Conformance With Supportive Care Quality Measures Is Associated With Better Quality of Life in Patients With Cancer Receiving Palliative Care

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Abstract

Purpose: As palliative care further integrates into cancer care, descriptions of how supportive care quality measures improve patient outcomes are necessary to establish best practices.

Methods: We assessed the relationship between conformance to 18 palliative care quality measures and quality of life from data obtained using our novel point-of-care, electronic quality monitoring system, the Quality Data Collection Tool for Palliative Care (QDACT-PC). All patients with cancer from January 2008 through March 2011 seen in the Carolinas Palliative Care Consortium were evaluated for demographic, disease, prognostic, performance status, and measure conformance variables. Using univariate and multivariate regression, we examined the relationship between these variable and high quality of life at the initial specialty palliative care consultation.

Results: Our cohort included 459 patients, the majority of whom were over age 65 years (66%) and white (84%). Lung (29.1%) and GI (24.7%) cancers were most common. In univariate analyses, conformance to assessment of comprehensive symptoms, fatigue and constipation assessment, timely management of pain and constipation, and timely emotional well-being assessment were associated with highest levels of quality of life (all Ps < .05). In a multivariate model (C-stat = 0.66), performance status (odds ratio [OR], 5.21; P = .003), estimated life expectancy (OR, 22.6; P = .003), conformance to the measure related to emotional well-being assessment (OR, 1.60; P = .026), and comprehensive screening of symptoms (OR, 1.74, P = .008) remained significant.

Conclusion: Oncology care pathways that routinely incorporate supportive care principles, such as comprehensive symptom and emotional well-being assessments, may improve patient outcomes.

Introduction

With continued implementation of health care reform comes greater use of quality measures to evaluate care and inform process improvement. The Patient Protection and Affordable Care Act mandates implementation of quality measures for audit purposes in no less than 21 programs across several care settings, including hospitals, clinics, long-term care facilities, and home-based care. In parallel, there is a growing movement toward the provision of nonhospital, community-based palliative care; care of heterogeneous populations of patients with varying illnesses, disease severity, and health care needs in a variety of clinical settings (home, hospice, nursing home, hospital) is becoming the norm.[1] The complexity and diversity of these scenarios demand an approach to quality monitoring that is aligned with where community-based palliative care is provided.[2]

Delivery of care for the most vulnerable, including those with advanced cancer, requires the further coordination between all members of the patient's clinical team.[3] This includes shared delivery of high-quality palliative care that supports domains like quality of life, symptom management, psychosocial distress, and others.[4] Since the publication of the landmark trial of palliative care plus usual oncology care versus usual oncology

care alone,[5] many have pondered the question, "What components of palliative care must be delivered consistently to achieve improved outcomes?" To date, specific palliative care assessments and interventions, deployed alongside concurrent care with other providers, have infrequently been studied for the potential to improve the experience of patients with advanced cancer. To understand this further, we investigated the relationship between quality measure–based care and quality of life in patients with cancer in our community-based palliative care consortium.

Methods

We implemented a novel, prospective, electronic quality monitoring system to collect information on quality measure conformance called the Quality Data Collection Tool (QDACT). For this study we used a version of QDACT, QDACT-Palliative Care (QDACT-PC), specifically aligned for the needs of assessment in the community-based palliative care setting. QDACT-PC is a patient-reported, provider-entered, quality measure–based needs assessment system deployed in a community palliative care collaborative.[6] In partnership with four organizations in North Carolina called the Carolinas Consortium for Palliative Care,[7] we have previously demonstrated the feasi-

bility[8] and utility[9] of incorporating QDACT-PC into the community palliative care workflow.

For this study, we analyzed de-identified data collected with QDACT-PC. The cohort included all patients with cancer receiving care in Carolinas Consortium sites from January 2008 through March 2011. Variables reflected National Quality Forum quality domains for palliative care,[10] including symptom assessment and psychosocial needs. Other variables included demographic and disease information; provider prognostic estimation; and performance status as measured by the Palliative Performance Scale (PPS),[11] a modification of the Karnofsky Performance Status scale frequently used in palliative care.

