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Timing of end-of-life care discussion with performance on end-of-life quality indicators in ovarian cancer

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HIGHLIGHTS

- Discussion of end-of-life care occurred late in the disease process and during hospital admissions in ovarian cancer patients.
- Earlier end-of-life discussions are associated with better quality of cancer care.

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ABSTRACT

Objectives. (1) To describe the prevalence, timing and setting of documented end-of-life (EOL) discussions in patients with advanced ovarian cancer; and (2) to assess the impact of timing and setting of documented end-of-life discussions on EOL quality care measures.

Methods. A retrospective study of women who died of ovarian cancer diagnosed between 1999 and 2008 was conducted. The following are the EOL quality measures assessed: chemotherapy in the last 14 days of life, >1 hospitalization in the last 30 days, >1 ER visit in the last 30 days, intensive care unit (ICU) admission in the last 30 days, dying in an acute care setting, admitted to hospice ≤3 days.

Results. One hundred seventy-seven (80%) patients had documented end-of-life discussions. Median interval from EOL discussion until death was 29 days. Seventy-eight patients (44%) had EOL discussions as outpatient and 99 (56%) as inpatient. Sixty-four out of 220 (29%) patients' care did not conform to at least one EOL quality measure. An EOL discussion at least 30 days before death was associated with a lower incidence of: chemotherapy in the last 14 days of life ($p = 0.003$), >1 hospitalization in the last 30 days ($p < 0.001$), ICU admission in the last 30 days ($p = 0.005$), dying in acute care setting ($p = 0.01$), admitted to hospice ≤3 days ($p = 0.02$). EOL discussion as outpatient was associated with fewer patients hospitalized >1 in the last 30 days of life ($p < 0.001$).

Conclusions. End-of-life care discussions are occurring too late in the disease process. Conformance with EOL quality measures can be achieved with earlier end-of-life care discussions.

Introduction

Evidence suggests that cancer patients frequently receive inappropriately aggressive treatment near the end-of-life (EOL) which may lead to higher resource utilization, increased costs at EOL and decreased quality of life [1–6]. Aggressiveness of care near the end-of-life has not been associated with increased survival [3]. In fact, in a prospective study of patients with lung cancer by Temel et al., decreased aggressiveness of care was associated with improved survival [4]. Emerging studies describe the relationship between the timing of EOL discussions and aggressiveness of care. For example, in one recent study of patients with stage IV lung and colorectal cancer, an EOL discussion at least 30 days before death was associated with less aggressive care, including administration of chemotherapy in the last 14 days, intensive care unit admissions in the last 30 days and acute care in the last 30 days [7]. This offers

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compelling insight into how oncologist-directed interventions can increase patient-centered and cost-effective advanced cancer care.

Studies have shown that many cancer patients receive poor-quality care at the end-of-life [8,9]. To address the need for improved quality of cancer care, the National Quality Forum (NQF) published the following end-of-life quality performance measures, with a lower occurrence representing better quality care: chemotherapy in the last 14 days of life, more than one hospitalization in the last 30 days of life, more than one emergency room visit in the last 30 days of life, intensive care unit (ICU) admission in the last 30 days of life, dying in an acute care setting and admission to hospice for 3 or less days [9]. These measures are intended to reduce overly aggressive treatment and underuse of palliative care services.

Few studies evaluate EOL discussions and quality performance indicators in patients with ovarian cancer. This malignancy is the most lethal gynecologic cancer and fifth leading cause of cancer deaths in the United States. Ovarian cancer is unique compared to many solid tumors, in that some women with ovarian cancer receive all treatment, including surgery, chemotherapy and surveillance, from a gynecologic oncologist. Furthermore, many patients with ovarian cancer will have multiple recurrences as well as successful salvage treatments, and commonly spend years under the care of a single physician. Some studies have shown that physicians who have close long-term relationships with patients often desire to avoid EOL discussions [10,11]. Given the lethal nature of ovarian cancer, the disease course, and centralized approach to care in gynecologic oncology, there is a critical need to identify and ameliorate deficiencies in end-of-life care for women diagnosed with this disease. The aims of this study were therefore: (1) to describe the prevalence, timing and setting of documented end-of-life discussions in patients with advanced ovarian cancer; and (2) to evaluate the impact of the timing and setting of documented end-of-life discussions on EOL quality care performance measures.

