advances in targeted agents and immunotherapy. Identifying new targets, identifying mechanisms of resistance to current therapy, development of new agents, and also early introduction of palliative care remain high priority in the management of lung cancer. Each new agent has brought a unique set of toxicities and enduring effects, and each requires patient and family teaching as well as aggressive assessment and management of symptoms and QOL by nurses. Palliative care remains as important as ever before despite treatment advances to provide quality care in lung cancer.

METHODS

In 2006, researchers representing nursing, medical oncology, and surgery in an National Cancer Institute Comprehensive Cancer Center conducted a study to assess symptom and

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QOL concerns of patients with NSCLC. Charts from 100 patients with newly diagnosed lung cancer were assessed over 12 months. Key results included that most (82%) were symptomatic at the time of diagnosis, with pain, cough, dyspnea, and fatigue as the most common concerns. Despite significant QOL and symptom concerns, only 64% obtained referral to any supportive care services (eg, pain management, palliative care, physical or occupational therapy, social work, or chaplaincy). Forty-nine percent of hospital admissions were related to uncontrolled symptoms. This chart audit subsequently led investigators to design and implement supportive care interventions for patients with NSCLC and their family caregivers.⁹ These strategies were interdisciplinary and resulted in improved outcomes for patients, family caregivers, and resource utilization.

In 2022, investigators in this setting repeated the previous survey in order to assess the current status of supportive care for this population. The research team felt that a repeat survey was especially important given major changes in NSCLC treatment over the past 10 years. Repeating the methods of the earlier study, a chart audit was conducted with 99 patients with NSCLC who were selected from 2019. This year was used to obtain data before the COVID pandemic because care during the pandemic was very disrupted and many supportive care resources were limited.

The chart audit included 6 months of chart review. A research nurse reviewed charts (N = 99) randomly selected by the Cancer Center biostatistics department. Patients with NSCLC receiving care in 2019 were included.

RESULTS

Demographic Data

The patient demographics and treatment data are presented in Table 1. Fifty six percent were non-Hispanic White. Eighty-two percent were diagnosed outside the tertiary cancer center, with stage IV as the most common stage at diagnosis (42%). Twenty eight percent of patients had a previous cancer diagnosis. Patients had numerous comorbidities with hypertension, diabetes, other pulmonary disease and hyperlipidemia most common. Fifty percent had received surgery, 59% had chemotherapy, and 46% received radiation therapy.

Chart Audit Data

Symptoms were reported frequently, with the most frequent being pain (78%), fatigue (55%), dyspnea (52%), and cough (51%) (Table 2). Numerous symptoms were reported consistent with literature reporting extensive symptoms associated with lung cancer and treatment.

Table 3 presents the data regarding advanced directives and code status. A small percentage of patients had an advance directive (14%) on admission to the cancer center, and at follow-up 6 months later, only 7% additional patients completed an advance directive. Only 21% had an

TABLE 1 Patient Demographic and Treatment Data (N = 99)

	N	%
Ethnicity		
Non-Hispanic White	55	56
Hispanic	9	9.1
African American	8	8.1
Asian/Pacific Islander	26	26.3
Unknown	1	1.0
Initial diagnosis		
At the tertiary cancer center	18	18.2
At another hospital/facility	81	82
Clinical stage at time of audit		
Stage I	28	28.3
Stage II	10	10.1
Stage III	18	18.2
Stage IV	42	42.4
No stage at time of audit	1	1.0
Previous cancer diagnosis		
Yes	28	28.3
No	70	71
Type of cancer diagnosis		
Bladder	5	5.1
Breast	4	4.4
Prostate	6	6.1
Skin	9	9.1
Other type of cancer diagnosis	8	8.1
Comorbidities		
None	11	11.1
Heart disease	11	11.1
Hypertension	51	51.5
Diabetes	26	26.3
Pulmonary disease	22	22.2
Hyperlipidemia	54	55

(continues)



TABLE 1 Patient Demographic and Treatment Data (N = 99), Continued

	N	%
Hypothyroid	15	15.2
Gastrointestinal	20	20.2
Other comorbidities	54	55
Surgery		
Yes	6	6.1
No	18	18.2
Chemotherapy		
Yes	3	3
No	18	18.2
Radiation		
Yes	1	1
No	23	23.2

recommended a clinical trial based on her genetic testing and is optimistic that she will have a good response with prolonged survival. Jasmine's goal is to live as long as possible to see her sons grown. After 2 doses of chemotherapy, Jasmine has experienced several symptoms, including anxiety, insomnia, peripheral neuropathy, and nausea. She is very fearful that she will have to stop treatment if her symptoms cannot be relieved. A palliative care team consult is requested to assist with managing her symptoms and provide psychosocial support.

