Position Statement on Testing for Prostate Cancer

Cancer Society of New Zealand policy on prostate cancer screening
Approved August 2011
Due for review 2016

Key Messages

- There is still no clear evidence to recommend a national screening programme for prostate cancer.
- General practitioners (GP's) and other healthcare providers are encouraged to give all men the opportunity to discuss the benefits and potential harms associated with testing for prostate cancer before having any form of testing. The discussion should also include possible treatment options, including active surveillance, and any associated side effects, should the test result be a positive one.
- Men with a family history of prostate cancer are at a higher risk than the general population and are encouraged to discuss with their doctor the merits of testing for prostate cancer from the age of 40 years.
- Testing men older than 75 years is associated with increased harms and less benefits, and is not recommended
- Any decision to test should be made as a shared, informed decision between GPs and the man. His values, understanding and acceptance of risk, and other personal preferences should be taken into account.

Introduction

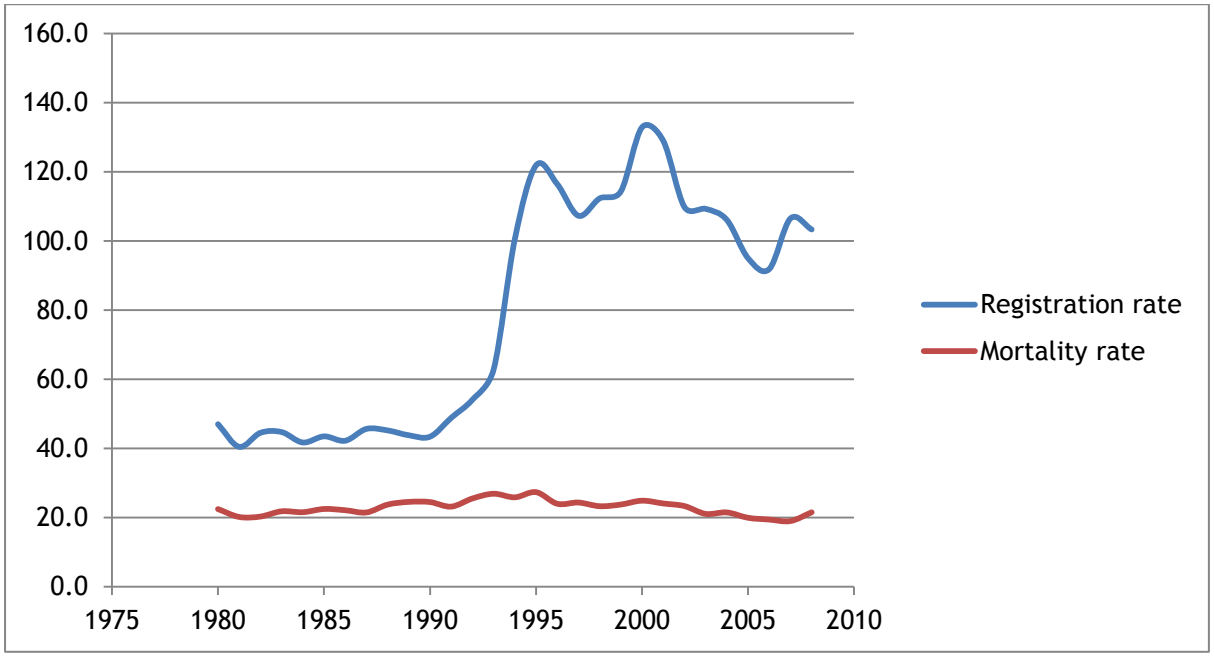
In New Zealand, prostate cancer is the most commonly diagnosed cancer in men. Men who are 60 years old or older make up 81 per cent of those diagnosed. It is the third leading cause of cancer death in men. Maori men are diagnosed with more advanced stages of the disease and have higher death rates than non-Maori. Of the men who do die from prostate cancer, 97 per cent are 60 years old or older (Ministry of Health, 2011)Prostate cancer is a significant public health issue for men and one for which there have been repeated demands for a national screening programme.

Controversy around screening for prostate cancer has been on-going for over a decade, causing confusion with the general public and medical practitioners alike. The most commonly used tests for prostate cancer are the prostate specific antigen blood level (PSA test) and the digital rectal examination (DRE). In many developed nations the registration rate of prostate cancer rose sharply during the 1980s and early 1990s due to the introduction of PSA testing. New Zealand was no different, although the increase did not start until the early 1990s. Only recently have registrations started to plateau and slowly decline.

During this time, however, the mortality rate has not significantly declined in New Zealand. Overseas, there are varying trends in mortality rates. Mortality rates are lower than those prior to the introduction of PSA testing in some countries such as Italy, Canada and USA. In countries such as Australia, Finland, New Zealand and the United Kingdom the

rate has been stable with small decreases. However, the mortality rates are still higher than before the introduction of testing. In other countries there has been seen a slow increase in the mortality rate over time (e.g. Poland, Belgium Ireland and Argentina) (Bouchardy C et al., 2008; Damber J & Aus G, 2008).

