PROSTATE CANCER

Postoperative PSA surveillance in patients treated with radical prostatectomy: might less be more?

Regular monitoring of PSA levels after radical prostatectomy for localized prostate cancer is an important element in the management of this malignancy. It facilitates early identification of disease recurrence and the timely initiation of adjuvant therapies. PSA testing is typically performed every 3 months during the first postoperative year, every 6 months during the second year, and annually thereafter.

Whether such frequent testing is necessary for all patients, however, is a matter of debate. "Most patients who undergo surgery are cured," says Matthew Tollefson of the Mayo Clinic, lead author of a study in which the need for annual PSA testing in men treated with radical prostatectomy was investigated. "Yet follow-up recommendations typically do not distinguish low-risk from high-risk patients, and many patients that have a low risk of recurrence are followed as though they have aggressive forms of prostate cancer."

Tollefson and colleagues recruited 2,219 patients with localized, low-risk prostate cancer, defined as preoperative PSA level <10 ng/ml, pathologic stage ≤T2c, Gleason score ≤6, negative lymph nodes and surgical margins, and no use of neoadjuvant hormone therapy or radiation therapy. After radical prostatectomy, the enrollees were monitored for a median of 75 months (range 3–161 months). Biochemical failure—defined as a PSA level ≥0.4 ng/ml—was experienced by 6% of the study population during follow-up. An additional 9% had detectable but sub-0.4 ng/ml PSA.

The likelihood of biochemical relapse decreased significantly after each successive year in which PSA was undetectable. After 3 years without detectable PSA, the probability of experiencing biochemical failure during the following year was just 0.2%. After a 5-year PSA-free interval, the probability of recurrence within the next 5 years was 1.5%.

"In low-risk patients who have undetectable PSA 1 year after surgery, the likelihood of developing clinically significant disease within the next 3–5 years is extremely remote," concludes Tollefson. "Therefore, we recommend that the follow-up of these low-risk patients after surgery be considerably less rigorous than [that of] their high-risk counterparts."

This concept of risk-adapted follow-up was examined in a separate study by Deborah Ahove and colleagues. They aimed to determine whether patients who will experience biochemical failure more than 5 years after radical prostatectomy can be identified, and the surveillance strategy appropriately modified according to the estimated risk of late recurrence.

Their study included 505 men who had undetectable PSA levels for ≥5 years. Participants generally had favorable disease features: 77% had preoperative PSA levels <10 ng/ml, 79% had pathologic stage T2 disease, and 58% had a Gleason score ≤6. The 10-year and 13-year biochemical-recurrence-free survival rates were 88% and 82%, respectively. Multivariate analysis showed that a Gleason score of 7 (adjusted hazard ratio [AHR] 1.88), a Gleason score between 8 and 10 (AHR 4.81) and extracapsular extension (AHR 2.37) reliably predict late relapse; seminal vesicle invasion is a near-significant predictor.

The authors note that a sizeable minority of patients remain at risk of biochemical failure more than 5 years after radical prostatectomy. Patients with disease features associated with an increased risk of late recurrence (that is, a Gleason score ≥7 and extracapsular extension) could benefit from ongoing annual—or potentially more-frequent—postoperative PSA surveillance.

PSA testing is expensive and anxiety-provoking. The results of these two studies indicate that annual surveillance in patients with low-risk prostate cancer is probably unnecessary given the low reported incidence of late biochemical failure. Risk-adapted follow-up strategies, therefore, are likely to benefit both health-care providers and patients.

Nick Warde

© Zhanat Aitkhozhin | Dreamstime.com

Original articles Tollefson, M. K. *et al.* Lifelong yearly prostate specific antigen surveillance is not necessary for low risk prostate cancer treated with radical prostatectomy. *J. Urol.* **184**, 925–929 (2010) | Ahove, D. A. *et al.* Which patients with undetectable PSA levels 5 years after radical prostatectomy are still at risk of recurrence? Implication for a risk-adapted follow-up strategy. *Urology* doi:10.1016/j.urology.2010.03.092