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Association of goals of care meetings for hospitalized cancer patients at risk for critical care with patient outcomes

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Abstract

Background—Caring for cancer patients with advanced and refractory disease requires communication about care preferences, particularly when patients become ill enough to be at risk for critical care interventions potentially inconsistent with their preferences.

Aim—To describe the use of goals of care discussions in patients with advanced/refractory cancer at risk for critical care interventions and evaluate associations between these discussions and outcomes.

Design—Cohort study describing patients/families' perceptions of goals of care meetings and comparing health care utilization outcomes of patients who did and did not have discussions.

Setting/participants—Inpatient units of an academic cancer center. Included patients had metastatic solid tumors or relapsed/refractory lymphoma or leukemia and were at risk for critical care, defined as requiring supplemental oxygen and/or cardiac monitor.

Results—Of 86 patients enrolled, 34 (39%) had a reported goals of care discussion (study group). Patients/families reported their needs and goals were addressed moderately to quite a bit during the meetings. Patients in the study group were less likely to receive critical care (0% vs 22%, $p = 0.003$) and more likely to be discharged to hospice (48% vs 30%, $p = 0.04$) than the control group. Only one patient in the study group died during the index hospitalization (on comfort care) (3%) compared with 9(17%) in the control group ($p = 0.08$).

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Declaration of conflicting interests

The authors declare that there is no conflict of interest.

Conclusion—Goals of care meetings for advanced/refractory cancer inpatients at risk for critical care interventions can address patient and family goals and needs and improve health care utilization. These meetings should be part of routine care for these patients.

Keywords

Palliative medicine; goals of care; critical care; communication; hospice; readmissions; hospital care; intensive care; palliative care

Introduction

Critically ill patients with advanced or refractory cancer often have poor outcomes.¹ Some of these patients may prefer palliative to aggressive care.² However, patients often receive critical care as the default because providers, patients and families have not discussed end-of-life preferences, and patients who receive critical care are sometimes those unlikely to benefit.³ The American College of Chest Physicians and others recommend communication about goals of care at cancer diagnosis and throughout treatment,⁴ and research shows that discussions about end-of-life care preferences are associated with reduced likelihood of critical care and resuscitation.⁵ Yet even with this strong evidence and guidelines, end-of-life discussions only occur about half the time.⁹

The objectives of this study were (1) to describe the use of goals of care meetings in patients with advanced or refractory cancer at risk for critical care interventions and (2) to evaluate associations between goals of care meetings and patient outcomes in this population.

Methods

Study design

This was a pilot cohort study of hospitalized cancer patients at risk for critical care in an academic center. According to Steering Committee of the European Association for Palliative Care recommendations,¹⁰ we included participants with metastatic solid tumor or refractory leukemia or lymphoma and/or estimated prognosis of 6 months or less. Risk factors for critical care included being on a cardiac monitor and/or supplemental oxygen, as identified in our previous research.¹

We identified eligible hospitalized patients by reviewing electronic medical records. A study team member approached patients' physicians to determine the team's willingness to have a goals of care meeting or whether a meeting had already occurred. If no meeting had occurred, we offered to help facilitate. We developed an outline of structured goals of care discussions (supplemental file available online). Briefly, the purpose of the meeting was defined as information sharing, including the situation, goals and preferences; identifying a plan, including goals and potential treatments and their benefits and burdens; and coordination and discharge planning needs. We obtained verbal consent. We included patients whose physician did not give permission or where the physician felt a meeting was not indicated or appropriate in the control group. We enrolled patients from August 2012 to December 2013.

Comparison groups and study outcomes

Patients with a meeting (either as reported by the physician or requested by the study team) (study group) were compared to those without (control group). Patients were categorized as having a goals of care meeting if either (1) it occurred after study enrollment after the study team discussed the need for a meeting with the oncology team or (2) a physician stated that a goals of care meeting had recently occurred during the hospitalization. If we identified a patient before the meeting was held, we gave the patient/proxy the American Society of Clinical Oncology (ASCO) “Advanced Cancer Care Planning” booklet and a brochure we developed (Supplemental File). Meetings were led by the oncology team and were not standardized.

We evaluated three sets of outcomes. We conducted medical record reviews to determine how meetings were documented and to determine outcomes, including use of critical care (ventilator and/or continuous veno-venous hemofiltration dialysis (CVVHD)), health care utilization, and discharge status. We also gave a survey to patients/proxies who had a meeting. We adapted validated tools^{11,12} to evaluate needs, goals, and perceptions of the meeting. Subjects rated the importance of needs and goals and how well the goals were addressed during the meeting, as adapted from a needs assessment questionnaire for hospitalized cancer patients.^{11,13}

Analysis

For each instrument on the survey, we descriptively examined distributions of scores and open-ended comments on the survey. We descriptively analyzed the meeting and patient characteristics. We used Fisher’s exact test to compare differences in outcomes for the group with reported meetings versus those without. We used Wilcoxon signed-rank sum test to compare mean scores of rankings of the importance of goals of care to reports of the extent each goal was discussed during the meeting. We conducted analyses using STATA 12.0. The Johns Hopkins School of Medicine Institutional Review Board approved the study.

