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ORIGINAL ARTICLE

Factors associated with the time to first palliative care consultation in Lebanese cancer patients

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Abstract

Introduction Early palliative care is recommended for cancer patients. However, palliative care consults (PCC) are often delayed in Lebanon. The aim of this study was to identify the factors associated with timing of PCC and their impact on the place of death.

Methods This is a retrospective, single institution, study conducted at Hotel Dieu de France University Hospital in Lebanon. The clinical and demographic characteristics of oncology patients who received PCC were obtained. Cox and logistic regression models were used to evaluate the factors determining the time to first PCC and location of death, respectively.

Results Two hundred and ten patients were included in our analyses with a median age of 69 years (range 22–92 years). The median survival times were: overall survival 18.7 months, time to first PCC 17.9 months, and survival post-PCC 0.6 months. Among patients who were followed-up at home, the median time spent at home was 0.6 months. Late PCC were associated with a childless status (HR = 0.57, 95%CI = 0.37–0.86, $p = 0.007$), awareness of the diagnosis (HR = 0.64, 95%CI = 0.45–0.91, $p = 0.013$), and lack of palliative home care (HR = 0.42, 95%CI = 0.25–0.65, $p < 0.001$). Older patients (OR = 1.03, 95%CI = 1.01–1.05, $p = 0.026$) and those who had been followed up at home during the PCC (OR = 160.56, 95%CI = 21.39–1205.50, $p < 0.001$) were significantly more likely to have died at home as opposed to the hospital.

Discussion Cancer patients often receive PCC only shortly before their death. PCC for Lebanese cancer patients were found to be significantly delayed in patients that are childless, knowledgeable of their diagnosis, and lack home palliative care.

Keywords Palliative care consultation · Cancer · Middle East · Lebanon

Introduction

Recent years have witnessed large improvements in cancer treatments leading to significant survival benefits [1]. These advances shadowed the stalling improvements in cancer patients' quality of life [2]. Palliative care teams have circumvented these limitations by early interventions for symptom palliation and psychosocial support that enhanced the survival and quality of life of cancer patients [3–5]. In Lebanon, the frequent involvement of family members in cancer patients' treatment decision-making and the high level of religiosity often hinder efforts to provide palliative care services to cancer patients since patients and family members mostly focus on oncologic therapy. This is best illustrated by a previous study showing that Lebanon has among the highest rates of chemotherapy administration in the last month of life [6]. Moreover, these aggressive treatment approaches are guided by the treating physicians or caregivers as cancer patients are often unaware of their actual cancer diagnosis and prognosis [7]. We have previously shown that Lebanese cancer patients lack considerable information about the status of their disease with 40% being unaware of their diagnosis and more than half being uninformed about the extent of their disease [7]. These findings constitute the backdrop for a lagging palliative care approach in Lebanese cancer patients [8].

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Although timely palliative care is recommended for cancer patients, palliative care consults (PCC) are often delayed in Lebanon. Recent data from Western countries have demonstrated that earlier PCC tends to occur in patients with longer disease course and referral for symptom management [9]. In view of the cultural and religious differences between the Western and Lebanese societies, these findings cannot be extrapolated to the Lebanese society. Therefore, we conducted this study to identify the factors associated with timing of PCC and their impact on the place of death.

Methods

Study design and participants

This is a retrospective study conducted at Hotel Dieu de France University Hospital in Lebanon, one of the pioneering centers in the Middle East to inaugurate PCC into daily oncology care. PCC has been integrated in the multidisciplinary management of cancer patients at Hotel-Dieu de France University Hospital since January 2014. These efforts were recognized by the European Society of Medical Oncology (ESMO) in September 2015 when our institution was designated as the first center of integrated oncology and palliative care in Lebanon.

The PCC is conducted by a team constituted of one palliative and supportive care physician, two internal medicine fellows, a specialized nurse, a psychologist, a social worker and if needed, a Christian chaplain (despite the religious heterogeneity in Lebanon, only a Christian priest is made available by the institution). The primary role of this team is to resolve the issues raised by the oncologists concerning the optimal care of their cancer patients. The PCC team also supports the psychological and physical needs, palliates disturbing symptoms, and manages home transfer. Continuity of care upon hospital discharge was a major concern of the PCC team. Continuity of care was assured, whenever possible, by transferring care to non-governmental organizations specializing in palliative home care.

