

CLINICAL FACTORS PREDICTIVE OF FALSE BIOCHEMICAL FAILURE AFTER RADICAL PROSTATECTOMY: THE IMPORTANCE OF A CONFIRMATORY TEST BEFORE SALVAGE TREATMENT

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Introduction and Objectives: Occasionally, patients with a detectable serum PSA after prostatectomy exhibit a normal value after repeating the study. Given the patient anxiety associated with serum PSA values, we evaluated whether any clinical characteristics were predictive of a false-positive result.

Materials and Methods: A prospective database was maintained for all men who underwent radical prostatectomy by a single surgeon (73% robotic, 27% retropubic). Of 602 patients, 562 had at least one post-operative PSA determination. Biochemical recurrence was defined as a serum PSA of 0.1 ng/ml or greater. PSA values were drawn every 4 or 6 months depending on the recurrence risk. All PSA values of 0.1 ng/ml or greater were repeated at our reference laboratory using the chemiluminescence method.

Results: During follow-up, twelve percent of patients (67/562) had a serum PSA of 0.1 ng/ml or greater. After repeating all detectable values at our reference laboratory, 11 of these 67 patients had a serum PSA less than 0.1 ng/ml for a false-positive rate of 16.4%. The true biochemical recurrence rate was 10% (56/562) after a median follow-up of 20.8 months (range 2 to 99). All patients with two consecutive serum PSA values of 0.1 ng/ml or greater continued to exhibit a PSA rise. The mean false-positive serum PSA level was 0.25 ng/ml (range: 0.1 to 0.5), and 82% of false-positive results had been performed at community laboratories ($p < 0.001$). Patients with a false-positive serum PSA were also less likely to have a higher prostatectomy Gleason score ($p < 0.001$) or pathologic T3 disease ($p < 0.001$), but had no differences in body-mass index, age, preoperative serum PSA, prostate size, or surgical margins compared with those with a true-positive result.

Conclusions: Approximately 16% of patients with a detectable PSA after radical prostatectomy may have false biochemical failure. Repeating the serum PSA in all patients with a detectable level is paramount before making treatment recommendations, especially if the study was not performed in a reference laboratory and the patient had Gleason score 6, negative margins, and organ-confined disease.