Therapeutic Radiation in Patients With a Rising Post-Prostatectomy PSA Level

By Mack Roach III, MD, FACR [2]

The review article by Forman and Velasco represents a concise, up-to-date summary of current knowledge on the use of therapeutic radiation in patients with a rising post-prostatectomy prostate-specific antigen (PSA). The conclusions reached by the authors are reasonable but conservative. In my opinion, a bit too conservative.

When a man undergoes a radical prostatectomy, the operative assumption is that obtaining local control is important and likely to improve survival. The authors conclude in this review that "50% to 70% of patients receiving treatment will not have local recurrences." This statement seems to justify the position that it is reasonable to wait until recurrence is manifested before offering salvage therapy. Although this is a reasonable assumption, it is inconsistent with standard practice for all other cancer sites. For no other sites do we wait until a person manifests a recurrence before we offer adjuvant therapy. Is it reasonable to recommend that prostate cancer patients be treated differently?

The authors go on to report that 74% of patients are disease-free at 4 years if their PSA at the time of failure is less than 2 ng/mL. This would seem to justify waiting until the PSA rises as long as it is not "too high." I would argue that a 26% failure rate at 5 years is ultimately a higher failure rate with longer follow-up and is not such a "great salvage rate."

Positive Margins Demand Therapy
The authors define a "complete response" as the achievement of an undetectable postoperative PSA level. In my opinion, a detectable PSA of any level is an indication of failure and warrants aggressive treatment. Thus, I would argue that a positive surgical margin warrants treatment (even in the absence of a prospective randomized trial showing a survival advantage). For all other cancer sites in the body, a positive surgical margin is consistent with a very high risk of locally recurrent disease. It is commonly agreed that patients whose disease recurs after surgical treatment have a very poor salvage rate with radiotherapy. For example, if a patient undergoes a laryngectomy and then has a surgical recurrence, the salvage rate with radiotherapy is poor. The same holds true for salvage radiotherapy when used in a patient who has a local recurrence after surgery for rectal cancer, or in a woman with breast cancer who has grossly recurrent breast disease following resection. However, adjuvant radiotherapy has consistently improved local control, and local control is the ultimate goal of a radical prostatectomy.

I agree with the authors that there are limited data regarding the impact of salvage or adjuvant radiotherapy on incontinence or potency. However, we have previously reported urodynamic studies demonstrating that salvage radiotherapy has very little impact on sphincter length or bladder control in patients treated with high-dose postoperative radiotherapy.[1] These data reflect patients treated in the recent era of CT-based planning and are much more relevant than the old surgical literature, which claims that patients develop edema and other major complications with salvage radiotherapy.

Impact of Adjuvant/Salvage Radiotherapy
The news is not all good regarding the impact of adjuvant/salvage radiotherapy on sexual function, however.[2] In a retrospective study, we observed a higher risk of impotence in patients who were potent after radical prostatectomy if they received radiotherapy. Although our numbers are small and the data are retrospective, they do suggest that the risk of becoming impotent nearly doubles with the use of salvage radiotherapy. This down side is not likely to have a major impact on most patients however, because most men who have radical prostatectomy are impotent as a result of the...
surgery itself. A rising PSA after radical prostatectomy most likely indicates locally recurrent disease. In the absence of data demonstrating that waiting until the manifestation of symptoms of gross recurrence does not compromise survival, my clinical intuition points to aggressive adjuvant treatment of these patients. Most patients with detectable, PSA levels probably have grossly recurrent disease, and in addition to salvage-dose radiotherapy (~ 70 Gy), they probably should also be considered for hormonal therapy.[3]

Certainly prospective randomized trials are needed to answer these questions. In the meantime, as one of my mentors likes to say, “if you don’t treat for cure, you won’t cure those you treat.” The best way to prevent recurrences following surgery is to administer radiotherapy when the tumor burden is the lowest.

References:


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