Case 2: Patient Transitioning From Disease-Focused Care to Supportive Care

Ken is a 78-year-old retired Army Sargent, African American, and divorced with 1 son who lives across the country. Ken was diagnosed with stage IV NSCLC 4 years ago and was treated with surgery, chemotherapy, and radiation. He has continued on an oral agent and far exceeded the initial prognosis. Ken's latest scans reveal extensive disease recurrence and he has also experienced an escalation of symptoms

TABLE 2 Symptoms

Symptoms Over 6 Months of Audit	N	%
Nausea	24	24.2
Pain	77	78
Vomiting	9	9.1
Weight loss	13	13.1
Cough	50	51
Neurologic	15	15.1
Skin rash	24	24.2
Dyspnea	51	52
Fatigue	54	55
Bleeding/anemia	13	13.1
Problems sleeping	13	13.1
Appetite problems	28	28.3
Constipation	24	24.2
Diarrhea	19	19.2
Other symptoms (top 3)	31	31.3
Lower extremity weakness	3	3.0
Weakness	5	5.1
Fever	2	2

identified proxy decision maker. Code status for patients on admission and 6 months later remained full code for all but 1 patient.

Supportive care referrals were documented based on the chart audit (Table 4), with 63% of the patients with lung cancer receiving no supportive care services. All other services were accessed by 17% or less of the patients. This included referral to pain and symptom management or to palliative care.

The chart audit also documented the number of patients who had unscheduled encounters such as urgent care, emergency department, or unscheduled clinic visits (Table 5). Sixty-eight percent of patients had such an encounter, with pain as the most frequent symptom resulting in the visit. Twenty percent of the subjects had an unscheduled hospital admission, with dyspnea as the most frequent symptom resulting in hospital admission (Table 6).

CASE EXAMPLE

To further describe the application of hospice and palliative care to patients receiving current therapies for lung cancer, the following 3 cases are provided.

Case 1: Patient Initiating a Clinical Trial

Jasmine is a 48-year-old Armenian woman recently diagnosed with stage III NSCLC. She is otherwise healthy, is married, and has 3 teenage sons. Her husband is older and has several health problems. Her oncologist has



TABLE 3 Advance Directive and Code Status

	N (%)
Advance directive upon entry	
Yes	14 (14.1)
No	85 (86)
Advance directive completed any time during audit	
Yes	7 (7.1)
No	92 (93)
Proxy decision maker	
Yes	21 (21.2)
No	78 (79)
Code status at start of audit	
Full	99 (100)
DNR	–
Code status at end of audit	
Full	98 (99.0)
DNR	1 (1.0)

Abbreviation: DNR, do not resuscitate.

TABLE 5 Unscheduled Encounters

	N (%)
Unscheduled encounters	
Yes	67 (68)
No	32 (32.3)
Total encounters over 6-month audit	
1 encounter	16 (16.2)
2-4 encounters	29 (29.3)
≥5 encounters	16 (16.2)
Unscheduled urgent care encounters	
1 encounter	14 (14.1)
2-4 encounters	3 (3.0)
≥5 encounters	–
Unscheduled phone call encounters	
1 encounter	21 (21.2)
2-4 encounters	30 (30.3)
≥5 encounters	15 (15.2)
Unscheduled encounter reasons ^a	
Pain	40 (40.4)
Other	38 (38.4)
Cough	19 (19.2)
Dyspnea	15 (15.2)
Constipation	11 (11.1)
Nausea	10 (10.1)

^aMultiple reasons.

including dyspnea, cough, and weight loss and further evaluation reveals he has heart failure. His oncologist does not believe Ken can tolerate further therapy and it is time to shift to comfort-focused care.

