Increased risk of prostate cancer in men with BRCA2 gene fault

September 17 2019

Credit: CC0 Public Domain

Men with the BRCA2 gene fault have an increased risk of prostate cancer and could benefit from PSA (prostate specific antigen) testing to help detect the disease earlier, according to researchers funded by

Cancer Research UK.

Previous studies have shown that PSA is not a suitable test for screening for prostate cancer in the general population, and this remains the case. There are limitations to the PSA test—including false positives, false negatives and overdiagnosis.

But new research found that PSA tests were more likely to pick out more serious forms of prostate cancer in men who carry the BRCA2 gene fault than in non-carriers—suggesting these men could benefit from regular PSA testing.

In the study published today in *European Urology*, researchers at The Institute of Cancer Research, London, looked at around 1400 men and compared those who don't carry the BRCA2 gene fault with those who do.

Men were offered a yearly PSA test and depending on the result, they were either offered a biopsy to confirm their disease and treated if needed or asked to come back the following year.

The researchers found that men who carry the BRCA2 gene fault were almost twice as likely to be diagnosed with prostate cancer than non-carriers.

They also found that carriers were diagnosed at a younger age—an average of 61 compared with 64 in non-carriers.

Importantly, men with the BRCA2 gene fault were diagnosed with more serious tumours—with 77% of men having clinically significant disease compared with 40% of non-carriers.

The study wasn't able to look at whether PSA testing reduced the

number of men who died from prostate cancer, which is needed to prove the value of screening in any group.

There are many different things that can raise PSA levels, including an enlarged prostate, certain medications, urinary tract infections or recent ejaculation.

And receiving a false positive result can lead to unnecessary worry and unnecessary biopsies.

This research provides more evidence that the BRCA2 fault increases the risk of prostate cancer in men and shows that a better test is needed to diagnose them.

The BRCA1 and 2 genes are linked to an increased risk in breast and ovarian cancer. But it's less well known that the BRCA2 fault also increases the risk of prostate cancer, although we don't know by exactly how much.

Estimates are around 1 in 300 men could be carrying the gene fault, but only some of them will go on to develop prostate cancer.

Study leader, Professor Rosalind Eeles, Professor of Oncogenetics at The Institute of Cancer Research, London, and Consultant Clinical Oncologist at The Royal Marsden NHS Foundation Trust, said: "For women who undergo genetic testing, options are available to them if they carry a BRCA fault, including preventative surgery and increased screening. But there's no prevention pathway in place if men decide to find out if they're a carrier. Which is why our research is so important.

"Men may get tested for the BRCA fault due to a family history of breast cancer, as they could pass the gene onto their children, which is especially significant if they have daughters. And our research offers this

group of men more insight into their own health.

"Based on our results, we would recommend offering men who carry a fault in the BRCA2 regular PSA tests, so that they can be diagnosed and treated earlier."

Professor Charles Swanton, Cancer Research UK's chief clinician, said: "Understanding more about people at higher risk of prostate cancer is an incredibly important area of research.

"Previous studies have shown that PSA is not a suitable test for screening for prostate cancer in the general population. But we still need to understand whether PSA testing would reduce deaths from the disease in any high-risk groups before we make any recommendation.

"All doctors want the best for their patients and don't want to leave any stone unturned, so some may explain the potential risks associated with PSA testing and still recommend this in high-risk groups despite not knowing that it reduces deaths. Men who are worried about their prostate cancer risk or have a family history should discuss it with their doctor."

More information: Elizabeth C. Page et al, Interim Results from the IMPACT Study: Evidence for Prostate-specific Antigen Screening in BRCA2 Mutation Carriers, *European Urology* (2019). DOI: 10.1016/j.eururo.2019.08.019

Provided by Cancer Research UK