Results

Of 86 individuals enrolled, 34 (39%) had a reported goals of care meeting. Characteristics are in Table 1. Overall, patients reported their needs were addressed “moderately” to “quite a bit.” The highest rated needs were more openness from providers, better management of symptoms and (receiving) more understandable information (Table 2). Patients rated all goals highly, with average scores from 4.2 to 4.7. The highest rated goal was maximizing survival time, which was also the goal rated most extensively discussed during the meeting (Table 3).

Patient/family-reported options for patients’ care during the meeting ranged from discussion of inserting stents and additional chemotherapy to plans for the patients’ future care, including hospice, home care and quality of life. Reported decisions made varied from “no decision is final” to “getting myself better” and “do not resuscitate.” The main decisions varied from “me dying” to “to attempt chemo/radiation therapy to give her as much time as possible.”

Patients in the study group were significantly less likely to receive critical care (use of ventilation and/or CVVHD) (0% vs 22%, $p = 0.003$) than the control group, but there were no significant differences in Do Not Resuscitate/Do Not Intubate (DNR/DNI) orders (71% in meeting vs 56% in no meeting group, $p = 0.18$). The study group was significantly more likely to be discharged to hospice than the control group (48% vs 30%, $p = 0.04$), but there was no significant difference in readmissions (15% vs 30%, $p = 0.18$). Only one patient (3%) died in the study group during the study hospitalization, on comfort care, compared to 9 patients (17%) in the control group ($p = 0.08$) (Table 4).

Discussion

In this pilot cohort study, we demonstrated that goals of care meetings could be incorporated into care for advanced/refractory cancer patients at risk of critical care interventions during a hospitalization. Although the sample size was small, there was some evidence that health care utilization was more appropriate for patients and families who had these meetings, with significantly less use of critical care (ventilation and/or CVVHD) and more discharges with hospice. Patients thought their needs were addressed moderately well during the meetings. Meetings focused primarily on medical management, including survival time, use of all available anticancer treatments, and symptom management.

To our knowledge, this is the first published study to establish the importance of these discussions for patients at risk for critical care, although multiple previous studies have evaluated their use in patients already admitted to an intensive care unit. A recent systematic review of this evidence found 11 studies, 10 of which were in intensive care; 77% found improvement in health care utilization. Few studies evaluated other outcomes such as family satisfaction, and findings were mixed for those outcomes.⁹

Goals of care meetings, particularly when conducted by the usual care team and facilitated by palliative care, improves patient- and family-centered outcomes, as well as utilization in the intensive care unit setting.^{15,16} In our study, patients and proxies rated almost all needs and goals highly. Significant barriers remain both to having goals of care meetings and to quality communication. Only onethird of patients in this study had a meeting, and some physicians felt having a meeting was not appropriate despite the patient meeting study criteria. For example, one physician commented that the patient was just told about a poor prognosis and having a meeting would just upset him.

Our study has several limitations. This was not a randomized study, and some patients in the control group had some discussions about goals. However, despite this, we did observe some significant differences. This selection bias may be mitigated by the fact that all patients enrolled into the study were ill with advanced cancer or limited prognosis. Our study was too small to adequately evaluate rare outcomes, and survey results are descriptive only. However, these initial results form a promising foundation for further studies on improving communication for these patients.

Conclusion

Goals of care meetings offer time for advanced cancer patients, families, and providers to communicate about goals for care. Although many challenges, including coordination of care, can prevent these meetings from occurring, conducting these meetings is an important priority for these patients and may improve concordance between patients' preferences and health care utilization.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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What is already known about the topic?

- Critically ill cancer patients with advanced or refractory disease have poor outcomes with a 30% 6-month survival rate.
- Previous studies have found that structured communication about goals of care can reduce intensive care unit length of stay.

What this paper adds?

- Improved communication about goals of care in patients at risk for critical illness, before critical care began, significantly decreased use of critical care and increased discharges with hospice support.

Implications for practice, theory or policy

- Goals of care meetings should be incorporated into usual care for cancer patients with advanced or refractory disease at risk for critical care during hospitalization, in order to improve concordance between care received and patient and family preferences.

Table 1

Patient and health care characteristics in the study sample.

