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Editorial Comment on: Post-treatment Prostate Biopsies in the Era of Three-Dimensional Conformal Radiotherapy: What Can They Teach Us?

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In this retrospective study, Zapatero et al [1] performed a pathologic analysis of prostate biopsy specimens in patients treated with dose-escalation three-dimensional conformal radiotherapy (3DCRT) in correlation to the clinical outcome and prostate-specific antigen (PSA)-values. The authors conclude from a rather heterogeneous study population that there is a strong correlation between posttreatment positive biopsy and the 5-yr probability of biochemical-disease-free-survival (bDFS), confirming that PSA-control can be an adequate surrogate for local control. Multivariate analysis revealed that PSA-nadir, long-time androgen deprivation therapy, and post-treatment biopsy result were significantly correlated with bDFS.

The discrimination between therapeutic success and failure after radiotherapy for prostate cancer is usually performed by continuous PSA-testing (American Society for Therapeutic Radiology and Oncology [ASTRO] and Phoenix criteria) and has been established for years [2]. In addition, improved local disease control by a combination of androgen deprivation and high-dose three-dimensional conformal radiotherapy has been formerly shown by others [2,3]. Unfortunately, the authors use a six- and eight-core biopsy scheme that does not match the requirements of the “reference prostate biopsy protocols,” which was nicely highlighted by Scattoni et al [4], and therefore weakens the validity of results of the present study, especially in the negative biopsy group. Astonishing, but not discussed, is the discrepancy of the 5-yr bDFS according to the ASTRO and Phoenix definition. The 5-yr bDFS for the Phoenix definition accounts for 87%, 65%, and 92% ($p < 0.001$) for the whole series, positive biopsy result, and negative biopsy result, respectively. With the ASTRO definition, the authors found 69%, 38%, and 78%, respectively.

In summary, this report supports PSA-testing after definitive treatment of prostate cancer. From the clinical point of view, research in prospective validation studies should focus on PSA kinetics. PSA-doubling-time and PSA-velocity are especially good candidates as most effective parameters for identifying patients at significant risk after radiotherapy or surgery [5].

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Editorial Comment on: Post-treatment Prostate Biopsies in the Era of Three-Dimensional Conformal Radiotherapy. What Can They Teach Us?

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This study has tried to assess the role of a prostatic biopsy following three-dimensional conformal radiotherapy (3DCRT) in a dose-escalation study [1]. The authors have confirmed that radiation dose and posttreatment biopsy were significantly correlated with biochemical outcome. Even if I personally agree with this author's conclusion, the paper has some limitations and the results should be interpreted with caution. The retrospective nature of this one population study (160 cases), the clinical differences among the patients who received different doses of 3DCRT, the different periods of androgen-deprivation therapy, and the two different indications for a sextant/octant post-radiotherapy (RT) transrectal ultrasound (TRUS)-guided prostate biopsy, put serious doubts on the validity of the results. Moreover, the histologic evaluation of the cores may be questionable, due to the difficulties for the pathologist in interpreting the presence of residual cancer after long periods of androgen-deprivation therapy [2]. Due to the high rate of false-negative biopsies (missed cancer) and the high rate of false-positive biopsies (that may later convert to negative biopsies) [3], I do not agree with the authors'

conclusion that “[prostate-specific antigen] PSA control can be an adequate surrogate for local control, as assessed by posttreatment biopsies.” The treatment failure is defined by the PSA values [4], and post-RT prostatic biopsies are not necessary in the follow-up of these patients. Post-RT biopsies may have only a prognostic role or may be useful in the planning of a salvage therapy after biochemical failure.

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