The American Journal of Surgery (2017) 213, 778-784

The American Journal of Surgery®

Unmet palliative care needs in elderly trauma patients: can the Palliative Performance Scale help close the gap?

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KEYWORDS:
Palliative performance scale;
Trauma;
Functional outcome;
Palliative care;
Glasgow Outcome Scale;
Elderly

Abstract

BACKGROUND: The elderly injured have significant palliative care (PC) needs due to increased mortality and poor functional outcomes. We hypothesized the Palliative Performance Scale (PPS) could be predictive of poor outcomes in elderly trauma patients.

METHODS: Retrospective study of trauma patients 55 years or older admitted to the surgical intensive care unit. Using logistic regression, PPS was assessed as a predictor of mortality, Glasgow Outcome Scale, and discharge destination.

RESULTS: Out of 153 patients, 28 died; 28% of the survivors had a Glasgow Outcome Scale 3 or less and 13% were discharged to dependent care. PPS score of 80 or less was an independent predictor of mortality (odds ratio [OR]: 2.97 [1.08 to 8.66]), poor functional outcome (OR: 12.59 [4.81 to 37.07]), and discharge to dependent care (OR: 8.13 [2.64 to 30.09]), yet only 52% of the patients with PPS of 80 or less received PC.

CONCLUSIONS: Admission PPS can predict mortality and poor functional outcomes in elderly trauma patients, and has potential as a trigger for delivery of PC in this vulnerable population.

The elderly who sustain trauma are a particularly vulnerable population at risk for serious life-limiting illness and mortality. Elderly patients are the fastest growing group among the injured; they also experience worse outcomes compared with younger cohorts, with longer hospital stays and increased in-hospital mortality.[1,2] Among survivors, the elderly have significant impairment in long-term function and quality of life after injury due to frailty, comorbidities, and decreased physiologic reserve and are more likely to be discharged to dependent care.[3–5]

For many elderly, these outcomes are not compatible with their preferences. Evidence demonstrates that the elderly value quality of life as much as, if not more than, length of life, and make health care decisions accordingly.[6] However, studies have also shown that there is variability in delivery of care, and that many patients do not receive care concordant with their goals and values.[7]

There were no relevant financial relationships or any sources of support in the form of grants, equipment, or drugs.

The authors declare no conflicts of interest.

This study was presented in part at the Surgical Forum of the American College of Surgeons Clinical Congress, October 2014.

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Manuscript received February 20, 2016; revised manuscript April 19, 2016

0002-9610/$ - see front matter © 2016 Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.amjsurg.2016.05.013

Palliative care is increasingly recognized as a component of high-quality care for those with life-limiting illness or near the end of life. Palliative care improves survival and quality of life as compared with usual care among patients with cancer or other surgical diseases[8–10] and helps ensure care is concordant with patient preferences. An integrated palliative care program has been shown to decrease length of stay without affecting mortality rates in a trauma intensive care unit (ICU).[11] Early palliative care interventions have been also been associated with improved quality of life.[10]

Although palliative care interventions are an increasingly important core service for geriatric trauma centers, accurate prognostication is critical for determining when and to whom palliative care should be delivered. Multiple triggers for palliative care intervention have been proposed, including frailty assessments, ICU length of stay, prolonged respiratory failure, and anoxic brain injury,[5,12–14] but their validity and feasibility among elderly trauma patients remain uncertain. Frailty has been shown to be predictive of postoperative complications, increased length of stay, and discharge disposition in older trauma and surgical patients.[4,13] Unfortunately, many frailty indices are complex, multivariate, and cumbersome or impossible to apply at the bedside of an injured patient, pointing to the need for an efficient, objective assessment that can feasibly identify elderly trauma patients at risk for adverse outcomes.

The aims of this study were to (1) characterize the palliative care services received by elderly trauma patients, (2) describe the outcomes of these patients at discharge, and (3) evaluate the relationship of preinjury functional status to patient outcomes. We hypothesized that there is a high proportion of elderly trauma patients with unmet palliative care needs. In defining this gap, we shed light on factors that can predict not only mortality but also poor-functional outcomes and demonstrate the potential of an admission functional assessment as a trigger for palliative care.

Methods

Data source and study population

This is a retrospective observational study of consecutive older adults (age $\geq$55) admitted to the surgical ICU after traumatic injury at an urban level 1 trauma center during the calendar year 2012. The age of 55 was used due to the evidence that patients 55 and above are at higher risk of poor outcomes after trauma than their younger counterparts, as previously described in the trauma literature.[15] Patients who were younger than 55 years old, pregnant, or incarcerated were excluded. Patients were identified from the institutional trauma registry. Data were abstracted from the medical record and included demographics, injury characteristics, length of stay, comorbidities, and palliative care processes and interventions. The Palliative Performance Scale (PPS) was used to assess preinjury functional status on admission. PPS scores were retrospectively calculated from the chart, using admission nursing assessments, and physician history and physicals. Any charts that did not have nursing admission assessments or were missing data that were necessary to the main outcome of the study were excluded. This study was approved by the Institutional Review Board at our institution.

Palliative Performance Scale

The PPS is a functional assessment tool designed for prognostication in seriously ill patients receiving palliative care.[16] The PPS has been shown to be correlated with survival in patients with advanced cancer[17,18] and other seriously ill populations.[19–21] The score is derived from assessment of 5 domains: ambulation, activity level/evidence of disease, self-care, intake, and level of consciousness.[16] Scores range from 0 to 100 in increments of 10. Each domain has a defined range of options to select. For example, activity level/evidence of disease options range from no evidence of disease and normal activity to unable to do a hobby or housework due to a significant disease load (ie, New York Heart Association Stage III heart failure) to unable to do any activity due to extensive disease (ie, quadriplegia). A full version of the PPS along with its guidelines for use can be found on the Victoria Hospice Society website.[22] Our preliminary analysis identified a PPS level of 80 or less as predictive of mortality and poor-functional outcome, and this was used as our cutoff in the final analysis.

Outcome measures

The main outcome of this study was the proportion of patients who received palliative care services, including palliative care consultation, family meetings, documented goals-of-care conversations, do not resuscitate orders, and withdrawal of life support. Secondary outcomes were in-hospital mortality, discharge disposition (home or acute rehabilitation vs dependent care, that is, hospice, long-term acute care facility, or skilled nursing facility), and Glasgow Outcome Scale (GOS) score at discharge (with GOS of 2 or 3 indicating persistent vegetative state or severe functional disability among survivors). To determine the prevalence of unmet palliative care need in our cohort, we referred to criteria for palliative care assessment defined by the Center to Advance Palliative Care, including a high probability of mortality within 6 months, elderly patients with cognitive impairment and an acute surgical problem, and poor-functional outcome.[23]

Statistical analysis

Counts and percentages were used to describe categorical variables. Continuous variables were described using