Characteristic	Study group (<i>n</i> = 34)	Control group (<i>n</i> = 52)	<i>p</i> -value
Age, years (Mean (SD))	54 (16)	60 (13)	0.03
Race			
White	18 (56%)	40 (78%)	0.05
Non-White	14 (44%)	11 (22%)	
Sex			
Male	22 (67%)	26 (50%)	0.13
Female	11 (33%)	26 (50%)	
Solid tumor malignancy	20 (59%)	37 (71%)	0.25
Leukemia or lymphoma	14 (41%)	15 (29%)	
Advance directive according to nurse screening on admission			
Yes	7 (21%)	19 (27%)	0.23
No	20 (58%)	27 (52%)	
Not stated/no note	7 (21%)	6 (12%)	
Advance directive in medical record (of those noted to have advance directive on nurse screen)	3/7 (43%)	6/19 (32%)	
Length of hospital stay (days)	Mean: 16.9 Range: 4–55	Mean: 15.5 Range: 2–104	0.69

SD: standard deviation.

Table 2

Needs: patient/surrogate reports of how well each was addressed in the meeting.

Need	How well need addressed in the meeting (1–5 scale, “Not at all” to “Completely”) (n = 27 ^a , study group)
More information about the condition	3.9
More information about the future of condition	3.8
More information about the tests he or she will be undergoing	3.5
More explanations about treatments	3.6
More involvement in choices about care	3.9
More understandable information	4.0
More openness from providers	4.2
Better communication from providers	3.6
Better communication between providers	3.7
Better management of symptoms (such as pain, nausea, insomnia)	4.2
More support from providers	3.9
More economic and insurance information related to the illness	2.9
More assistance with the role of the family	3.5

^aThe surveys were filled out by 8 patients and 19 surrogates.

Table 3

Goals: patient/surrogate report of importance and extent discussed in the meeting.

Goals	How important is goal today? (1–5 scale, “not at all” to “completely”) (n = 27, study group)	To what extent was goal discussed in the meeting? (1–5 scale, “not at all” to “completely”) (n = 27, study group)	p-value ^a
Ability to think clearly and remember important things	4.4	3.0	<0.01
Ability to take care of personal needs	4.2	3.0	0.01
Avoiding physical suffering	4.6	3.8	0.01
Maximizing survival time	4.7	4.0	<0.01
Ability to live independently	4.4	2.9	0.01
Ability to communicate with others	4.6	3.2	<0.01
Avoiding emotional suffering	4.4	3.3	<0.01
Whatever is best for the family	4.3	3.2	0.01
Relationship with family/friends	4.5	3.4	0.01
Using all available anticancer treatments	4.2	3.7	0.05

^aWilcoxon signed-rank sum test was used to compare whether the mean scores for the importance of each goal differed from the extent to which each goal was discussed during the meeting.

Table 4

Outcomes: Documentation of Goals of Care Discussion, Health Utilization, and Mortality.

Outcome	Study group (n = 34)	Control group (n = 52)	p-value
<i>Goals of Care Discussion Documentation Score^a</i>			
0: No DNR/DNI/Full Code Status noted	7 (21%)	14 (27%)	
1: DNR/DNI/Full Code Status noted	5 (14%)	10 (19%)	
2: Documentation of meeting/discussion in progress notes	19 (56%)	24 (46%)	
3: Goals of Care Note	3 (9%)	4 (8%)	0.81
DNR/DNI Order	24 (71%)	29 (56%)	0.18
Received critical care ^b	0 (0%)	12 (22%)	0.003
Readmitted to hospital within 30 days ^c	5/33 (15%)	13/43 (30%)	0.18
Discharged to hospice ^c	16/33 (48%)	13/43 (30%)	0.04
Died during the index hospitalization ^d	1 (3%)	9 (17%)	0.08
Died within 30days (including in hospital) ^e	10 (29%)	24 (33%)	0.18

DNR/DNI: Do Not Resuscitate/Do Not Intubate; CVVHD: continuous veno-venous hemofiltration dialysis.

^aWe also abstracted death within 30 days of discharge from the hospital's electronic medical record. For both groups, the electronic medical record was reviewed for evidence of documentation of any goals of care discussions at any time during the hospitalization, using a rating scale we developed based on validated quality indicators tested in our cancer center¹⁴ with four levels of documentation (in order from lowest to highest): (1) no documentation of any discussion, including no documentation of code status (DNR, DNI, or full code); (2) documentation of DNR, DNI, or full code only without other documentation of goals of care discussion; (3) documentation of more details of a goals of care discussion recorded in the medical record but not in the goals of care documentation note; or (4) use of the goals of care documentation note in the electronic medical record.

^bCritical care was defined as Ventilator and/or CVVHD.

^cExcluding in-hospital deaths.

^dIndex hospitalization—hospitalization where risk for critical care and reported goals of care meeting was defined.

^eBased on follow-up death information in medical record.