Under strict embargo: 01:00 CEST, Saturday 02 July

New research supports risk-based prostate cancer screening

Data from the world’s largest prostate cancer screening study provides further evidence to support the introduction of a targeted screening programme for the disease, say researchers.

In 2009, the European Randomised Study of Screening for Prostate Cancer (ERSPC) showed that screening can reduce mortality from prostate cancer by between 20-35 percent. But the earlier and more frequent diagnoses which screening enables, also mean men spend longer living with their cancer – and concerns have persisted about the impact of this on their quality of life.

The new analysis – presented today at the European Association of Urology Annual Congress (EAU22) – reveals that men who undergo screening spend longer in the earlier stage of the disease without signs of progression, where quality of life is known to be the least impaired. As the treatment the men receive is the same, however, men in whom the cancer was detected in normal clinical practice see their disease progress faster after diagnosis. However, if the disease metastasises, the number of years men spend with metastatic disease is similar across both groups.

The researchers, from the Erasmus MC Cancer Institute at University Medical Centre Rotterdam (NL), analysed data from just over 43,000 men in the Dutch cohort of the ERSPC. The ERSPC recruited over 180,000 men across eight countries in the 1990s, with half randomised to enter a prostate cancer screening programme of regular PSA tests.

The new study looked at how long it took before men saw their prostate
cancer progress to different stages of the disease following diagnosis. These stages were:

1. **Biochemical recurrence** – when men whose prostate cancer has been treated with radiotherapy or surgery show a high level of prostate-specific antigen (PSA), indicating that the disease has returned.

2. **Metastatic disease** – when the cancer has spread beyond the prostate to other organs of the body and so is untreatable.

The results show that men in whom the disease is detected through a screening programme remain on average a year longer without progression. In men where the disease has progressed, if it becomes metastatic, then this is on average two and a half years later in men in screening, compared to those whose cancer was detected outside the screening programme.

Sebastiaan Remmers, from the Erasmus MC Cancer Institute (NL), who will present the research today [Saturday 2 July 2022] at EAU22, said: “No-one wants to be confronted with a cancer diagnosis, and screening means more men know they have prostate cancer and live longer with that knowledge. While screening can lead to overdiagnosis, our research shows it can also postpone – or even avoid – the harm that prostate cancer can bring. That tips the balance in favour of further developing organised individualised screening programmes.

Prostate cancer screening is standard in only a few European countries or regions, including Lithuania and parts of Sweden. Most other countries, including the UK, do not systematically screen men for the disease due to concerns about overdiagnosis and overtreatment. PSA tests tend instead to be carried out on an ad hoc basis when patients go to their doctors with concerns.

Professor Monique Roobol, from the Erasmus MC Cancer Institute, said: “Advances in how prostate cancer is diagnosed and treated have changed the balance of risks and benefits associated with screening for the disease. We can reduce the detection of low-risk cancers considerably by adequate risk stratification. In addition, in the past, diagnosis automatically meant radical
treatment, such as surgery or radiation, which all have side effects. Now we have other options for low-risk cancers, such as active surveillance including MRI scans, which have a more limited impact on men’s quality of life. Given that screening reduces mortality and metastatic disease, and – as our research shows – gives men more years in those stages of the disease that have less impact, then the arguments against screening are becoming outdated.”

The European Association of Urology, the leading authority within Europe on urological practice, research and education, is calling for prostate cancer screening to form part of the European Union’s new ‘Beating Cancer’ plan. The EAU recommends a risk-based approach to prostate cancer screening, which would calculate the appropriate screening frequency and follow up for each patient based on factors such as PSA level, family history, ethnicity, gene mutation and prostate size.

Professor Hendrik Van Poppel, from Katholieke Universiteit Leuven in Belgium (BE), who chairs the EAU Policy Office, said: “Prostate cancer is one of the leading causes of death in men in Europe: number one in Sweden, number two in Germany and number five in many other countries. In the UK, more men die of prostate cancer each year than women from breast cancer. Despite this, we still have no European-wide screening programme for prostate cancer.