Quality measures for evaluation were selected from three national quality assessment programs for supportive oncology and palliative care based on Consortium clinician interests and availability of data within our registry. The 18 total evaluable measures included five from the ASCO Quality Oncology Practice Initiative (QOPI),[12] four from the Cancer-ASSIST (Assessing Symptoms, Side Effects, and Indicators of Supportive Treatment) set of measures by Dy et al,[13] and nine from the Carolinas Center for Medical Excellence Hospice PEACE (Prepare. Embrace. Attend. Communicate. Empower.) project.[14] Using the quality measure definitions, we evaluated conformance with each metric during the initial palliative care consultation visit. We defined an emotional well-being assessment as the assessment of either depression or anxiety. A comprehensive symptom assessment was defined as the documentation of severity of three or more symptoms. Quality of life (QOL) was assessed during the clinical visit by the palliative care provider and recorded as "poor," "fair," or "good."

Descriptive statistics were calculated. Univariate and multivariate logistic regression were calculated for the outcome "good" QOL controlling for variables of age ($>$ 65 years or $<$ 65 years), sex, performance status (PPS 0 to 30, PPS 40 to 60, PPS 70-100), clinician-predicted life expectancy (hours to days plus days to weeks, weeks to months plus 4 to 6 months, and $>$6 months) and measure conformance ("yes" v "no"). All analyses were approved by the Duke University institutional review board.

Results

The cohort included 459 patients, the majority of whom were over age 65 years (66%) and white (84%). Lung (29.1%) and GI (24.7%) cancers were most common. Cancer stage and concurrent cancer-directed therapies were not available for analysis. Provider-estimated prognosis was fairly distributed, including people expected to live for more than 6 months (28%) and people in their last days of life (24%). The distribution of PPS reflected an ill population with dependence on assistance for some activities of daily living (Table 1).

Conformance with selected measures is presented in Table 2. Conformance varied and was particularly low for timely management of symptoms such as constipation. In univariate analyses, conformance was associated with the highest levels of quality of life for a variety of measures. Strong relationships were found between high quality of life and assessment of com-

Table 1. Characteristics of Patients With Cancer Receiving Palliative Care

Characteristic	No.	%
Total No. of patients	459	100
Age, years		
< 65	140	30.4
≥ 65	303	65.9
Missing	17	3.70
Sex		
Male	204	44.4
Female	239	52.0
Missing	17	3.70
Race/ethnicity		
African American	49	10.7
White	385	83.7
Other	3	0.65
Missing	23	5.00
Cancer type		
GI	113	24.7
Hematologic malignances	24	5.5
Lung	133	29.1
Genitourinary	72	15.8
Breast	39	8.5
Other	76	16.6
Missing	2	0.65
Life expectancy		
Hours to days or days to weeks	124	23.9
Weeks to months or 4 to 6 months	243	39.6
> 6 months	68	28.4
Missing	25	5.43
Palliative Performance Scale level, %		
10-30	182	40.0
40-60	196	42.6
70-100	36	8.0
Missing	46	10.00

prehensive symptoms, assessment of fatigue and constipation, and timely management of symptoms including pain and constipation (all Ps $<$ .05). Focusing on ASCO QOPI, there was a particularly strong association between conformance with the emotional well-being assessment measure and high QOL ($P =$ .001); we analyzed this in the first visit and not the second visit as is defined in the current measure definition. Conformance with other measures was not necessarily related to high levels of QOL, such as in dyspnea or depression assessment. This was either a lack of a true association or too small of a nonconformance cohort to power an adequate comparison.

In a multivariate model (C-stat $=$ 0.66) that included demographic factors, PPS, estimated life expectancy, and quality measures conformance, the following were significant predictors of high QOL: PPS (odds ratio [OR], 5.21; $P =$ .003), estimated life expectancy (OR, 22.6; $P =$ .003), conformance with the measure related to emotional well-being assessment (OR, 1.60; $P =$ .026), and conformance with the measure

Table 2. Univariate analyses of Quality Measures Associated With High Quality of Life

