On the path of better ways to treat prostate cancer

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Professor Gail Risbridger

(Medical Xpress)—Improved screening means doctors are more likely to detect prostate cancer in time to treat it, but knowing when that treatment will be necessary is still uncertain.

Prostate cancer develops in two distinct ways. In one form, it is a slow-growing cancer that affects one in nine men overall or one in five men aged 85 or older, and which can be treated if detected early. The other form looks just like its twin, but is aggressive, becomes resistant to treatment, spreads rapidly and eventually kills the patient.

Professor Mark Frydenberg, expert in urology in the Department of Surgery at Monash University, said the difference affected decisions about treatment.

"If you diagnose a man with what appears to be low-risk prostate cancer, how certain can we be that this is not going to progress and become life-threatening and how safe is it for us to just keep an eye on it rather than immediately treat it?" Professor Frydenberg said.

"If we operate on everybody, we're subjecting a lot of men to unnecessary side effects from surgery that they may not have needed."

A major clue in the quest to identify men at risk of progressing to advanced disease, and prevent that from occurring, has been found by the team of Professor Gail Risbridger, head of the Prostate Cancer Research Group at Monash.

Professor Risbridger has identified a subset of prostate cancer cells that are resistant to androgen deprivation treatment, used for advanced prostate cancer. These cells share many features with stem cells and may be present at early stages of the disease.

"This tells us the cells are plastic and can adapt and survive treatments such as castration or androgen withdrawal to regenerate a tumour," Professor Risbridger said of the discovery, published last year in the journal *Science Translational Medicine*.

"We already know a lethal sub-population of cells will kill a man when the disease is advanced. Now we can see cells with these features much earlier in men when the disease is still localised, so we have the opportunity to use this insight to understand how localised disease progresses to advanced disease."

While the existence of these cells might be seen as bad news, Professor Risbridger said that knowledge of them provided the opportunity to develop new treatments that would target them.

Provided by Monash University