“The systematic and personalised approach to screening advocated by the EAU will significantly reduce the likelihood of over-diagnosing or over-treating cancers that pose minimal threat. But, most importantly, it will preserve the best possible quality of life for prostate cancer patients and it will save lives.”

-ENDS-

Notes to editors:

About EAU22
Europe’s biggest urology congress will take place from 1-4 July 2022 in Amsterdam, The Netherlands. With nearly 1,300 abstracts presented and moderated live, the 37th Annual Congress of the European Association of Urology (EAU22) will be amongst Europe’s biggest medical congresses in 2022.
Clinicians, scientists, and patients will meet to discuss topics such as:

- Prostate cancer: new developments to improve treatments of the most common male cancer
- Urinary incontinence: a growing concern for the elderly population
- Practice changing treatments for both bladder and kidney cancer
- Prevention and treatment of urinary stones; 1 in 10 people (55 million adults in Europe) will form a stone at some point
- Special track for representatives of patient advocacy group on Monday 4 July

...and many other conditions related to the male and female urinary tract system and male reproductive organs. Review the full scientific programme on the congress website.

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The abstract, How long do men stay in intermediate stages between randomization and death: Results of ERSPC Rotterdam, is presented to the European Association of Urology Annual Congress (EAU22) in Amsterdam on Saturday 02 July, 2022.

Abstract:

A0363: How long do men stay in intermediate stages between randomization and death: Results of ERSPC Rotterdam
**Introduction & Objectives**

The ERSPC has demonstrated that, compared to men not offered active screening, PSA-based screening results in a relative increase in (low-risk) diagnoses and a reduction in metastatic disease and PCa specific mortality. This suggests that the burden of the disease in men randomized to active screening is different compared to men randomized to the control arm. Therefore, we evaluated the incidence and average duration of having PCa, biochemical recurrence (BCR) and metastatic disease without progression to a subsequent disease stage or progression to death between randomization and (PCa) death (Fig 1A).

**Materials & Methods**

A total of 43,376 men aged 55-74 yrs were randomized in ERSPC Rotterdam (1993-1999) in the screening (S-) arm (PSA-based screening) and the control (C-) arm. Detailed follow-up and mortality data up to 2020-01-01 were analyzed using multi-state models. BCR was defined as a PSA ≥2 ng/ml nadir for radiotherapy (RT) and twice a PSA level ≥0.2 ng/ml for radical prostatectomy (RP). To estimate the length of being in a particular state, we used a time horizon of 10 yrs.

**Results**

Of the 42,376 men randomized, we excluded 69 men from analyses who were diagnosed before randomization. In the S-arm, 3059/21,169 men (14%) were diagnosed with localized PCa and 170/21,169 men (1%) were diagnosed with metastatic PCa (Fig 1B). In the C-arm, 1737/21,138 (8%) men were diagnosed with localized disease and 367/21,138 (2%) men with metastatic disease at diagnosis. If diagnosed with localized PCa, men in the S-arm lived on average 8.0 yrs without progression over a 10 yr time period while this was 7.1 yrs for men in the C-arm. If experiencing BCR (18-19% of men randomized in the S- and C-arm), men lived on average 7.2 without progression in the S-arm over a 10 yr time period, while this was only 1.6 yrs for men in the C-arm. If experiencing metastatic disease, men lived on average 5 yrs in both study arms over a 10 yr time period.

**Conclusions**

We assessed the incidence and average length of being in a particular state between randomization and death. After diagnosed, more men were confronted with metastatic PCa in the C-arm. The proportion of men who experienced BCR after localized PCa was the similar. However, after experiencing BCR, men in the S-arm lived on average 5.6 yrs longer without further progression. Our results confirm the ability of early detection in reducing suffering and dying from PCa.