Improving outcomes for New Zealand men with prostate cancer

John N Nacey, Brett Delahunt, Stephen D Mark

Prostate cancer is the most common non-cutaneous malignancy affecting New Zealand men and accounts for 27% of all annual registrations of cancer. This malignancy is a significant burden to men’s health and kills around 600 men every year in New Zealand.¹

The registration rate is lower for Māori when compared to non-Māori however the mortality rate for Māori is 72.1% higher. This disparity is almost certainly related to a lower rate of screening among Māori men resulting in a higher proportion presenting with advanced, and therefore incurable, disease.

The Ministry of Health’s Awareness and Quality Improvement Programme for prostate cancer is timely.² It aims to improve prostate cancer outcomes for men and has a strong equity focus.

As with all malignancies, clinicians strive to find a reliable way of detecting prostate cancer early, so that potentially life-saving treatments may be implemented promptly. Such treatment has the dual aim of reducing prostate cancer-related mortality as well as reducing the very significant morbidity associated with advanced disease.

Early diagnosis of prostate cancer is largely driven by the use of prostate-specific antigen (PSA) testing. Following its introduction in the 1980s, PSA created a revolution, resulting in a definite stage migration from high-grade, high-risk cancer toward low-grade low-risk, disease.³⁴ It is a powerful tool for measuring a man’s response to prostate cancer treatment and assessing disease progression. Nevertheless, this remains a controversial test because an abnormal result may not predict prostate cancer and is likely to lead to prostate biopsy.

Transrectal ultrasound-guided prostate biopsy is one of the most frequently performed urologic procedures. It is generally safe and well-tolerated and most adverse effects are minor and self-limited. These include haematuria, haemospermia, and transient rectal bleeding. Uncomplicated urinary infection occurs after biopsy in 1.2–11.3% of cases and febrile infections occur in 1.4–4.5%. Sepsis, one of the most serious clinical sequelae, is encountered in 0.1–2.2% of cases after transrectal prostate biopsy.⁵⁶

Transperineal prostate biopsy is being increasingly utilised by New Zealand urologists as a means of accurate prostate sampling and with a much lower complication rate than the traditional transrectal approach. Using this technique the febrile infection rate has been reported to be as low as 0.7% with no patients developing sepsis.⁷

Critics argue that if a prostate cancer is found and treated it may have been indolent, the treatment may have been unnecessary and any management is usually associated with adverse consequences.
These concerns need to be viewed in the context of major advances in prostate cancer diagnosis and management. An often-repeated myth is that prostate cancer is common in younger men, with studies showing tumour in 27% of individuals in the fourth decade. These studies (based on postmortem findings) are, however, flawed due to a failure to exclude cancer mimics by contemporary immunohistochemical techniques.

Further, the incidence rates determined in earlier studies must now be questioned as it is now realised that a number of morphologic patterns originally considered to represent malignancy are, in fact, benign lesions. This is reinforced by a study of patients diagnosed with prostate cancer at the Mayo Clinic between 1960 and 1970, which showed on review, that 21% of lesions were benign.

The concept that the behaviour of prostate cancer is unpredictable is incorrect, as outcome is predicted by stage and Gleason grade/score. Of cancer grading systems, that of Gleason is one of the most powerful predictors of outcome. This system has undergone several modifications to align it with developments in clinical practice and our evolving understanding of the behaviour of prostate cancer.

In its current iteration Gleason scoring facilitates stratification of outcomes, such that it is now realised that low volume, Gleason score 3+3=6 tumours have a long-term mortality of less than 3% and are therefore appropriate for active surveillance. This does not apply to cancers with significant proportions of Gleason pattern 4 or with Gleason pattern 5, which have more aggressive growth characteristics and for which early treatment is indicated.

These developments mean that at diagnosis we can be more confident of assigning to each patient an accurate risk of disease progression. Men with a low-risk profile may be suitable for either active surveillance or curative treatment, using either radical prostatectomy or radiation therapy. Those at intermediate or high-risk need to be considered for curative treatment only.

Entering an active surveillance programme means men avoid the potential adverse effects of surgery. Urologists are well aware that for men on active surveillance programs there is a greater likelihood that they will die from causes other than prostate cancer. The risk is that men may develop more aggressive cancer and ultimately require not just radical intervention, but also adjuvant treatment. Therefore, men on active surveillance require intensive monitoring and while the triggers for intervention vary between protocols, most rely on the findings of re-biopsy.

If the original criteria for including men in active surveillance are breached (Gleason score and tumour volume) then men are likely to be directed to curative treatment. For many men the anxiety of an increasing PSA (even one that does not meet an intervention criterion of doubling time <3 years) will cause them to leave an active surveillance program and opt for curative treatment.

Only radiation and surgery have been shown to reliably cure patients of prostate cancer. These are the options for men with low risk of disease progression (who have withdrawn or been withdrawn from active surveillance), and for those with intermediate and high-risk disease. Of course, men need to understand the implications of their treatment. They also need to understand that the risk of declining intervention is disease progression and death from metastatic disease. More recent studies are challenging the notion that prostate cancer is not a major cause of death in
men. These studies emphasise that we must not underestimate the lethal nature of prostate cancer in men of all ages and the potential to do harm by undertreatment. Curative treatment of all cancers carries risk of adverse events. Opponents of prostate cancer screening in New Zealand have commonly focussed on post-treatment incontinence and impotence and have described the treatments as “mutilating”. No prostate cancer treatment causes mutilation. Men need to be advised that the curative options of radical prostatectomy, external beam radiation therapy, and low dose rate brachytherapy (seeds) differ in their adverse effect profiles. All have a risk of erectile dysfunction, although this is not uncommon in men over 50 years of age without prostate cancer.

The risk of erectile dysfunction increases at a rate of 11% per year over the age of 45 years in normal men and, as such, is part of the aging process. Radical prostatectomy carries the additional risk of incontinence and as a consequence it is apparent that any curative treatment has possible benefits and risks.

For one man, the benefits may outweigh the risks, but for another, even with the expectation of similar outcomes, the risks may outweigh the benefits. These are “close call” situations and require shared decision-making between the man and his clinician to make the best possible choice of treatment at the level of the individual.

The Ministry of Health does not recommend population screening for prostate cancer. The quality improvement programme emphasizes the need for shared decision-making between men and their families, and the clinicians involved along the pathway of prostate cancer treatment.

It is important that not only are a man’s age and family history taken into account but also his personal preferences and values.

Competing interests: Nil.

Author information: John Nacey, Professor, Department of Surgery, University of Otago, Wellington; Brett Delahunt, Professor, Department of Pathology and Molecular Medicine, University of Otago, Wellington; Stephen Mark, Urologist, Christchurch Hospital, Christchurch—and Chairman, New Zealand Section, Urological Society of Australia and New Zealand

Correspondence: Professor John Nacey, Department of Surgery, University of Otago, PO Box 7343, Wellington, New Zealand. Email: john.nacey@otago.ac.nz

References: