



Cancer treatment at the end of life in older patients

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The care of patients at the end of life is a critical issue in oncology. Optimal end of life care can provide palliation, comfort, and allow patients to be with their families. Early palliative interventions have shown to be highly effective and cannot just improve quality of life but can also improve survival (1). There was an approximately 3-month improvement in survival associated with improved mood, resuscitation performed less often, and more patients had their end of life wishes documented. The use of chemotherapy towards the end of life is usually less effective and more toxic due to the patient's poor performance status and prior chemotherapy exposure. It often hastens death due to adverse events. Despite this, there is a significant amount of chemotherapy given near the end of life (2). There are many reasons including family pressure to do everything, the feeling that no treatment means giving up, the inability to face the inevitable, not wanting to take away hope and oftentimes miscommunication between the physician and the patient and clinical uncertainty.

Due to the importance of the issue, Fang *et al.* review the trends of chemotherapy and targeted therapy near the end of life in older patients (3). This is appropriate as the burden of cancer morbidity and mortality is greatest in those patients over 65 years of age and they are the largest users of pharmaceuticals. Those over 80 years of age are the fastest growing segment of the population and therefore this issue with become more important. The authors evaluated trends in therapy in the last 6 months of

life, 2007–2013, using the SEER-Medicare database. They specifically use of chemotherapy in the last 14 days of life. This benchmark was established by the National Quality Forum and ASCO Quality Oncology Practice Initiative (3,4). Their database consisted of over 140,000 patients who died as a result of breast, lung and colorectal cancers with a median age of 72 years. The median time from diagnosis to death was 1.3 years. Chemotherapy within 14 days of end of life occurred in 5.8% of patients overall. When the time window was extended 14.5% received chemotherapy within the last month and 32.4% within 3 months. The two most common drugs used within the last 14 days was carboplatin and paclitaxel. Targeted therapy use within the last 14 days was 1.2%, last month 3.6% and 3 months 8.9%. The most commonly used drug was erlotinib. Over the time period studied chemotherapy used declined and targeted therapy use marginally increased in the last 14 days. Patient level predictors of chemotherapy use were analyzed. Those patients who were younger, married, white and with fewer comorbidities but a more advanced stage and worse performance status were significantly more likely to receive chemotherapy. The delivery setting and resource use were also analyzed. A very important association was determined. Those who received chemotherapy in the last 14 days of life had a higher frequency of inpatient admission, intensive care unit admission, emergency department visits and lower frequency of hospice care. This represents a significant increase in resource utilization and factors which are

thought to decrease quality of life and comfort.

The decline in the use of chemotherapy may be partly due to the implementation of the guidelines by the National Quality Forum and the ASCO Choosing Wisely Campaign (5). However, the authors did note an increase use of chemotherapy within 3 to 6 months of end of life and a rise in targeted therapy. This rise may be an appropriate use of less toxic, more effective therapy with an improved therapeutic index. The study was limited in that only older patients with solid tumors were included. The dataset did not include information on drug dose, frequency, duration and important issues such as goals of care, prognosis and other issues which contribute to the decision on treating patients in this circumstance.

This analysis of a large dataset points to issues regarding the cancer treatment of older patients and appropriate end of life care. The aging of the population and the result increase in older cancer patients was first recognized in the late 1980s and early 1990s. At that time there was no significant data to guide treatment decisions. This was predominantly due to the under participation of older patients on clinical trials. There was also a paucity of baseline data on this population. The Comprehensive Geriatric Assessment (CGA) as developed by geriatric medicine researchers was used as a template to evaluate older cancer patients. It was recognized that the CGA had to be modified to fit a new purpose; the ability to predict outcome and guide treatment decisions. This led to a series of evaluations which resulted in predictors of various clinical outcomes including survival, chemotherapy toxicity and surgical morbidity (6-9). The evaluation of frailty has also become a critical issue as those patients experience the most toxicity and least benefit of cancer treatment (10-12). Though more work needs to be done, there is a significant amount of information available now to help clinicians make treatment decisions to increase the therapeutic index (13-15).

When patients are in a functional decline due to progressive malignancy, clinicians need to decide whether further therapy would be appropriate. The tools are now available to help make these decisions. Chemotherapy in the last 14 days of life has a very low likelihood of benefit. The factors contributing to this are declining performance and functional status, multiple prior lines of therapy, increasing comorbidity. These data can help clinicians educate families and decide what is best for the patient. Ceasing active therapy and start palliative care intervention should not be viewed as giving up. It should be part of the continuum of

cancer treatment. It is the best way to provide high quality, effective palliation and compassion.

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Footnote

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Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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