Methods

Following Institutional Review Board approval, a retrospective study was conducted of the charts of women who died from advanced ovarian, fallopian tube, or primary peritoneal cancer diagnosed between 1999 and 2008 and treated by a gynecologic oncologist at Duke University Medical Center. In order to capture our practice before incorporation of a palliative care service, data were collected up to 2008. Patients were identified via the Duke Tumor Registry. Inclusion criteria were deceased status, recurrent or persistent surgical International Federation of Gynecology and Obstetrics (FIGO) stage III–IV epithelial ovarian cancer, fallopian tube cancer or primary peritoneal carcinoma confirmed pathologically at the time of staging surgery or with image-guided biopsy. Patients without staging surgery were included if there was evidence of advanced disease (outside pelvis) on CT scan. Exclusion criteria were: FIGO stage I–II, pre-invasive neoplasia, borderline or non-epithelial histology. In addition, patients were excluded if they never received chemotherapy or had incomplete clinical information regarding the last 3 months of life. Five hundred twenty-six patients who died from recurrent or persistent ovarian, fallopian tube, or primary peritoneal cancer were identified. The following were excluded: 18 due to borderline histology, 27 due to non-epithelial histology, 28 due to early stage, 9 due to no administration of chemotherapy, 139 due to transfer of care to another institution and 85 due to incomplete clinical information. Two hundred-twenty patients were included.

Electronic medical records were reviewed retrospectively using a standardized abstraction form. Clinical data were extracted and analyzed, including hospitalizations, symptoms, procedures performed, anti-cancer treatment (chemotherapy, surgical or radiotherapy), EOL discussions, location of death and length of hospice enrollment. Invasive procedures performed for symptomatic relief of the following clinical events were also recorded: ascites, bowel obstruction, pleural effusions and obstructive uropathy.

The end-of-life quality performance measures evaluated were: chemotherapy in the last 14 days of life, >1 hospitalization in the last 30 days of life, >1 emergency room (ER) visit in the last 30 days of life, ICU admission in the last 30 days of life, dying in an acute care setting (ICU or attempted CPR), admitted to hospice ≤3 days. Conformance with EOL quality measures was defined as absence of the above measures. End-of-life care discussion was defined as a documented discussion with the patient during which any of the following was mentioned: comfort-care, resuscitation (DNR status) or hospice care. In this study, comfort-care alludes to the transition from prolonging life to focusing on improving EOL symptoms. The earliest recorded EOL discussion was used for the analysis.

Descriptive statistics were used to summarize patient demographics and treatment characteristics. Categorical variables were compared using Fisher's Exact or the Chi-Square test. Continuous variables were compared using the Wilcoxon rank sum test.

Results

Two hundred twenty patients met inclusion criteria. Patient demographics and clinical characteristics of the entire cohort are summarized in Table 1. One hundred-fifteen patients (52%) were hospitalized in the last month of life and the median number of days spent hospitalized in the last month was 9 days. Ninety-nine (45%) patients died in hospice, 35 (16%) died in the hospital, 61 (28%) died at home, 11 (5%) died in a skill nursing facility and in 14 (6%) patients the location could not be established from medical records. The median length of enrollment in hospice was 21 days. One hundred thirty-seven (62%) received chemotherapy in the last 3 months of life and 26 (12%) received palliative radiotherapy.

Table 1
Patient demographics and clinical characteristics.

Characteristic	Frequency (%) ($n = 220$)
Age	
Mean (years)	61.2
Range	31–91
Race	
Caucasian	168 (76%)
African American	45 (21%)
Other	7 (3%)
Cancer diagnosis	
Ovarian	191 (87%)
Primary peritoneal	29 (13%)
Stage	
III	171 (78%)
IV	32 (15%)
Unstage	17 (8%)
Type of treatment	
Upfront debulking surgery and AC	177 (80%)
NACT with interval debulking surgery	24 (11%)
NACT without debulking surgery	19 (9%)
Chemotherapy in the last 3 months	137 (62%)
Palliative radiotherapy	26 (12%)
Hospitalizations in the last month	
Percent hospitalized	115 (52%)
Median number of hospital days	9
Average number of hospitalizations	2.12
Location of death	
Hospital	35 (16%)
Hospice	99 (45%)
Home	61 (28%)
Skill nursing facility	11 (5%)
Unknown	14 (6%)
Hospice length of enrollment (median-days) $n = 94$	21
Invasive procedures	
Last 6 months of life	136 (62%)
Last month of life	76 (35%)

AC = adjuvant chemotherapy; NACT = neoadjuvant chemotherapy.