New Zealand Prostate Cancer Registration and Mortality Rates 1980—2008



New Zealand cancer historical summary 1945-2008,
Ministry of Health 2010

PSA testing has changed the patterns of prostate cancer diagnosis. Whether it has led to changes in mortality rates is less clear. It is possible that improvements in surgery, radiation treatment, and advances in drug therapies, have had an impact on mortality rates (Smith D.P., Supramaniam R., Marshall V. R., & Armstrong B. K., 2008). Some evidence from the USA suggests that where PSA testing is most common, there is a correspondingly lower proportion of men that present with metastatic disease and a lower prostate cancer mortality rate (Loeb S & Catalona W, 2008).

PSA tests are difficult to interpret. It is unclear at what point a PSA level is normal or abnormal. A threshold of 4ng/ml has been used as the upper limit of normal for a number of years. However studies have shown that a considerable proportion of men with total PSA levels <4ng/ml have histological evidence of prostate cancer (Loeb S & Catalona W, 2008). Also, the PSA can be elevated from a number of causes other than prostate cancer. These difficulties give the PSA test poor specificity (false negatives) and poor sensitivity (false positives).

Research Evidence

Up until 2008 randomised controlled trial (RCT) published data on screening for prostate cancer results have been conflicting. Most concluded that while screening is associated with harms, the benefits of reduced mortality were uncertain or minimal (Ilic D, O'Connor D, Green S, & Wilt T, 2006; Lin K, Lipsitiz R, Miller T, & Janakiraman S, 2008; Lu-Yao G et al., 2002).

Results from two more recent screening trials were released in 2010. The European Randomised Study of Screening for Prostate Cancer (ERSPC) that began in the early 1990s evaluated the effect of screening with the PSA test on death rates from prostate cancer on 182,000 men (Schroder et al., 2009). It concluded that at a median follow-up time of nine years, there was an absolute risk reduction of 0.71 deaths per 1000 men. This meant that 1410 men would need to be screened and 48 additional cases of prostate cancer treated to prevent one death. PSA-based screening reduced the rate of death from prostate cancer, but was associated with a high risk of over-diagnosis.

The other trial was based in the United States of America (Andriole et al., 2009). This trial (the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial) involved a smaller sample of men (76,693) compared with the ERSPC trial. At seven to ten years follow-up, the trial concluded that the death rate from prostate cancer was very low in both groups and did not differ significantly. This trial had limitations and has been criticised on a number of issues. One suggested limitation is that the findings were reported too early thus preventing any long term benefit from screening to be detected. Further, the PLCO study had major contamination of the control arm due to increasing opportunistic screening over the time of the study. This led the National Cancer Institute of the US to suggest the study findings should be disregarded.

A third recently reported study from Sweden is known as the Goteborg trial (Hugosson et al., 2010) randomised nearly 20,000 men to either PSA screening or the control group with a median follow-up of 14 years. The results showed that the absolute cumulative risk reduction of death from prostate cancer was 0.4% (from 0.9% in the control group, to 0.5% in the screened group).

At 14 years of follow-up, the number needed to be invited to screening to prevent one prostate cancer death was 293, and the number needed to be diagnosed to prevent one death was 12. The Goteborg trial indicates that the reduction in cancer death in a screened group could increase with longer follow up and reach levels at least equivalent to the benefits breast and cervical screening have shown. Researchers also noted there was some over diagnosis in the screened group where prostate cancer incidence was 12.7% compared to the control group incidence rate of 8.2%. The report authors note in their summary that "PSA screening is associated with a long and varying lead time, resulting in a risk of over-diagnosis that is substantial but still of a largely unknown magnitude" (Hugosson, et al., 2010).

In a further non-randomised study in Austria (population in 2010 8.5 Million) that took place between 1993 and 2005 86,000 men aged 45 to 75 underwent PSA testing in the province of Tyrol. They found a reduction of 38.8% in death rate compared to the period 1986 to 1990 prior to PSA testing. The death rates were also significantly lower than in the rest of Austria where PSA testing was not free of charge and not actively promoted (Bartsch et al, 2008).

The New Zealand Parliamentary Select Committee on the Early Detection and Treatment of Prostate Cancer released their findings on prostate cancer testing in 2011(Health Committee, 2011). Contained within that is a consensus statement from representatives of Cancer Control New Zealand, Cancer Society of New Zealand, New Zealand Guidelines Group, Prostate Cancer Foundation of New Zealand, Royal College of General Practitioners and the Urological Society of Australia and New Zealand. The report concludes that:

- There is evidence that PSA testing saves some lives
- This must be balanced against the known side effects of further investigation and treatment.
- New Zealand men should be encouraged to make an informed choice
- Men with a strong family history of prostate cancer should be encouraged to discuss testing with their GP.

