Identifying Tools and Strategies to Provide Quality Oncology Care

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Oncology care is complex. This relates directly to the heterogeneity of cancer diagnoses (many different types of cancer, eg, lung, breast, colon, lymphoma); the stage of disease and tumor subtype; the patient characteristics, including comorbid conditions; the patient's social support, financial, and/or insurance resources; and the setting of care. Layered on this is need for multiple oncology specialists to be involved in the delivery of high-quality care, from diverse disciplines including surgery, pathology, radiology, medical oncology, and radiation oncology. Coordination of care among these members of the team is often challenging, even when care occurs within the same institution. Finally, the treatments themselves are frequently toxic, complicated to administer, and require ongoing support in the patient's home and community after receipt in the physician's office. Patient and caregiver support are critical, especially as we consider the aging of the population and the frequency of cancer among individuals older than 65 years. All of these issues are magnified among the underserved, who often present with more advanced cancer and greater frequency of comorbid conditions, along with more limited personal resources.

Facing these challenges, how can we work to deliver high-quality and affordable cancer care? What strategies should be considered to improve communication and coordination of care, while reducing adverse effects on patients and minimizing waste? The abstracts in the first session of the ASCO Quality Care Symposium provided examples of efforts underway to study these aspects of care. Each presentation examined needed efforts along the continuum of cancer care, from diagnosis through end-of-life care, and are reviewed in this context.

Tools and Strategies at Diagnosis

Two of the abstracts from this session addressed issues related to navigating the health system and delivery of evidenced-based care at the time of diagnosis. Ko et al¹ performed a secondary analysis of data from the National Patient Navigation Research Program, a consortium of federally funded research programs that provided patient navigation to patients newly diagnosed with breast cancer, mostly in underserved populations (13% uninsured and 38% insured by Medicaid). Three National Comprehensive Cancer Network quality indicators measuring the quality of early stage breast cancer treatment were examined in this database: use of endocrine adjuvant therapy in women with hormone receptor–positive disease; use of radiation ther-

apy postlumpectomy; and use of adjuvant chemotherapy for patients with hormone negative disease, tumor more than 1 cm, and younger than 70 years. These quality indicators were chosen because adherence to them can influence mortality. Examination of the available data supported the benefit of patient navigation in improving adherence to endocrine therapy (adjusted odds ratio 1.78, $P = .002$); however, patient navigation did not significantly affect adherence to the remaining quality indicators, and in fact, chemotherapy adherence was significantly poorer among women who received navigation. Although there are likely important benefits to patient navigation, this secondary analysis of a large data set did not confirm benefit across all indicators, and more work needs to be done in this area.

The abstract by Grund et al² focused on the use of a commercial chemotherapy treatment decision support tool as a means to reduce variation in prescribing of non–evidence-based chemotherapy regimens. The authors report on application of the tool in 596 patients with advanced non-small-cell lung cancer. The authors found that 65% of initially submitted chemotherapy plans met evidence-based standards, whereas 22% had medically justified variance after nurse or physician review, including peer-to-peer discussion. After peer-to-peer review the oncologist agreed to modify treatment to an evidence-based plan in 4% of the cases, and in 9% the plan was not evidence based or medically justified. The goal of this process is to increase compliance with evidence-based therapies, as well as decrease delays in authorization of chemotherapy treatments for patients. Because the authors did not report the variation in number of evidence-based regimens selected, or the cost of those regimens, the impact of this approach on choosing evidence-based care at the lowest cost is unclear. As Bach has suggested, lung cancer regimens in this setting vary little in duration of benefit but differ greatly in cost.³ Thus, it would be important that future decision support tools provide comparison of cost and value, as well as efficacy or effectiveness.

Tools and strategies during treatment, palliative care, and the end of life. Patients with cancer experience a range of symptoms and toxicities in association with cancer treatments. When these symptoms are poorly controlled, they may lead to serious complications, such as life threatening dehydration from uncontrolled vomiting and diarrhea or severe pain and functional

compromise requiring emergency room visits or hospitalization. To the extent that these symptoms can be detected and managed in between regularly scheduled office visits and/or comprehensively assessed and addressed when patients are in the office, better patient outcomes will occur. In this session of the symposium, two abstracts focused on this important aspect of quality care delivery, and one addressed patterns of end-of-life care at a tertiary cancer center.