Eligible cases for this study were all oncology patients that were evaluated by the palliative care team between the 1st of January 2014 and 31st of June 2016. Non-Lebanese patients were excluded from our analyses to ensure sample homogeneity. Approval of the institutional ethical committee at the Saint Joseph University – Faculty of Medicine was obtained. As of 2017, an inpatient palliative care department was developed at Hotel Dieu de France University Hospital to facilitate the management of inpatient palliative cases. It should be noted that none of the patients included in this retrospective study had received inpatient palliative care services since the eligibility period for this study pre-dated the inpatient palliative care department at Hotel Dieu de France University Hospital.

Data sources and variables

The clinical and demographic characteristics of oncology patients who benefited from PCC were obtained from the hospital registration records. Information regarding age, gender, and social data (marital status and children) were gathered. Data concerning the primary tumor, patient and family awareness of diagnosis (assessed by directly interviewing the patient and his family about the patient's medical history), and co-management by a palliative home care team were also obtained. Patient and family awareness of diagnosis was evaluated at the time of diagnosis (or in the following few days, when applicable). Details of the PCC were rigorously documented: date of PCC, time to first PCC after diagnosis, indication for PCC, management plan by the palliative care team as well as the place of death and duration of follow-up at home after hospital discharge.

Statistical methods

Continuous variables were described by their medians and categorical variables by the numbers (*N*) and percentages (%) of each category. SPSS Statistics version 20.0 (IBM Corporation, New York, USA) and XlStat version 2017.1 (Addinsoft, Paris, France) were used for statistical analysis. All continuous variables were analyzed as such and not categorized. Overall survival was defined as the duration in months between cancer diagnosis and death of any cause. Time to first PCC was defined as the duration in months between cancer diagnosis and the PCC. Survival post-PCC was defined as the duration in months between the PCC and death of any cause. Duration of time spent at home was defined as the duration of time spent at home following discharge from hospital and until re-admission or death of any cause. Patients who were lost to follow-up or who did not suffer any of the events for a given endpoint at last follow-up were censored for that endpoint. Kaplan-Meier curves were drawn for each of these survival times. In order to evaluate the determinants of the time of first PCC and the duration of time spent at home, univariate Cox regression models were computed with each of them as the dependent variables (in two separate models) and patient demographics as the independent variables. In this analysis, the time to first PCC was adjusted for overall survival (time to first PCC divided by overall survival and multiplied by the mean of overall survival) in order to limit the bias induced by patients with better prognoses having longer delays to PCC solely because of longer survival. In order to evaluate the determinants of the location of death (hospital or home) of PCC patients, univariate logistic regression models were computed with location of death as the dependent variable and patient demographics as the independent variables. Effect sizes were reported as hazard ratios (HR) or odds ratios (OR) along with their 95% confidence intervals

(95%CI). All tests were two-tailed and considered statistically significant for $p < 0.05$.

Results

Two hundred and ten patients were included in our analyses with a median age of 69 years (22–92). The demographic and patients' characteristics of the sample are detailed in Table 1. Fifty-nine patients (28.1%) were not aware of their cancer diagnosis. The median overall survival was 18.7 months (Fig. 1a). The median time to first PCC was 17.9 months (Fig. 1b). The median survival post-PCC was 0.6 months (Fig. 1c). Among patients who were followed up at home, the median time spent at home was 0.6 months (Fig. 1d). The leading actions conducted by the PCC (detailed in Table 2) were psychosocial and moral support (79% of patients), pain management (40.5%), symptomatic support (13.8%), and home transfer (7.1%).

The analysis of the determinants of the time to first PCC was performed while adjusting for overall survival and the resultant survival curve is illustrated in Fig. 2. Time to first PCC were associated with a childless status (HR = 0.57, 95%CI = 0.37–0.86, $p = 0.007$), awareness of the diagnosis (HR = 0.64, 95%CI = 0.45–0.91, $p = 0.013$), and lack of co-management by a palliative home care team (HR = 0.42, 95%CI = 0.25–0.65, $p < 0.001$).

The duration of time spent at home was significantly related to the availability of palliative home care only. Patients who had palliative home care had significantly longer follow-up at home compared to patients who had not been co-managed by a palliative home care team (HR = 0.54, 95%CI = 0.36–0.81, $p = 0.003$).

The place of death was associated with the patient's age and home palliative care. Older patients (age expressed as a continuous variable in years) were significantly more likely to have died at home as opposed to the hospital (OR = 1.03, 95%CI = 1.01–1.05, $p = 0.026$). Patients who had been followed up at home during the PCC were significantly more likely to have died at home as opposed to the hospital (OR = 160.56, 95%CI = 21.39–1205.50, $p < 0.001$).

