Research points to new treatment for prostate condition

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An unexpected discovery by scientists at the University of York could potentially pave the way for new treatments for benign enlargement of the prostate, a condition which affects more than 200 million men worldwide.

Researchers at the YCR Cancer Research Unit in the Department of Biology at York and Hull York Medical School investigated an enzyme called telomerase in cells, from benign prostatic hyperplasia (or BPH).

By also measuring the lengths of the telomeres, which act as protective caps at the end of chromosomes, Dr Jayant Rane was then able to track the origins of the cells which cause BPH.

The research, which was funded by Prostate Cancer UK and is published online in *European Urology*, suggests that telomerase inhibitors could be used to alleviate BPH symptoms which principally affect men over the age of 50. The condition is characterized by uncontrolled, but non-invasive, growth of a variety of cell types in the prostate. Current treatments for BPH do not tackle this underlying cause.

The researchers, who included surgeons at Castle Hill Hospital in East Yorkshire, investigated the telomere biology of cell subpopulations from BPH patients to better understand the dynamics of tissue proliferation. All the patients were undergoing transurethral resection of prostate (TURP), a surgical procedure that involves cutting away a section of the prostate.

Now the research team say local inhibition of telomerase in BPH, using novel and specific telomerase inhibitors, could prove an alternative therapy for managing the condition, as it will restrict the proliferation the epithelial progenitors.

Professor Norman Maitland, Director the YCR Cancer Research Unit, said: "Our approach of breaking diseased tissues down into their component parts has revealed an unexpected and novel approach to BPH treatment –all based on the biology underpinning the disease."

Dr Matt Hobbs, Deputy Director of Research at Prostate Cancer UK, said: "Forty per cent of men in their 50s, and 75 per cent of men in their 70s, experience uncomfortable urinary symptoms caused by BPH, and treatment options are limited.

" This kind of work, that aims to look in detail at the basic biological processes controlling prostate cells, is the only way that we will be able to come up with completely new ways to treat this condition.

" We are pleased that work funded by Prostate Cancer UK has moved our understanding of this condition forward."

More information: "Telomerase Activity and Telomere Length in Human Benign Prostatic Hyperplasia Stem-like Cells and Their Progeny Implies the Existence of Distinct Basal and Luminal Cell Lineages." *European Urology*, October 2015 DOI: 10.1016/j.eururo.2015.09.039

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