TABLE 4 Supportive Care Referrals

Supportive Care Referrals ^a	N (%)
None	62 (63)
Rehabilitation (PT/OT/speech)	17 (17.2)
Social work	11 (11.1)
Nutrition	11 (11.1)
Pain and symptom management	10 (10.1)
Palliative care	4 (4.0)
Psychiatry	2 (2.0)
Psychology	1 (1.0)

Abbreviations: PT, physical therapy; OT, occupational therapy.
^aMultiple referrals.

The palliative care team consults with Ken and his oncology providers to plan his care. Ken plans to move to a rural area to be near his sister who is his only relative available for support. The team arranges for a virtual family meeting to help Ken in explaining his status to his son and sister. The palliative care nurse is in communication with a rural home-based palliative care and hospice program to arrange for care. The team also recognizes Ken's sadness in this change in goals and has arranged for the team social worker to meet with him to offer support in the transition. The palliative care nurse also has met with the oncology clinic staff to offer support as they have become very close to Ken over the years of his care.

TABLE 6 **Unscheduled Admissions**

	N (%)
Unscheduled admissions	
Yes	20 (20.2)
No	79 (80)
Total admissions over 6-month audit	
1 admission	16 (16.2)
2 admissions	4 (4.0)
Unscheduled admissions reasons	
Dyspnea	13 (13.1)
Other ^a	9 (9.1)
Pain	4 (4.0)
Constipation	1 (1.0)
^a Multiple reasons.	

Case 3: Hospice Care

Henry is an 80-year-old Hispanic man with a large supportive family. He was diagnosed with stage III lung cancer 6 years ago and has received targeted chemotherapy and radiation. Henry and his family are very devout Christians and they attribute his survival to “the power of prayer.” Over the past 2 months, Henry has had 3 urgent care visits because of dyspnea and pain. His scans reveal a recurrence of lung cancer with metastasis to the spine and pelvis. Henry has no advance directive and is a full code. A palliative care nurse meets with Henry, his oncologist, and his family to discuss this significant change in his status. Although initially resistant, after discussion, Henry and his family understand the change in status and the oncologist estimates his prognosis is likely 3 to 4 months. Hospice is recommended and the palliative care nurse describes the many benefits of hospice to be initiated as soon as possible to provide symptom management, family support, and chaplaincy.

DISCUSSION

This study illustrates the continuing challenges in providing optimum palliative care to patients with NSCLC, despite the importance of this care. The study sample included 28% of patients with stage 1 diagnosis, consistent with greater efforts in screening and earlier diagnosis. However, 42% of the patients had stage IV disease. As patients are living longer, many presented with comorbidities (89%) and 28% had a previous cancer diagnosis. The presence of

other diagnoses and comorbidities adds to the need for palliative care. Lung cancer also remains as a disease with multiple treatments (chemotherapy, surgery, and radiation therapy), adding to the experience of symptoms and QOL concerns.

Patients in this sample had a high frequency of symptoms, including pain, fatigue, dyspnea, and cough, known to greatly impact function and QOL. These factors also make lung cancer recognized as having a significant burden on family caregivers as they manage the care of these patients. Prolonged patient survival has also prolonged the time of caregiving. Despite major national attention over the past decades given to the importance of advanced directives, this study sample did not indicate optimum use of guidelines consistent with national recommendations and clinical practice guidelines.¹⁰⁻¹³ The results indicated low use of advance directives or proxy decision maker designation and that patients remained at full code status. These findings also reflect the “new era” of lung cancer treatment in which patients continue on disease-focused therapies and delay shifting to goals of care directed toward comfort.

The limited use of palliative care and support services was then reflected in the outcomes of unscheduled outpatient and urgent care visits and hospice admissions, reinforcing that lack of palliative care focus is associated with high resource utilization. This association is of great importance given the current economic burden on the health care system for chronic illness care.

As illustrated in the case examples, palliative care remains essential to lung cancer care. The advances in lung cancer treatment with new targeted agents have heightened the need for palliative care as patients live longer but often with symptom and QOL concern.

The study findings also reinforce the need for close collaboration between oncology and palliative care clinicians. It is essential that oncology clinicians serve as palliative care generalists across the trajectory of disease and that palliative care specialists provide support and consultation.¹⁴

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