Table 1 Demographic characteristics of the included patients

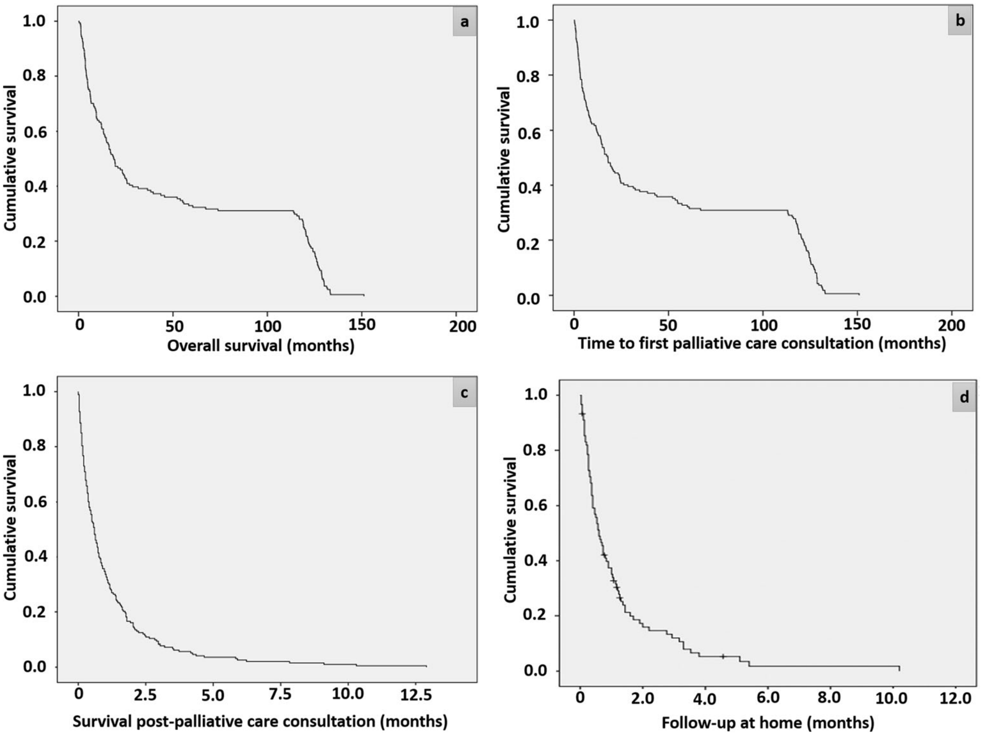
Variable	Number of patients	%
Sex		
Male	116	55.2
Female	94	44.8
Married		
No	41	19.5
Yes	169	80.5
Children		
No	58	27.6
Yes	143	68.1
Missing	9	4.3
Patient aware of diagnosis		
No	59	28.1
Yes	143	68.1
Missing	8	3.8
Family aware of diagnosis		
No	16	7.6
Yes	185	88.1
Missing	9	4.3
Cancer primary site		
Gastrointestinal	61	29.0
Lung	48	22.9
Genitourinary	36	17.1
Breast	25	11.9
Hematological	18	8.6
Central nervous system	6	2.9
Cancer of unknown primary	4	1.9
Head and neck	4	1.9
Neuroendocrine	3	1.4
Soft tissue sarcoma	3	1.4
Thymoma	1	0.5
Osteosarcoma	1	0.5
Home palliative care		
No	167	79.5
Yes	36	17.1%
Missing	7	3.4
Place of death		
Hospital	139	66.2
Home	55	26.2
Missing	16	7.6

Discussion

To the authors' knowledge, this retrospective study of 210 cancer patients undergoing a PCC is the first to investigate the delay in the procurement of palliative care services to Lebanese cancer patients. The time to first PCC was found to be at a median of 17.9 months, with patients surviving only 0.6 months on average following the PCC. According to our analysis, patients who are childless, aware of their diagnosis, or lack palliative home care had their PCC significantly more delayed compared to other patients. Moreover, patients who died at home were more likely to be older and have received palliative home care.

