Prostate cancer tests underestimate aggressiveness of disease, says study

Research finds more than half of a group of men whose cancer was classified as slow-growing turned out to be more dangerous

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A surgeon sitting in front of screens of a Focal One device performs a robot-assisted prostate tumorectomy. Photograph: Jeff Pachoud/AFP/Getty Images

Men with prostate cancer are being given false hope by tests that underestimate the aggressiveness of their disease, according to a study.

Researchers found that more than half of a group of men whose cancers were initially classified as slow-growing and confined later turned out to have more dangerous tumours.

The findings, published in the British Journal of Cancer, call into question the ability of experts to grade and stage prostate cancers on the basis of biopsy samples.

It also casts doubt on the "active surveillance" strategy of avoiding unnecessary radical treatment for patients with slow-growing prostate cancer.

Instead, these patients are closely monitored but left alone until tests suggest their condition has worsened.

Urological surgeon Greg Shaw, from the Cancer Research UK Cambridge Institute, said: "Our results show that the severity of up to half of men's prostate cancers may be underestimated when relying on tests before they have surgery."

Slow-growing prostate cancers, known as "pussycats", are very different from the more aggressive "tiger" variety.

In some cases, especially when he is older when diagnosed, a patient can live to the end of his normal life span before a "pussycat" cancer becomes a threat.

An aggressive "tiger", on the other hand, may quickly spread if it is not surgically removed or destroyed.

Biopsy samples examined under a microscope are used to rate prostate tumour aggressiveness with a score ranging from two to 10. A score of between two and six is a low-grade "pussycat". A score of seven is intermediate, while scores of eight to 10 are high-grade "tigers".

Tumours are also staged according to how far they have spread. A T2 tumour is contained completely inside the prostate gland, while a T3 tumour has started to break out, and one classified T4 has spread to other organs or sites in the pelvic cavity.

The Cambridge scientists compared the staging and grading of more than 800 men's cancers before and after they had surgery to remove their prostate.

They found that of 415 patients whose cancer was classified as slow-growing and confined to the prostate, just over half (209) were found to have a more aggressive disease than originally thought when assessed after surgery.

Almost a third (131) had cancers that had spread beyond the prostate gland.

The Prostate Specific Antigen (PSA) blood marker test used to identify men who might have prostate cancer has long been known to be unreliable and prone to giving false readings.

Professor Malcolm Mason, Cancer Research UK's prostate cancer specialist, said: "At the moment the biopsy, MRI and PSA tests that we use to assess the severity of prostate cancers are the best methods we have but, as this study shows, they don't always get it right." Despite the limitations that this study shows, all evidence so far points to active surveillance being safe provided men are carefully selected. But we need better methods of assigning a grade and stage so that no man has to unnecessarily undergo treatment, while at the same time making sure we
detect and treat the cancers that really need it.'

Each year around 41,700 men in the UK are diagnosed with prostate cancer and 10,800 die from the disease.

The scientists concluded in their paper: "In counselling patients for AS (active surveillance), the surgeon should be explicit regarding uncertainty in predicting stage/grade despite apparent short-term safety.

"There is an urgent need for development of a means by which to exclude aggressive PC (prostate cancer) in patients wishing to undergo conservative treatment."

Dr Iain Frame, director of research at the charity Prostate Cancer UK, said: "Accurate prostate cancer diagnosis continues to be one of the biggest challenges facing the disease today.

"The results of this study highlight yet again that existing tests cannot provide a precise picture of the aggressiveness of a man's cancer, often leaving men and their doctors to make difficult decisions about treatment without all the facts.

"Prostate Cancer UK is committed to finding a better diagnostic option for the 40,000 men diagnosed with the disease every year through research.

"In the meantime, until the accuracy of tests improves, it is important that men have the opportunity to discuss the pros and cons of every treatment option available with their clinician, so that they can decide what is best for them and their situation."