Original Article

Predictive Factors For Do-Not-Resuscitate Designation Among Terminally Ill Cancer Patients Receiving Care From a Palliative Care Consultation Service

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Abstract

Context. Since the development of palliative care in the 1980s, "do not resuscitate" (DNR) has been promoted worldwide to avoid unnecessary resuscitation in terminally ill cancer patients.

Objectives. This study aimed to evaluate the effect of a palliative care consultation service (PCCS) on DNR designation and to identify a subgroup of patients who would potentially benefit from care by the PCCS with respect to DNR designation.

Methods. In total, 2995 terminally ill cancer patients (with a predicted life expectancy of less than six months by clinician estimate) who received care by the PCCS between January 2006 and December 2010 at a single medical center in Taiwan were selected. Among these, the characteristics of 2020 (67.4%) patients who were not designated as DNR at the beginning of care by the PCCS were retrospectively analyzed to identify variables pertinent to DNR designation.

Results. A total of 1301 (64%) of 2020 patients were designated as DNR at the end of care by the PCCS. Male gender and primary liver cancer were characteristics more predominantly found among DNR-designated patients who also had worse performance status, higher prevalence of physical distress, and shorter intervals from palliative care referral to death than did patients without DNR designation. On univariate analysis, a higher probability of DNR designation

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was associated with male gender, duration of care by the PCCS of more than 14 days, patients' prognostic awareness, family's diagnostic and prognostic awareness, and high Palliative Prognostic Index (PPI) scores. On multivariate analysis, duration of care by the PCCS, patients' prognostic awareness, family's diagnostic and prognostic awareness, and a high PPI score constituted independent variables predicting DNR-designated patients at the end of care by the PCCS.

Conclusion. DNR designation was late in terminally ill cancer patients. DNR-designated cancer patient indicators were high PPI scores, patients' prognostic awareness, family's diagnostic and prognostic awareness, and longer durations of care by the PCCS. J Pain Symptom Manage 2014;47:271−282.

Key Words
Terminal cancer, palliative care, do-not-resuscitate, Palliative Prognostic Index

Introduction

Cardiopulmonary resuscitation (CPR) was introduced in 1960s as a recovery method for acute cardiac events, and since then, has become a standard procedure performed worldwide toward the end of life.[1] The role of CPR in patients with noncardiac events, especially terminally ill cancer patients anticipating death, has been challenged. A review article, involving 113 studies on inpatient CPR and 26,095 individuals worldwide, reported a survival to discharge rate of 15%[2] and the absence of comorbidity as one of the better prognostic factors. According to a meta-analysis involving 1707 cancer patients who had undergone in-hospital CPR, the overall survival to discharge rate was 5.6% among patients with metastatic diseases.[3] A five-year retrospective study performed at the M. D. Anderson Cancer Center reported that none (0 of 171) of the patients who experienced anticipated cardiac arrest survived.[4] Limited benefits and painful interventions illustrated that CPR was an ineffective procedure in terminally ill cancer patients.[5,6]

In Taiwan, CPR was supported by the Medical Care Act, which mandated medical personnel and institutions to provide resuscitation to all inpatients at the end of life. Cancer-related mortality has reportedly been the leading cause of death since 1981 in Taiwan,[7] and this has encouraged the promotion of palliative care for more than two decades, with the intent of providing proper end-of-life care for cancer patients. The palliative care service aims to provide alleviation of physical, psychosocial, and spiritual distress; decrease futile interventions; and facilitate end-of-life plans while respecting patient autonomy. Since the development of palliative care in the 1980s, "do not resuscitate" (DNR) has been promoted worldwide to avoid unnecessary resuscitation. DNR consent was acquired through a document that requested refraining from performing CPR and was recognized for terminally ill patients worldwide.[8] In Taiwan, DNR designation for terminally ill patients was vigorously promoted by national policy after enactment of the Hospice Palliative Care Act, and formal DNR documentation was implemented in 2000. A nationwide survey conducted by the Taiwan National Health Insurance revealed a 58% decline in the rate of cancer patients receiving CPR from 1997 to 2004,[9] with the most significant decline occurring in 2000 after implementation of the Hospice Palliative Care Act. Another population-based study from 2001 to 2006, involving 204,850 cancer decedents in Taiwan, showed CPR rates substantially declining from 13.2% to 8.6%.[10]

Although studies have demonstrated substantially low resuscitation rates in terminally ill cancer patients, there are insufficient data on the effect of DNR designation and the characteristics of patients consenting to DNR after receiving palliative care. In this study, we retrospectively analyzed the clinical features of terminally ill cancer patients who were designated as DNR after receiving care from the palliative care consultation service (PCCS) at