Prostate Cancer Active Surveillance: Quality Matters

Peter J. Van Veldhuizen, MD

In 2012, the US Preventive Services Task Force made a Grade D recommendation against prostate-specific antigen (PSA) screening for all men based on the concern that PSA screening was leading to overtreatment with subsequent morbidity, and that this screening did not show a clear survival benefit. The resultant shift to less screening, however, has led to a higher stage of disease at diagnosis, and a recent cross-sectional study using comprehensive prostate cancer-specific mortality (PCSM) data demonstrated decreasing PCSM rates that either flattened or increased after the 2012 recommendation.1 This change was seen across all ages, races, and ethnicities. These results suggest that decreased PSA screening is a factor associated with this trend in increased mortality.

Active surveillance (AS) for patients with prostate cancer is a standard treatment option for patients at low risk, bridging this imperfect PSA screening option with the fact that prostate cancer still results in significant morbidity and mortality, with >30,000 people dying each year in the United States alone. Therefore, AS serves as a critical link between identifying patients for whom early diagnosis is critical to cure and those who may be spared treatment intervention.

The NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines) provide base recommendations, but AS monitoring protocols include a wide variation, including variations in the frequency of confirmation biopsies and the frequency of PSA testing, differences in when to use test results to make the decision to move toward definitive treatment, and an evolution on how best to incorporate multiparametric MRI (mpMRI). A more universal approach to surveillance with quality indicators (QIs) is needed to better define the best approach to patients on AS.

Although some studies have reported wide variations in the quality of care during AS, research on using validated QIs is limited. In this issue of JNCCN, Timilshina et al2 analyzed QIs using a population-based retrospective cohort of patients with low-risk prostate cancer diagnosed between 2002 and 2014 with the goal of applying evidence-based QIs to examine the quality of AS care. QIs included 1 related to structure, 13 related to the process of care, and 6 related to outcomes. The cohort included 33,454 men with low-risk prostate cancer. The median age was 65 years, and the median PSA level was 6.2 ng/mL. For QIs related to process of care, variations appeared according to physician volume, and for QIs related to outcomes, variations appeared by patient age. Although the study is limited by the data available through the registry, including the completeness of PSA monitoring and clinical stage, this study affirms the importance of quality monitoring and provides a basis for future quality of care AS assessments.2

Providing the best follow-up for patients undergoing AS involves multiple unknowns, including how to modify monitoring protocols given that all “low risk” is not equal. For example, patients with “low risk” cancer may be at “high risk” for being lost to follow-up based on race, healthcare access, and socioeconomic status. This should not exclude these patients from participating in AS, but rather highlights the importance of shared decision-making, good clinical judgment, and ensuring careful follow-up to effectively counsel candidates for AS and optimize AS-related outcomes.3

Another potential “high-risk” category is a family history of prostate cancer. A recent study evaluated patients undergoing AS for prostate cancer at Massachusetts...
General Hospital from 1997 through 2019 and identified patients with a family history of cancer. Among 855 evaluable patients, 300 (35.1%) had any family history of prostate cancer and 95 (11.1%) had a family history of related malignancies suggestive of a hereditary cancer syndrome. In this study, a family history suggestive of a hereditary cancer syndrome was an independent predictor of biopsy progression during AS. This is another cohort for which AS can be considered but in which patients should be counseled regarding the higher potential risk of disease progression.

Although AS with careful monitoring is a safe alternative for people with low-risk prostate cancer, the safety of AS for patients with intermediate-risk prostate cancer remains unclear. A recently published study sought to determine the prognostic value of the maximum allowable percentage of Gleason grade 4 at prostate biopsy compared with adverse pathology seen at radical prostatectomy. The conclusion was that AS may be a reasonable option for treatment of patients with ≤5% of Gleason grade 4. In a separate study, though, the 10-year cumulative incidence of PCSM was significantly higher for patients with favorable and unfavorable intermediate-risk disease than for those with low-risk disease.

The use of genomic testing for prostate cancer also continues to grow; however, the utility differs significantly across different practices. Several studies have suggested a potential role for genomic testing in guiding treatment selection with testing options including ProMark (MetaMark Genetics), Prolaris (Myriad Genetics), and Decipher (Veracyte). Current research remains limited, and prospective trials are needed to fully determine how these genomic tests fit when combined with other radiologic and pathologic tools. For example, it is not known whether a “high-risk” Decipher score in a patient with otherwise “low-risk” characteristics constitutes a need to abandon AS. However, without further data, that score could impact decision-making for both the patient and care provider.

mpMRI improves the detection of aggressive prostate cancer subtypes. A suspicious mpMRI result increases the disease progression risk during follow-up and has an evolving role in the decision about repeat biopsies. A high negative predictive value at mpMRI follow-up can help to decrease the number of biopsies during AS. A recent expert panel on AS agreed that best practices include the use of high-quality mpMRI, which can allow for omission of some biopsies. These investigators also agreed, however, that the highest priority in AS research is the development of a dynamic, risk-adjusted approach. Another recent study evaluated whether an artificial intelligence–driven algorithm can detect clinically significant prostate cancer in patients undergoing AS. The investigators evaluated patients undergoing AS who received mpMRI and subsequent MR-guided ultrason sound fusion biopsy and concluded that artificial intelligence–augmented lesion detection and PI-RADS scoring is a robust tool to detect progression in these patients. As technology continues to advance, with a potential increase in the number of patients on AS, the need to develop monitoring protocols with quality measures becomes even more critically important.

In conclusion, the study by Timilshina et al highlights the importance of quality monitoring in the approach to AS, pointing to differences in approach based on provider experience and patient age. The decision regarding whether to treat or monitor is becoming increasingly complex, with the increased use of genomic testing, mpMRI, and artificial intelligence, and the incorporation of variations related to patient ethnicity, family history, and socioeconomic status. Quality control over how we monitor AS is critically important to ensure that all patients are afforded the same opportunity to participate in AS when appropriate but also are equally reassured of a chance for curative therapy in the event of disease progression.

Disclosures: The author has disclosed not having any financial interests, arrangements, affiliations, or commercial interests with the manufacturers of any products discussed in this article or their competitors.

Correspondence: Peter J. Van Veldhuizen, MD, University of Rochester, 601 Elmwood Avenue, Box 704, Rochester, NY 14642.
Email: Peter.vanveldhuizen@urmc.rochester.edu

References

© JNCCN—Journal of the National Comprehensive Cancer Network | Volume 21 | Issue 5 | May 2023