The concept of mortality within 30 days of chemotherapy has been considered as an indicator of the quality of care [10]. We have previously shown that 42% of cancer patients receive chemotherapy in the last month of life, which may be indicative for a poor quality of care [6, 10]. PCC could prevent chemotherapy in the last-month of life, which fails to improve

Fig. 1 Kaplan-Meier curves describing the overall survival (**a**), time to first palliative care consultation (**b**), survival post-palliative care consultation (**c**), and duration of follow-up at home (**d**)



survival and harms quality of life [11–15]. Previous data from our population have shown that early PCC in elderly cancer patients decreases the aggressiveness of cancer treatment in the last month of life, which seems to improve the quality of care [8]. In the present study, PCC were delayed in most patients and shortly preceded death (Fig. 1c). Therefore, PCC was not able to affect the cancer treatment approach and the outcome because it had occurred too late.

Timely PCC for cancer patients has recently been emphasized by multiple studies showing that this continuum of care improves patient outcomes [3–5, 16]. It allows the development of a therapeutic alliance and bond of trust between the patient, his caregivers, and the palliative care team. Thus, timely PCC would contribute to the management of cancer patients by alleviating both physical and psychological complaints early in the course of the disease [5]. Moreover, it educates patients and caregivers about supportive care and palliative management plans [17, 18]. Lebanese oncologists seem to also benefit from PCC in helping to break the bad news to cancer patients at advanced stages since this study has shown that patients who are unaware of their diagnosis received their PCC earlier than patients who know their diagnosis.

Table 2 Details of the activities performed by the palliative care consult

	N	%
Psychological and moral support	166	79
Pain management	85	40.5
Gastrointestinal and respiratory support	29	13.8
Home transfer	15	7.1
Psychiatric support	14	6.7
Physical rehabilitation	6	2.9
Nutritional support	2	0.95
Other	6	2.9

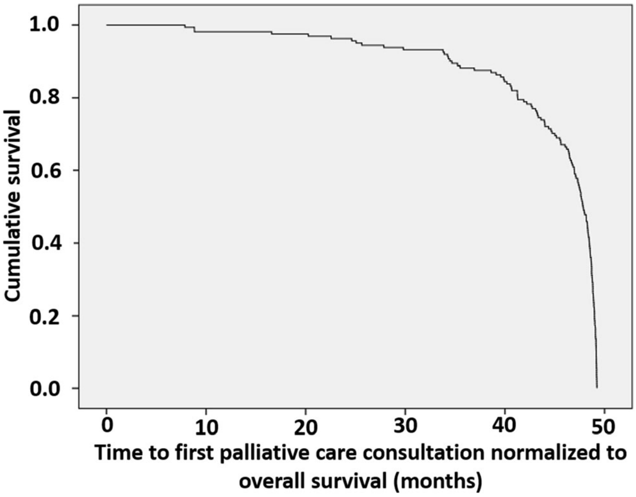


Fig. 2 Kaplan-Meier curve describing the time to first palliative care consultation normalized to overall survival. The figure graphically highlights how palliative care consultations were only provided to patients shortly before their deaths (the sharp decline near the end of the Kaplan-Meier curve). The analysis was normalized for overall survival in order to limit the bias induced by patients with better prognoses having longer delays to PCC solely because of longer survival

Cancer patients often desire to die at home surrounded by family and friends. This had been emphasized by the criteria proposed by Earle et al. for the evaluation of the quality of end-of-life cancer care, which suggest that a high proportion of hospital deaths indicates poor quality end-of-life care [10]. Previous data have shown that in-hospital PCC did not affect the duration of hospitalization and intensive care unit admissions during the last month of life [8]. The current study has shown that patients with palliative home care were significantly more likely to die at home as opposed to in the hospital. These findings underline the importance of home palliative care in helping patients near end-of-life to die among their loved ones in a familiar environment.

Multiple limitations are inherent to our analysis. First, the retrospective design may have limited the evaluation of the determinants of time to first PCC. In particular, previous studies have shown that a major cause of PCC delay is the oncologist's belief that advanced cancer patients favor a curative over palliative approach [19]. Second, this study was conducted in a single tertiary care center that is considered a pioneering palliative care department in Lebanon. Therefore, these findings cannot be representative of palliative care practices in Lebanon but could be used to anticipate the barriers to adequate palliative care integration in Lebanon and other Middle Eastern countries.

In conclusion, cancer patients often benefitted from the PCC only shortly before their death. PCC for Lebanese cancer patients were found to be significantly delayed in patients that are childless, knowledgeable of their diagnosis, and lack home palliative care. A minority of patients was found to die at home, instead of the hospital, and these patients are more likely to have palliative home care. Integration of early palliative care in the management plan of advanced cancer patients needs to be more elaborated in our region. Further research is required on combining symptom screening with timely referral to improve symptom management in advanced cancer.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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