Exploring the Association Between the Institution and Variation in Nonoperative Management of Low-risk Cancers

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For specific low-risk cancers, variation in the use of nonoperative management exists at the surgeon, departmental, and institutional level. In this high-level analysis, Koelker et al.1 evaluate nonoperative management patterns of 2 cancers managed in nonoverlapping disciplines to detect hospital level influence on the practice of cancer surgeons. They identified more than 60,000 patients spanning 3 years of collection from the National Cancer Database, who had diagnoses of either low risk and localized thyroid or kidney cancer, and importantly met the National Comprehensive Cancer Network guidelines for active surveillance (AS). The authors identified independent and significant variables at the patient level that were associated with the odds of nonoperative management, and significant variability at the hospital level when controlling for both patient and disease variables. The difference in likelihood of nonoperative management between top and bottom deciles for hospitals in each disease showed marked variation—between 6- and 10-fold differences. In addition, the correlation between nonoperative management in eligible patients with thyroid and kidney cancer was statistically significant (Spearman ρ coefficient of 0.32-0.33 with P < .01). Although not a particularly strong correlation, the significance provides evidence that hospital systems are associated with management strategies across disciplines and disease-states. Further research will help determine factors that promote or dissuade nonoperative management strategies by hospital systems.

Both early-stage thyroid and kidney cancers are associated with excellent oncologic outcomes regardless of management strategy, making a strong argument for nonoperative management for many patients. Surveillance of thyroid cancer was endorsed by the National Comprehensive Cancer Network guidelines in 2015 and for kidney cancer by the American Urological Association in 2017.1 Despite this guideline-based support, the overall rates of nonoperative management for both of these cancers were low in this study's1 large cohort, less than 10% and 2% for kidney and thyroid cancer respectively.

A growing body of literature indicates surgeon-level variability in the management of early-stage cancers eligible for nonoperative management. Many surgeons are aware of how patient characteristics, including female sex, low income, and Black race in this study,1 independently are associated with how patients are managed. In addition, many physicians are guided by the perceived quality and reliability of data supporting practice guidelines. Although cancer management guidelines are bias-conscious and evidence-based appraisals, they can only be as strong as the studies that compose them. In the small kidney mass literature, variations in the quality of studies and length of follow-up prevent stronger statements regarding the use of AS in kidney cancer.2 Improvements in data sources and stronger guidelines may decrease this variation. Time also plays an important factor in decreasing this observed pattern of variation. For instance, prostate cancer AS programs were initiated in the 1990s. Twenty years passed before this data became mature and incorporated into guidelines. Furthermore, another decade passed before AS for certain prostate cancers became the standard of care.3 To put this current study in perspective, AS for small kidney masses and thyroid cancer only received guideline support in the last decade.

Healthcare system-based variables are not widely recognized as being associated with management choice in the medical literature, and data from this study1 suggest that we should be paying attention to this important factor. Clinician-facing initiatives, such as bundled payment models based on fair performance metrics, may widen, or decrease this variation gap dependent on...
the metrics selected for performance. Institution-specific incentives, such as production-based targets (eg, work relative value units), may also directly and indirectly influence physician decisions on disease management. It is important for individuals and institutions to understand the potential consequences of system-wide policies. Few institutions outwardly recognize these interactions, leaving medical care to individual clinicians while instituting and enforcing policies that undoubtedly influence care. Importantly, there are numerous other system-based and institutional variables that remain unnamed, unmeasured, and difficult to account for.4,5

A big question this study leaves us with, however, is how to interpret the ‘weak to moderate’ statistically significant correlation seen in the authors’ primary outcome. What level of correlation would prove or disprove that a significant driver of variation in management exists definitely at the health system level? It shows us that in to standardize care across different institutions, we must focus some efforts on health care system-facing initiatives, though we need to implement quality improvement at other levels of health care delivery. More importantly, we need to keep investigating this complex dilemma.1

The solutions remain equally elusive. In larger, comprehensive cancer institutions, cancer steering committees may have the ability and authority to institute policies that promote nonoperative management, and reward clinicians, particularly surgeons, for appropriate selection of nonoperative management. Continued analyses of nonoperative cancer management cost-effectiveness6 and patient satisfaction7 are needed to round out the growing literature demonstrating equivalence of oncologic outcomes. In smaller institutions and individual practice groups, policies designed to influence the use of nonoperative management may be more challenging and difficult to enforce. Clinical tools and dashboards aligned with electronic medical records or created by third parties may assist in these endeavors.

One of the most enjoyable aspects of this study1 are the numerous subsequent questions it generates regarding these specific cancer conditions. Our expertise lies in kidney cancer, therefore questions regarding percutaneous ablation, rates of biopsy before the management decision, and surgeon-specific metrics come to mind immediately. Corollaries for thyroid cancer undoubtedly exist.

In summation, this study1 provides evidence that hospital systems are associated with choices for nonoperative management in low-risk malignant neoplasms. Further research is certainly needed to identify these variables more granularly and confirm similar findings in other cancers. This being said, individual clinicians must be aware of outside influences to best account for them. Equally, if not more importantly, institutions cannot shift all responsibility to physicians when policies and incentive-based systems influence the care of patients.1


