The pursuit of the "perfect" biomarker in prostate cancer

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The study by Lavallée and colleagues is a further attempt to garner data that may be fairly easily collected and collated and potentially used in the prognosis of men with prostate cancer having a radical prostatectomy.[1] Such tools are appealing, but the likelihood of a drastic change from prostate-specific antigen (PSA), Gleason score and stage is difficult to ignore. This study explores tumour density and found it to be an independent predictor for biochemical recurrence. However, despite its worthy endeavour, tumour density adds little to nomograms.

One cannot overstate Kattan's publication in 1998 of the first nomogram in urologic oncology to predict radical prostatectomy recurrence using preoperative parameters.[2] Today, one may wonder if we are attempting to "squeeze an already squeezed lemon dry" in attempting to improve nomograms. Almost all permutations and combinations of grade, PSA and pathological characteristics have been crunched to gain a small advantage, yet, in general, with minimal clinical consequence. It is doubtful that tumour density will become a common utility.

Nomograms are becoming tiresome, although necessary. Catto summarizes our lust, hatred and fatigue for the tool we love to study in urology.[3] The fact we persist with such tools acknowledges the complexities of treatment decision-making in many cases. One cannot argue with the authors that tumour volume measurement in prostate cancer as a stand-alone tool is unclear.[1] Yet methods for calculating tumour volume are variable from the "eye of the pathologist" to more sophisticated digital methods. The use of volumetric analysis is now well-described.[4] This digital type analysis was not universally done in this study.[1] Furthermore, illustrating tumour volume by a tumour map may be helpful to understand the location of the tumour and also the need for surgery and adjuvant treatment. Certainly, there are limitations particularly that the methodology for calculating volume was not standardized nor was their independent review; there was also limited follow-up and patients were not contiguous.[1] It is arguable that these may not have affected the final results, but they certainly detracted from their generalizability.

Should we pursue tumour volume and related entities or continue our quest for other biomarkers and genetic profiling? They are not mutually exclusive and they may marry at a later date.[5] For now, we will await further incremental advances in our quest for the "perfect" tool. Until we know all about prostate cancer, we should continue to collect data on tumour volume and even density, as markers inevitably will be discovered to complement such data and make for more relevant gains in our understanding of the prognosis of this common, but rarely lethal tumour.

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