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29 September 2013 The European CanCer Organisation (ECCO)

Prostate cancer screening using the prostate-specific antigen (PSA) test is widely used in France despite a lack of evidence showing that it reduces cancer deaths. Now, researchers have shown that men experience more harm than good from routine PSA screening, according to research to be presented today (Monday) by Professor Mathieu Boniol, at the 2013 European Cancer Congress (ECC2013) [1].

Prof Boniol, Research Director at the International Prevention Research Institute (iPRI) and Professor at the Strathclyde Institute for Global Public Health at iPRI, Lyon, France, will tell the congress that the total harm men experience in terms of impotence and incontinence, and the side-effects from prostate cancer treatments, severely affects their quality of life, and should further discourage the use of PSA testing for prostate cancer screening.

Prof Boniol will say: “The test measures PSA protein levels, which are produced by the prostate gland, in a man’s blood, and may help detect early cancer. However, we believe that PSA testing should be used as an additional aid in the diagnosis and management of prostate cancer rather than as the major entry point for prostate biopsy and further examinations. PSA testing should be reduced and more attention should be given to the harmful effects of screening related to the use of the test.

“We wanted to provide clinicians with a better idea of the consequences of organised PSA screening and we thought that providing numbers for the different side-effects following PSA testing would be easiest to interpret. Therefore, we estimated the total harm that men could endure if exposed to PSA testing by applying different side-effect estimates to a virtual population of 1,000 men aged 55–69 years. We also included a group of 1,000 men who were not screened for prostate cancer for comparison,” he says.

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Using data from the European Randomized Study of Screening for Prostate Cancer (ERSPC), which was the only trial to show that PSA testing was associated with a significant reduction in prostate cancer deaths, information on the number of men needed to undergo a prostate biopsy and the number of prostate cancer cases diagnosed was extracted. These data were combined with other published data on side-effects associated with biopsy and with the surgery used to remove prostate tumours.

“Overall, the death rates due to prostate cancer were in the same order of magnitude between the two groups of men: we estimated that 5.17 deaths due to prostate cancer would occur in the group of unscreened men compared to 4.1 deaths in the group who underwent PSA screening.

“Yet in order to prevent one death from prostate cancer in the 1,000 men screened for PSA, the number of biopsies would double with 154 additional prostate biopsies, and, of 35 additional prostate cancers diagnosed, 12 additional cases of impotence and three additional cases of incontinence would occur. Thus, the harm from routine PSA testing can have a serious effect on the quality of life of patients and provides additional evidence against the use of organised screening for prostate cancer,” he says.

Currently, the PSA test is used widely throughout Europe for prostate cancer screening, although there in insufficient evidence to support its utility and there is no organised, population-based prostate cancer screening programme. According to European Union Cancer Database (EUCAN) estimates, over 73,600 new cases of prostate cancer were diagnosed in France in 2012 and around 8,600 men died from the disease [2].

“Approximately 75% of men aged 60 in France have had a PSA test done within the previous three years and despite no national recommendation to promote PSA testing, nor any national organisation, it may partly explain the reported high incidence rates of prostate cancer throughout France,” Prof Boniol says.

“All available evidence suggests that PSA testing for prostate cancer should not be routinely recommended for asymptomatic men in Europe. When discussing the use of the PSA test with patients, physicians should make them aware of the limitations of the test and the likelihood of it causing harm. We hope that our research findings will help clinicians to make decisions as to when to propose a PSA test, and to help the patient to decide whether or not to accept this recommendation,” he will say.

Prof Boniol will also present results from research investigating the harm associated with prostate cancer surgery, in which investigators found that in France the risk of dying 60 days after an operation tripled in men aged 70 years or older.

Removal of the entire prostate gland is the surgical procedure used to treat prostate cancer and it is called a radical prostatectomy. It can be performed by open (laparotomy) or keyhole (laparoscopic) surgery. The procedure is associated with a risk of dying after the surgery. However, the degree of increased risk is unknown and Prof Boniol says it needs to be considered when evaluating the harm linked with prostate cancer treatment.

Records for men aged over 40 who had undergone a radical prostatectomy between 2007 and 2011 were retrieved from the French Technical Agency for Information on Hospitalization database. A total of 120,333 prostate cancer surgeries were performed among the 637 hospitals included in the database, of which 68,106 were open surgery and 52,227 were keyhole surgery.

The researchers found that a high percentage of prostate cancer surgery (18%) was performed in men older than 70. They also found that 60 days after prostate cancer surgery there were 183 deaths (0.15%). The risk of dying was 0.11% for men aged 40–69 years and increased to 0.36% for men aged 70 years or older, 60 days post surgery.

Prof Boniol will say: “We found that a high number of prostate cancer surgical procedures were performed on older men, over 70 years of age, a group of individuals where surgery should be viewed with extreme caution as the potential to provide a few additional years of life is also associated with a very high risk of premature death. In this group of men, the risk of dying following radical prostatectomy was much higher than with younger men.

“The results of this research also question the use of prostate cancer surgery. One of the main problems with using PSA testing for prostate cancer screening is over-diagnosis. An over-diagnosed prostate cancer patient is labelled as a prostate cancer case, but he will never suffer from the disease although he will experience the potential side-effects of prostate cancer treatment. Our findings show that elderly men are over-treated for prostate cancer, and that, for them, surgery is unlikely to provide any benefit.

“We hope that expert committees evaluating new clinical guidelines for the management of prostate cancer will request that the benefits and harm of prostate cancer surgery be assessed, especially in relation to the use of PSA testing.”

President of ECCO, Professor Cornelis van de Velde, commented: “Screening for prostate cancer is controversial and recommendations exist against PSA-based screening. Despite this, it is widely used especially in France. This national study indicates that it causes more harm than good, especially in men aged 70 or older who have triple the risk of younger men of dying after the operation. These results should lead to stricter guidelines and registries to evaluate the over-treatment of prostate cancer.”

Co-scientific chair of ECC2013 and ESMO spokesperson, Professor Cora Sternberg, commented: “PSA screening holds the promise of early diagnosis when cancer is localised to the prostate and treatment is curative. Screening has, however, also led to many false positive results, over-diagnosis of disease and significant morbidity as demonstrated in this French study, particularly in men over 70 years of age.

“International recommendations vary on the value of routine PSA screening. The European Association of Urology says that current evidence is insufficient to recommend the adoption of population screening for prostate cancer as a public health policy due to the large overtreatment effect. The American Urological Association suggests that for men aged 55 to 69 years, PSA screening involves weighing the benefits of preventing prostate cancer mortality in one man for every 1,000 men screened over a decade against the known potential harms associated with screening and treatment. Men are urged to talk with their doctors about benefits and harms of testing. Along the lines of this French study, the American Cancer Society also suggests discussion with the physician regarding the benefits and hazards of early detection.” [3]

(ends)

[1] The 2013 European Cancer Congress is the 17th congress of the European CanCer Organisation (ECCO), the 38th congress of the European Society for Medical Oncology (ESMO) and the 32nd congress of European Society for Therapeutic Radiology and Oncology

(ESTRO).

[2] European Journal of Cancer, Vol 49, issue 6 (April 2013), pages 1374-403."Cancer incidence and mortality patterns in Europe: estimates for 40 countries in 2012." Available from: http://eco.iarc.fr. Accessed on 01 July 2013.

[3] Professor Sternberg is Chief of the Department of Medical Oncology, San Camillo and Forlanini Hospitals, Rome, Italy.

[4] The work was funded by the International Prevention Research Institute, Lyon, France.

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