Gynecologic Oncology 132 (2014) 3–7

Contents lists available at ScienceDirect

Gynecologic Oncology

journal homepage: www.elsevier.com/locate/ygyno

The role and timing of palliative medicine consultation for women with gynecologic malignancies: Association with end of life interventions and direct hospital costs ☆

Nicole S. Nevadunsky [a,b,1,*], Sharon Gordon [a], Lori Spoozak [a], Anne Van Arsdale [a], Yijuan Hou [a,b], Merieme Klobocista [a,b], Serife Eti [c], Bruce Rapkin [d], Gary L. Goldberg [a,b]

[a] Montefiore Medical Center, Division of Gynecologic Oncology, Department of Obstetrics & Gynecology and Women's Health, Bronx, NY, USA
[b] Albert Einstein Cancer Center, Albert Einstein College of Medicine, Bronx, NY, USA
[c] Beth Israel Medical Center, Department of Palliative Medicine, New York, NY, USA
[d] Department of Epidemiology and Population Health, Albert Einstein College of Medicine, Bronx, NY, USA

HIGHLIGHTS

- Timely palliative medicine consultation is associated with improved quality of end of life care.
- Decreased direct hospital costs are associated with timely palliative medicine consultation.

ARTICLE INFO

Article history:
Received 31 May 2013
Accepted 22 October 2013
Available online 29 October 2013

Keywords:
Palliative medicine
Gynecologic malignancies
Aggressiveness of care
End of life care
Quality-of-life
Hospital costs

ABSTRACT

Objective. Aggressive care interventions at the end of life (ACE) are reported metrics of sub-optimal quality of end of life care that are modifiable by palliative medicine consultation. Our objective was to evaluate the association of inpatient palliative medicine consultation with ACE scores and direct inpatient hospital costs of patients with gynecologic malignancies.

Methods. A retrospective review of medical records of the past 100 consecutive patients who died from their primary gynecologic malignancies at a single institution was performed. Timely palliative medicine consultation was defined as exposure to inpatient consultation ≥30 days before death. Metrics utilized to tabulate ACE scores were ICU admission, hospital admission, emergency room visit, death in an acute care setting, chemotherapy at the end of life, and hospice admission <3 days. Inpatient direct hospital costs were calculated for the last 30 days of life from accounting records. Data were analyzed using Fisher's Exact, Mann–Whitney U, Kaplan–Meier, and Student's T testing.

Results. 49% of patients had a palliative medicine consultation and 18% had timely consultation. Median ACE score for patients with timely palliative medicine consultation was 0 (range 0–3) versus 2 (range 0–6) $p = 0.025$ for patients with untimely/no consultation. Median inpatient direct costs for the last 30 days of life were lower for patients with timely consultation, $0 (range 0–28,019) versus untimely, $7729 (0–52,720), $p = 0.01$.

Conclusions. Timely palliative medicine consultation was associated with lower ACE scores and direct hospital costs. Prospective evaluation is needed to validate the impact of palliative medicine consultation on quality of life and healthcare costs.

Introduction

Palliative care is defined by the World Health Organization as "an approach that improves the quality of life of patients and their families facing the problems associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. Palliative care is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy or radiation therapy, and includes those investigations needed to better understand and

☆ A portion of this work was presented at the 2013 Annual Meeting of the Society of Gynecologic Oncologists. This work was supported in part by the Albert Einstein Cancer Center through its NCI Cancer Center Support Grant (P30CA013330) and NIH (K12CA132783-03).

* Corresponding author at: MD Montefiore Medical Center, 3332 Rochambeau Ave, Bronx, NY 10467.
E-mail address: nevadunskynicole@yahoo.com (N.S. Nevadunsky).
[1] Montefiore Medical Center, Albert Einstein College of Medicine, Department of Obstetrics, Gynecology and Women's Health, 3332 Rochambeau Ave, Bronx, NY 10467, USA. Fax: +1 718 920 6313.

0090-8258/$ – see front matter © 2013 Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.ygyno.2013.10.025

manage distressing clinical complications." [1] Palliative care is often confused with hospice care. The important difference is that palliative care is appropriate at any age and any stage in a serious illness and can be provided along with curative treatment [2]. The multidisciplinary palliative care team (physician, nursing, social work, chaplaincy) focuses on the patient and family throughout the trajectory of illness from diagnosis to death [3,4].

In 2012 the American Society of Clinical Oncology asserted that "combined standard oncology care and palliative care should be considered early in the course of illness for any patient with metastatic cancer and/or high symptom burden." [5] The provisional clinical opinion cited seven randomized controlled trials (RCTs) demonstrating improvement in symptoms, quality-of-life (QOL), patient satisfaction, reduced caregiver burden, more appropriate referral and use of hospice, reduced use of futile intensive care and other invasive care and improved survival [5–12]. The most compelling of these trials, by Temel et al., found improved QOL and mood for patients with metastatic lung cancer who had early as opposed to usual palliative care. As a secondary finding, these authors proved that early consultation resulted in less intensive oncologic interventions at the end of life with prolonged survival [12]. The impact of combined standard oncology care and palliative care on metrics of QOL and cost has not been previously reported for women with gynecologic malignancies.

