
Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher’s web-site:

Table S1. Characteristics according to D’Amico risk classification in PCa patients treated by radical prostatectomy.

Table S2. Univariate analysis to predict intermediate-risk subgroups having a comparable risk of biochemical recurrence to that in the high-risk group.

Table S3. OR of adverse pathological outcome according to PSAD levels in patients with the intermediate-risk group.

Table S4. Multivariate proportional hazard regression model predicting preoperative risk factors of biochemical recurrence in D’Amico intermediate-risk PCa patients treated by radical prostatectomy.

Editorial Comment

Editorial Comment to Reassessment of the risk factors for biochemical recurrence in D’Amico intermediate-risk prostate cancer treated using radical prostatectomy

In 1998, D’Amico et al. developed a relatively simple risk classification system to predict prostate-specific antigen (PSA) outcome after treatment with curative intent for prostate cancer, by using a combination of baseline PSA, biopsy Gleason score and clinical stage. According to this, they identified three different prostate cancer categories; that is, low, intermediate and high-risk patients.

A lot of water has flowed under the bridge since this landmark study, and despite many criticisms, the D’Amico risk classification is still commonly used and adopted by the American Urological Association (https://www.auanet.org/education/guidelines/prostate-cancer.cfm) and European Urological Association (http://uroweb.org/guideline/prostate-cancer/). The most important criticism comes from the clinical evidence that every risk group is a hub, which contains within itself different prostate cancer with a different fate. Some low-risk disease includes patients with “insignificant” prostate cancer that might be entered into observation or active surveillance, or patients with more aggressive disease requiring a more “aggressive” approach (extended pelvic lymphadenectomy or adjuvant therapy). Some high-risk disease includes patients with less “significant” prostate cancer and thus incorrectly a priori excluded from curative therapy, and so on. According to this concept, and in order to categorize patients for new therapeutic solutions, recent studies introduced the so-called very low- or very high-risk patients by adding new tools (including PSA density) to the original idea of D’Amico. Even intermediate-risk prostate cancer has been expanded including low and high intermediate-risk subgroups.

Furthermore, in 2005 the Gleason scoring system received modification and refinement with the International Society of Urological Pathology Modified Gleason System, while new imaging tools, such as multiparametric magnetic resonance imaging, provides a great opportunity to refine local staging. This is of paramount importance in stage T1c prostate cancer (tumor not palpable or visible by imaging), which is composed of a wide range of patients with varying outcomes.

The study by Narita et al. is an interesting, even retrospective, study on the evaluation of predictive factors for biochemical recurrence after radical prostatectomy in intermediate-risk patients according to D’Amico risk stratification. The authors extensively analyzed a large population of prostate cancer patients, all subjected to radical prostatectomy, with the aim of identifying adjunctive predictor(s) for biochemical recurrence, and finally identifying preoperative PSA, prostate volume and PSA density as further risk factors. On the bases of these risks factors, within the intermediate-risk group the authors were able to identify prostate cancer behaving as it would in the high-risk group, again showing that the intermediate-risk group encompasses tumors with significant clinical and biological heterogeneity.

As for other scientific milestones, after extensive studies and application in clinical real-life settings, some predictive tools came under re-evaluation and refinement; most likely, some limits or criticisms simply reflect the inclusion, in the original prognostic tool, of “subjective” or defective parameters, such as clinical staging and clinical grading, whereas PSA, prostate volume and PSA density are simply more “objective.” Effectively, by using digital rectal examination only, clinical staging is imprecise, and pathological down- or upgrading is a frequent bias. In this regard, PSA density was just shown to be a significantly preoperative predictor of advanced pathological features and Gleason score upgrading. Its inclusion in the predictive flow-chart, together with the amount of high-grade cancer and Gleason pattern, percentage of positive biopsy cores, and in the near future multiparametric MRI, will improve our decision-making process and sort out all of the issues that are still unclear.

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Conflict of interest

None declared.

References