In their abstract describing telephone monitoring of patient-reported symptoms, Mooney et al⁴ described the results of two separate randomized trials that examined use of telephone-reported symptom monitoring for patients receiving chemotherapy treatments in clinical oncology practices. In the first study, eight chemotherapy-associated symptoms were assessed via daily telephone calls to patients, and those that were moderate to severe were reported back to the treating physician or oncology nurse through fax or e-mail. This trial found no significant difference in outcomes for patients whose symptoms were reported back to their providers. In a second trial, using a similar telephone monitoring strategy for 11 chemotherapy-associated symptoms, the investigators added a nurse practitioner to the intervention arm who did direct follow-up of patients with moderate to severe levels of symptoms, using a case management system paired with national guidelines. In addition, patients were provided with automated tailored self-care coaching based on the specific symptom pattern. This second trial showed significant benefit to the patients who received the intervention compared with those who received usual care. At the time of this writing, the investigators do not have data on the cost of implementation or the cost savings generated by the intervention, both of which will be valuable information for implementation and adoption. However, they have shown that symptom monitoring and simple feedback to providers are insufficient for improving patient outcomes.

In the study reported by Smerage et al,⁵ descriptive data on the frequency of various symptoms were reported in 730 patients recruited from eight clinical practices that are part of the Michigan Oncology Quality Consortium (MOQC). The practices chose to evaluate the range of symptoms among patients in their practices so that they could then embark on specific quality improvement (QI) practices based on what they observed. Each of the MOQC sites chose different strategies, and the authors reported on consecutive changes in QOPI measures in the sites that were doing new palliative care QI activities compared to those that did not. The authors demonstrated that symptom assessment was feasible in their practices, but not all of the symptoms that were common in their patients are tracked in QOPI. Further work is necessary to improve the symptom profiles among the patient population served by these clinical practices.

Use of the intensive care unit (ICU) for the care of patients with advanced cancer should be an infrequent occurrence, especially if it does not match the preferences of the patient. In an abstract presented by Chen et al,⁶ descriptive data were presented from a retrospective evaluation of time trends in the

documentation of do-not-resuscitate (DNR) status and the use of prolonged ventilation. The setting of the study was Johns Hopkins Medical Center, where the initiation of a review of patients' code status was started in July 2006, shortly after which a palliative care team was in place. The authors examined cases from 2008 to 2011, looking at time trends in the recording of DNR from a clinical database, as well as use of ICU care (defined as ventilator or dialysis support), which was identified from billing data and confirmed by chart review. During this period, among patients who died, there was a gradual increase in DNR status, election of comfort care, or withdrawal of ICU support, from 81% to 95% (odds ratio 1.14 per quarter, $P < .001$). Although the proportion of patients who received any ICU care during their terminal hospitalization did not change, the duration of such care decreased. There was no decrease in the survival-to-discharge rate among patients who received ICU care. Although these findings are of interest, the retrospective observational design limits interpretation; furthermore, there are no data on referral to hospice care, which may have been a more relevant intervention.

Quality of care in cancer survivors. The final abstract from this session focused on use of diagnostic imaging in long-term survivors of young adult malignancies. In this study, Daly et al⁷ identified a population-based cohort from Ontario, Canada, who were 20 to 44 years at cancer diagnosis and were currently more than 5 years disease free without cancer recurrence. They were matched 1:5 to population controls from the general Ontario population. Claims data were used to identify imaging studies performed in the survivors and controls. In this report, rates of plain radiography, ultrasounds, nuclear medicine, and computed tomography (CT) scans were examined, and dose estimates were calculated for the CT scans. These survivors received all types of diagnostic imaging at significantly higher rates than controls in the 10-year period after 5-year recurrence-free survival. CT scanning occurred at a rate 3.6-fold higher than that for controls (95% CI, 3.37 to 3.62). In contrast, the difference in rates of ultrasound between the two groups was more modest (rate ratio [RR] = 1.40; 95% CI, 1.38 to 1.43). The survivors also received plain radiography (RR = 1.66; 95% CI, 1.64 to 1.69) and nuclear medicine studies (RR = 1.97; 95% CI, 1.89 to 2.04) at significantly higher rates than controls, resulting in a 4.6-fold adjusted higher diagnostic radiation dose than controls. These findings have implications for cost, risk of unnecessary radiation exposure, and reflect lack of adherence to guidelines and poor coordination of care.

Conclusion

This session of the Quality Symposium provided an opportunity to examine a variety of research and QI strategies aimed at improving the quality of cancer care along the continuum. Retrospective and observational designs are important for identifying quality gaps that are in need of attention, and randomized

studies of interventions are important for leading the way toward adoption of effective approaches to improving quality in the future.

Author's Disclosures of Potential Conflicts of Interest

The author(s) indicate no potential conflicts of interest.

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