Editorial Commentary

Editorial: early PSA-testing after radical prostatectomy—the truth behind the scenes

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Adequate treatment of localized prostate cancer (PCa) remains challenging. Data from the U.S. National Cancer Institute reveals that PCa accounts for 9.9% of all new cancer diagnoses and 5.2% of all cancer deaths, accounting for 174,650 new cases and 31,620 deaths in 2019 (1). This data shows still a definite necessity for wide-ranging diagnostic, treatment, and follow-up options. Early cancer detection and subsequent treatment have resulted in a favorable five-year survival rate of 98% for all patients (1). Radical prostatectomy (RP) was traditionally the most common performed treatment for prostate cancer (2). Actual data from a high-volume center in Europe (Martini-Klinik Prostate Cancer Center, Germany) with an average of 2,200 performed RPs per year corroborated this finding (3). A recent published European multicenter study evaluated the development of 28,572 men that received RP between 2000 and 2015. The investigators reported an increased absolute number of RP from 401 to 2,504 and an increased proportion of patients with high-risk disease from 10% to 30%, respectively (4). These findings emphasize the importance of radical prostatectomies in the 21st century.

Reviewed data indicate that up to 40% of men undergoing RP with curative intent will experience a biochemical recurrence (BCR) within ten years after surgery (5). Moreover, the occurrence of BCR within <1.2 years after RP is associated with a 10-year PCa mortality of 9.9% (6). This remarkable finding underlines the relevance of appropriate follow-up schemes for these patients.

In 1987, Stamey and colleagues were the first to suggest the use of serum prostate-specific antigen (PSA) as a potential marker for PCa and later as a follow-up tool (7). Nowadays, treating urologists still, rely on PSA-testing as a cornerstone of post-therapeutic surveillance.

Despite the adoption of novel technologies for diagnostic or therapeutic approaches, namely MRI/TRUS fusion targeted prostate biopsies, PSMA PET/CT scanning, or the robot-assisted radical prostatectomy; no established alternatives to conventional PSA-testing are available. Recently developed genomic tests were initially promising to enhance the likelihood of BCR, local or nodal PCa recurrence.

The Prolaris© test is a molecular assay that quantifies the expression of cell cycle progression genes related to PCa; the information is synthesized to predict the risk of cancer progression (8). While not prospectively validated, in retrospective series, low scores have been associated with a low risk of progression to lethal disease in cohorts followed conservatively (9).

Another molecular assay, the Decipher test, is an Decipher® test is an mRNA expression-based test aimed at providing prognostic information following radical prostatectomy. It was developed to help predict the risk of metastatic disease in the hope of clarifying clinical decision-making following surgery, specifically the need for adjuvant

treatments (10).

As mentioned above, prospective studies with decision-making based on the results of these new assays are lacking, and economic benefits have to be validated.

Due to these circumstances, Preisser *et al.* examined the impact of persistent PSA after RP on oncologic outcomes (11). The authors have to be commended for their efforts to raise awareness for the need for appropriate follow-up schemes in PCa patients. Even though the European Association of Urology (EAU) guideline recommends the first PSA measurement at three months after RP, the authors stratified their study population according to persistent versus undetectable PSA six weeks after surgical intervention (12). Previous studies in this field focused only on patient subgroups with pN1 disease, pN0, and/or salvage radiotherapy (SRT) (13,14). In contrast to these studies, the current study design may allow us to obtain an overview of various therapeutic options and oncological outcomes within one large PSA-persistent study cohort.

They found an association between increased risk for PSA-persistence and preoperative elevated PSA values, more advanced pathologic tumor stage, pathologic Gleason grade group 3–5, positive surgical margins, and pN1 disease. At 15 years after RP persistent PSA reached an independent predictor status for metastasis-free survival, overall survival, and cancer-specific survival. Their subgroup analyses provide more substantial information to characterize patients that are at higher risk for worse oncological outcomes, and those who might benefit from SRT.

Even though, the general problem of missing alternatives to follow-up PCa patients has not yet been solved. The present study highlights the value of PSA-testing in patients that underwent RP as it remains a commonly available, standardized laboratory test at relatively low costs.

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Footnote

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Ethical Statement: The authors are 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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