Metric Set	Specific Metric	Conformance Across Whole Sample (%)	P
QOPI	Pain assessed by second office visit*	99.13	NS
	Plan of care for moderate or severe pain documented*	30.58	.036
	Constipation assessed at time of narcotic prescription	90.16	.014
	Patient emotional well-being assessed by second office visit	68.04	.001
	Dyspnea addressed appropriately*	15.63	NS
PEACE	Standard assessment for depression	84.57	NS
	Screening of symptoms during first visit	41.09	.001
	Percentage of patients screened for pain during the admission visit*	99.13	NS
	For patients who screened positive for pain, the percentage with any treatment within 1 d of screening*	2.41	NS
	Percentage of patients who were screened for shortness of breath during the admission visit*	98.70	NS
	For patients who screened positive for dyspnea, the percent who receive treatment within 1 d of screening*	7.05	NS
	For patients who screen positive for constipation, the percentage who receive treatment within 1 d of screening	4.99	.062
	For patients who screen positive for depression, the percentage who receive further assessment, counseling or medication treatment	3.68	NS
	Percentage of patients with chart documentation of their preference for life-sustaining treatments	99.78	NS
Cancer-ASSIST	If a cancer patient has a cancer-related outpatient visit, then there should be screening for the presence or absence and intensity of pain using a numeric pain score*	98.96	NS
	If depression is diagnosed in a patient with cancer, then a treatment plan for depression should be documented	3.68	NS
	If a patient with cancer is seen for an initial visit or any visit while undergoing chemotherapy at a cancer-related outpatient site, then there should be an assessment of the presence or absence of fatigue	80.22	.014
	If an outpatient with primary lung cancer or advanced cancer reports new or worsening dyspnea, then she or he should be offered symptomatic management or treatment directed at an underlying cause within 1 mo*	10.81	NS

Abbreviations: ASSIST, Assessing Symptoms, Side Effects, and Indicators of Supportive Treatment; PEACE, Prepare. Embrace. Attend. Communicate. Empower.; NS, nonsignificant; QOPI, Quality Oncology Practice Initiative.
*Measure concepts included in NQF-endorsed Palliative Care measures.

related to comprehensive screening of symptoms (OR, 1.74, $P = .008$).

Discussion

Certain care processes aligned with published quality measures are associated with high QOL in patients with cancer receiving a palliative care consultation. This may particularly involve timely and regular assessments of symptom-related distress. We hypothesize that timely assessments lead to expedited evaluation and management, although this is a question to be tested. In addition, the importance of an emotional well-being assessment, even during the initial visit, cannot be ignored. Further, and what may the most important finding, is that even with advanced disease, patients with cancer can still experience good QOL, underscoring the need for oncologists to address these needs regardless of the patient's functional status, illness severity, or prognosis.

Several of the quality measures used for analysis correspond to ongoing national efforts for quality assessment in palliative care. The National Quality Forum recently endorsed 14 measures for palliative care (Table 2), soon to be implemented across several Centers for Medicare and Medicaid Services programs. Our analysis includes many of these measure concepts

and further demonstrates that we can—and should—test the relationship between conformance with proposed measures and impact on patient-centered outcomes before wide-scale implementation. Naturally, achieving quality measure conformance change through the provision of quality improvement efforts, and demonstrating that those interventions lead to meaningful change in patient outcomes, remain the ultimate goal.

There are several important limitations to this study. First, this is a cross-sectional analysis that reflects only a snapshot in time. Subsequent analyses will focus on how change in conformance relates to improvement in patient QOL, symptom control, and survival. Second, we cannot attribute increased conformance with a quality measure or patient QOL to any specific clinician. For example, the demonstration that meeting the quality measure on performing comprehensive symptom assessment and its association with high QOL cannot be automatically attributed to the palliative care clinician alone. The more important conclusion is that delivery of specific aspects of care, in this example more likely by the oncology providers preceding the consultative palliative care visit, is associated with the improved patient experience. Third, there may be patient features that align with both higher conformance and higher

QOL; for example, people who are more forthcoming with their symptom information may be the same individuals who have a higher QOL.

Care pathways that routinize components of supportive care can lead to improved patient outcomes. Our findings of the importance of symptom and psychosocial assessment are a start; further research must be conducted to develop the evidence base for integration of palliative care into oncology care.

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