Summary

Factors that increase the risk for developing prostate cancer are:

- increasing age is the primary risk factor with most cases diagnosed in men over the age of 65 years
- a family history of one or more close relatives
- there is some data to suggest that men with relatives (male or female) who have mutations in the BRCA1 and/or BRCA2 genes have a slightly elevated risk for prostate cancer (Edwards S et al., 2003; Sinclair C, Berry R, Schaid D, Thibodeau S, & Couch F, 2000; Thompson D, Easton D, & the Breast Cancer Linkage Consortium, 2002)

Whilst there is no clear evidence to recommend a national screening programme, cancers diagnosed by testing are more likely to be detected at an early stage when most can be treated successfully by a number of different treatment options. Therefore men, particularly those at higher risk, are encouraged to discuss with their doctor the merits of testing for prostate cancer, to enable them to then make an informed choice as to whether or not testing is right for them. GP's should have a clear understanding of the issues with PSA testing. A discussion about testing should include the following points:

- the likelihood of a prostate cancer diagnosis
- the possibilities of false positive and false negative results
- the anxiety associated with a positive result
- the range of possible treatment choices should a biopsy result be positive

Men should be informed that an abnormal result will require further evaluation often involving a biopsy. Recommendations for ceasing any testing suggest 75 years of age as being the appropriate limit (U.S. Preventive Services Task Force, 2008). Some suggest the maximum benefits of screening are in men up to 70 years of age (Lamb D et al., 2007). When to start testing is dependent on the individual's risk profile and the informed choice of each man. Men who are at highest risk may consider discussing these issues with their GP from the age of 40 years. The maximum benefits for testing are for men 50 to 70 years of age.

Treatment options include, surgery in the form of prostatectomy, radiation treatment both external and via brachytherapy and hormone therapy. Also, especially for low risk, older men, the option of active surveillance should also be discussed as an appropriate management strategy. (Cancer Society, 2008).

Testing can lead to a cascade of unanticipated events if patients do not understand the potential, but unproved, impact on survival, treatment effectiveness, side effects and lifelong changes associated with being a "cancer survivor" (Wilt T & Thompson I, 2006).

Shared decision making helps an individualised, patient-centred approach. Patients with cancer should actively participate in making quality decisions that are based on their informed values (Stacey D., Samant R., & Bennett C., 2008). The use of decision aids can:

- reduce decisional conflict
- increase knowledge and understanding of prostate cancer
- promote greater involvement in the decision making process (Volk et al., 2007).

Most agencies around the world do not support population based screening and have some form of recommendation that decisions to test for prostate cancer should be made on an individual basis and in consultation with a medical professional:

The Australian Cancer Council and the Australian Health Ministers' Advisory Council state in a joint statement that: "Men considering being tested for prostate cancer should do so with the information on both the benefits and harms of testing and treatment. We encourage men to speak to their doctor so they can make an informed choice about prostate cancer testing. Current evidence indicates that the PSA test is not suitable for population screening, as the harms outweigh the benefits." (Cancer Council Au 2010)

The American Cancer Society states that "The American Cancer Society (ACS) does not recommend routine testing for prostate cancer at this time. ACS believes that doctors should discuss the pros and cons of testing with men so each man can decide if testing is right for him. If a man chooses to be tested, the tests should include a PSA blood test and DRE (digital rectal exam) yearly, beginning at age 50, for men at average risk who can be expected to live at least 10 more years."(American Cancer Society 2009)

The UK Cancer Research Council states: "in the UK, there is no national screening programme for prostate cancer because trials have not yet shown clear evidence that screening will reduce deaths from this disease. Also, many men diagnosed with

prostate cancer have very slowly growing cancers that will never cause any symptoms or problems in their lifetime. So at the moment there is no clear benefit in diagnosing prostate cancer early and it may actually cause harm for some men."(Cancer Research UK 2009)

Urological Society of Australia and New Zealand states: "The Urological Society of Australia and New Zealand (USANZ) currently does not recommend the use of mass population-based Prostate Specific Antigen (PSA) screening as public health policy, as published studies to date have not taken into account the cost effectiveness of screening, nor the full extent of over-detection and over-treatment."(Urological Society ANZ 2009)

This position statement has been reviewed and endorsed by the Society's Medical Director Associate Professor Chris Atkinson as well as the National Health Promotion Committee, the members of which are:

- Professor Richard Edwards, Department of Public Health, University of Otago, Wellington
- Dr Stewart Reid, General Practitioner, Lower Hutt
- Professor Grant Schofield, Centre for Physical Activity and Nutrition, AUT University
- Ann Shaw, Health Promotion Coordinator, Breast Screen Coast to Coast
- Dr Tony Reeder, Director Cancer Society Social and Behavioural Research Unit (CSSBRU),

Department of Preventive and Social Medicine, University of Otago

- Donna Leatherby, Toiora Healthy Lifestyles, New Plymouth
- Dr John Waldon, Post-Doctoral Scholar in Te Pumanawa Hauora, Massey University
- Jan Casey, Consumer Representative

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