14-year trial shows that prostate cancer screening reduces deaths by almost half

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or clues such as pre-cancerous cells - is strongly encouraged as a way of improving public health. However, there are doubts as to whether the benefits of screening outweighs the negatives. Over-diagnosis is one of the biggest worries. Since the number of people who need to be diagnosed and treated to save one life can be high, there are concerns about the overall effectiveness of such programmes.

Jonas Hugosson, from the University of Gothenburg, Sweden, and colleagues undertook a randomised controlled trial to assess the merits of screening men for the presence of prostate-specific antigen (PSA). Increased concentrations of this antigen indicate a higher risk of prostate cancer. The findings are published in an Article published Online First in The Lancet Oncology.

The study, which is still ongoing, began recruiting men between the ages of 50 and 65 years to either a screening or control group. Each group had almost 10 000 men. When men were found to have an increased PSA, they were offered additional tests such as digital rectal examination and prostate biopsies.

Over the 14 years of follow-up, prostate cancer mortality was decreased almost by half in the screening group compared with in the control group. Prostate cancer was diagnosed in 1138 (11•4%) men in the screening group and 718 (7•2%) in the control group. Of those men with detected prostate cancer in the screening group, 896 (78•7%) of 1138 were diagnosed as a result of an invitation to the study.

Prostate cancers detected in men who were screened were also more likely to be early-stage cancers. For example, advanced prostate cancer was detected in 46 men in the screening group compared with 87 in the control group.

The authors say: "In this trial prostate-cancer screening was well accepted by the general population and can result in a relevant reduction in cancer mortality, greater than that reported in screening for breast or colorectal cancer."

They add:* "The risk of overdiagnosis is less than previously reported, but still 12 men need to be diagnosed to save one life. Among men participating in the study at or below age 60, the risk of prostate cancer death was notably low with only a quarter of the expected rate of death from prostate cancer"

Nevertheless, they caution*: "As the benefit from PSA screening requires at least 10 years to take effect, it seems questionable to invite all men over the age of 70 years for PSA testing."

In an accompanying Comment, David E Neal, at the University of Cambridge, UK, is cautiously optimistic about the results. Neal says that the findings "show that in certain circumstances, PSA testing and early diagnosis reduces death from prostate cancer." However, he adds, "it does not imply that PSA screening programmes should now be introduced internationally."

The next goal, says Neal, is to better identify men with intermediate and high-risk prostate cancers. "Biomarkers such as IGF or kallikrein family members might improve sensitivity and specificity," he concludes.

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