Evidence suggests that palliative care consultations in patients at the end of life decrease costs while improving QOL. In a report of palliative care consultation team hospital cost savings, projected savings in New York State alone for Medicaid beneficiaries are up to $252 million annually if every hospital with 150 or more beds had a fully operational palliative care consultation team (defined as multidisciplinary, operating for more than 5 years, and trained in preferred practices for palliative and hospice care recommended by the National Quality Forum) [13]. However, there is a paucity of data on the impact of a palliative medicine consultation on these costs for women with gynecologic malignancies.

A composite metric of aggressiveness of care at the end-of-life (ACE) reported by Earle et al. has been used as a point of reference for many palliative care studies [14]. Increased ACE scores are indicative of poor end of life care [15]. These metrics include admission to the intensive care unit (ICU) within 30 days of death, hospital admission more than 14 days in the last 30 days of life, more than one hospital admission during the past 30 days of life, more than one emergency room visit during the last 30 days of life, death in an acute care setting, initiation of a new chemotherapy during the last 30 days of life, last chemotherapy within 14 days of death, and hospice admission less than 3 days before death. These aggressive interventions were not associated with improvement in survival for women with ovarian cancer according to a report by Von Gruenigen et al. [16] However, timely palliative medicine, as defined by two weeks of exposure, was reported to decrease ACE scores in a Veteran's Affairs cancer population [17].

While the evidence from RCTs integrating standard oncology practice and palliative care is promising, the applicability of these trials to general gynecologic oncology practice is yet to be tested, reproduced, or proven. In particular the application of early consultation for ethnically and racially diverse women with poor socioeconomic resources has not been investigated. The optimal method of integration of palliative medicine into standard oncology care is unknown, and the intensiveness or "dose" has not yet been defined for optimal clinical impact with minimal resource utilization. The objective of our study was to retrospectively evaluate the impact of palliative medicine consultation on cost and quality of end of life care as measured by ACE for women with gynecologic malignancies.

Methods

Montefiore Medical Center is the largest hospital center in the Bronx, which has approximately 1.4 million persons. It is a 1062 bed, urban community academic medical center. Over 27% of Bronx residents have incomes below the poverty level and 32% of the Bronx population is foreign born. Montefiore Medical Center provides medical care to a highly diverse population: 48% of its patients are identified as Latino/Hispanic, 31% as African American. English is the second language for more than half of all the inhabitants of the Bronx. The Montefiore Medical Center Palliative Care Service was established in 2000 and currently provides care to nearly 40% of the adult patients who die at Montefiore Medical Center each year. On average, there are 1800 new in-patient consultations, more than 600 in-patient unit admissions and 2000 outpatient clinic visits to the palliative care service each year [18,19].

After institutional review board approval was obtained, 100 consecutive patients who were treated during the last year at a single institution and died from their primary gynecologic malignancy were identified from the Gynecologic Oncology Tumor Board Registry. Data were abstracted from inpatient as well as outpatient medical records for the last year of life. These data included age at death, date of consultation, disease site, stage, self-reported race/ethnicity, marital status, provider and payer (private insurance versus Medicare/Medicaid). Providers were defined as "junior gynecologic oncology faculty" if in sub-specialty practice for less than 15 years, and senior "gynecologic oncology faculty" if in sub-specialty practice for more than 15 years. Tumor stage was determined by the 1988 International Federation of Gynecology and Obstetrics (FIGO) criteria [20]. Patients who had a formal inpatient palliative medicine consultation $\geq$30 days from death were considered to have timely consultation. Patients with less than 30 days from consultation until death were considered to have inadequate time of exposure and were evaluated as a group with patients who received no consultation. Palliative medicine consultations were identified by manual review of all inpatient medical records in the last year of life by trained personnel. Criteria for defining consultation included i) consultation request by an attending physician ii) the patient was seen and evaluated by the palliative care team for one or more visits and iii) at least one set of recommendations was made by the palliative care team for the primary team caring for the patient. The rationale to define timely consultation as at least 30 days before death was to allow a minimum amount of time for the consulting team to establish a rapport and to ensure that exposure time encompassed the longest time frame inherent in ACE criteria.

ACE scores were computed for each patient by addition of 1 point for each of the following metrics: admission to ICU within 30 days of death, hospital admission more than 14 days in the last 30 days of life, more than one hospital admission during the past 30 days of life, more than one emergency room visit during the last 30 days of life, death in an acute care setting, initiation of a new chemotherapy during the last 30 days of life, last chemotherapy within 14 days of death, and hospice admission less than 3 days before death [15–17]. Inpatient direct hospital costs were calculated in dollars for the last 30 days of life from hospital accounting records. Direct hospital cost was defined as combined cost for hospital stay, blood bank, medications, intravenous infusions, laboratory tests, intensive care unit stay, procedures, physical therapy, diagnostic radiology and respiratory therapy.

Baseline patient characteristics were compared using Fisher's Exact and Student's T testing., ACE scores were compared using Mann–Whitney U. Direct hospital costs for the last 30 days of life and the last 14 days of life were compared between patients having timely verses late/no consultation using Mann–Whitney U testing. Patients were included in cost analysis regardless of admission status during the last 30 and 14 days of life. Exploratory analysis was conducted of costs for the last 30 and 14 days of life for patients who had 14 or more days of exposure to palliative medicine consultation. Additional chi-square analysis was made of admission status of patients in both 14 and 30 day exposure groups. Overall survival was compared using Kaplan–Meier Statistics. All analyses were two sided and performed utilizing SPSS Statistics Version 20 (IBM SPSS Statistics, Armonk, NY).