

PSA in men in their 40s predicts risk of prostate cancer death

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PSA SCREENING FOR PROSTATE CANCER REMAINS CONTROVERSIAL. WHILE SCREENING

has been shown to reduce mortality from prostate cancer, it has done so at the cost of considerable overdiagnosis and subsequent overtreatment. There is a clear need to refine the screening process if it is ever to be adopted beyond the current ad hoc screening approach in the UK.

The European Association of Urology (EAU) concentrates on the merit of risk stratification at a relatively young age by use of a baseline PSA.¹ This is based on evidence that a PSA reading for a man in his 40s is strongly predictive not only of future prostate cancer risk, but more importantly the risk of aggressive prostate cancer and prostate cancer related death.

There is an increasing body of evidence surrounding the role of baseline PSA testing and Vickers and colleagues have published new data from the large Malmö Preventive Project in Sweden, in the *BMJ*.²

This study used frozen blood from a cohort of 21,277 men, aged 27–52 years, who had participated in the project between 1974 and 1984. A retrospective analysis of PSA values was performed, and then analysed against records in the Swedish National Cancer Registry for subsequent development of prostate cancer over the next 25–30 years. The main outcome measure was metastasis or death from prostate cancer. Importantly, rates of PSA testing outside the study in this cohort were extremely low, limiting potential contamination of the study findings by opportunistic screening during the observation period.

Risk of death from prostate cancer was found to be associated with baseline PSA levels. Almost half (44%) of deaths occurred in men with a PSA in the highest 10% (≥ 1.6 ng/ml) at age 45–49 years with a similar proportion for those in the highest 10% (≥ 2.4 ng/ml) at age 51–55 years.

Risk of metastasis or prostate cancer death was low for those whose PSA was below the median at 45–49 years (< 0.68 ng/ml) or 51–55 years (< 0.85 ng/ml). The 15-year risk for these patients was 0.09% and 0.28% respectively, suggesting that for these men, any

subsequent PSA testing could be at much longer intervals than those with higher levels of baseline PSA.

The authors conclude that these results suggest that for at least half of men, three lifetime PSA tests (mid to late 40s, early 50s and at age 60 years) would be sufficient screening to identify the small number of men developing clinically significant prostate cancer, allowing resources to be concentrated on those at higher risk.

Using this data, and those from a number of other similar studies, the EAU recommends that all men aged 40–45 years should be offered a baseline PSA to ‘initiate a risk-adapted follow-up approach with the purpose of reducing prostate cancer mortality and the incidence of advanced and metastatic cancer’.

It recommends that intervals for subsequent PSA tests should be based on baseline PSA concentration with a screening interval of two to four years for men with a PSA ≥ 1.0 ng/ml at 45 to 59 years of age, whereas in men with a PSA < 1.0 ng/ml the interval could be ‘up to eight years’.

While this is an EAU guideline recommendation, this approach to

PSA testing has not been formally adopted in the UK. However, GPs may find it useful for men who have had a PSA test as part of our current ad hoc informal screening programme, who then ask when they should have their PSA repeated.

It could potentially reduce the number of men with stable low PSA levels who currently continue to have annual PSA tests, and allow resources to be concentrated on those men who, while having a PSA within their age-specific normal range can be identified as being in a higher risk category and encouraged to continue surveillance.

REFERENCES

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- 2 Vickers AJ, Ulmert D, Sjoberg DD et al. Strategy for detection of prostate cancer based on relation between prostate specific antigen at age 40–55 and long term risk of metastasis: case-control study. *BMJ* 2013;346:f2023

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