Screening for prostate cancer is not recommended

Lamb et al argue for population-wide testing with the PSA test for prostate cancer.¹ Their argument is that screening saves lives. However, they ignore the complexities of screening for prostate cancer, and the large potential for doing harm.

Firstly, the evidence for a mortality benefit is weak. It is true that the US PLCO trial was heavily contaminated, possibly beyond repair.²,³ Lamb et al therefore prefer to rely on the European ERSPC and Swedish Gotenburg trials, that both showed a statistically significant mortality benefit.⁴,⁵ What they do not mention is that the Gotenburg trial is part of the ERSPC, and when its results are removed from the analysis, the ERSPC mortality benefit is no longer statistically significant.⁶ So in the end the argument of Lamb et al is based on results from a single trial, that happens to be one with a design that makes it vulnerable to selection bias.⁶

In addition to this single positive trial result there is some observational evidence that the prostate cancer mortality decline in US and UK may be due to screening, but of course this evidence comes with all the caveats about the confounding that observational studies are subject to.⁷–⁹ In all, not a strong case.

Secondly, even if we accept the case for a mortality benefit, Lamb et al completely ignore the elephant in the room. That elephant is called overdiagnosis and overtreatment. Screening leads to overdiagnosis because many tumours detected by screening would never become clinically apparent within the lifetime of the patient, and for prostate cancer the risk of overdiagnosis is clearly large.⁵,⁹,¹⁰ And overdiagnosis leads to overtreatment because we cannot reliably predict which cancers will progress and which will stay indolent. The side-effects of treatment for prostate cancer are severe.¹¹ Therefore the decision to screen or not cannot be based on the simple argument that it saves lives (even if we accept it does), but it must make the difficult balance between reduced mortality and increased morbidity.

For the Assessing Cost-Effectiveness of Prevention study we did an analysis using the results from the ERSPC trial on mortality reduction and incidence increase.¹² We used disability-adjusted life years (DALYs), an outcome measure that combines mortality and morbidity, to evaluate prostate cancer screening. Our results show that screening does indeed decrease prostate cancer mortality, but that in a screened population more disability adjusted life years are lost than in an unscreened one. We therefore concluded that prostate cancer screening is not recommended.

We are not alone. The U.S. Preventive Services Task Force is in the process of revising its previous recommendation for screening of men under 75 years of age to one of not screening at all, based on a similar line of reasoning outlined above: the evidence for mortality benefit is weak, and for harm is strong.¹³

One would wish the New Zealand men a more serious discussion than the simplistic statement that screening saves lives.
Jan J Barendregt  
Associate Professor of Epidemiological Modelling  
School of Population Health, University of Queensland  
Brisbane, Australia

References: