East Lancashire Prostate Cancer Support Group Newsletter

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Molecular breakthrough could halt the spread of prostate cancer

What's Inside

Press release issued: 10 November 2014

Scientists believe a new treatment, shown to be effective in mice, could halt the growth of tumours in patients with prostate cancer.

Pioneering research, by academics at the Universities of Bristol, Nottingham and the University of the West of England (UWE Bristol), shows that a specific compound can inhibit the activity of a molecule which is key to how tumours form new blood vessels. The vessels are essential for the cancer cells to survive and multiply.

The findings, published today [10 November] in the journal Oncogene, show that targeting a molecule called SRPK1 could stop progression of prostate cancer.

SRPK1 plays a vital role in 'angiogenesis' - an essential process through which tumours are able to form blood vessels and obtain necessary nutrients to fuel their growth.

This process is mainly regulated by VEGF – vascular endothelial growth factor – which can activate or inhibit vessel formation depending on how the gene is controlled by a cellular process called 'alternative splicing'.

By analysing samples of human prostate cancer, researchers observed that SRPK1 increases as the cancer gets more aggresive.

Dr Sebastian Oltean, the study's co-author from the University of Bristol's School of Physiology and Pharmacology, said: "We reasoned that inhibition of SRPK1 activity could stop cancer progression. Indeed, we show in this paper that if we decrease SRPK1 levels in prostate cancer cells, or in tumours grafted into mice, we are able to switch VEGF splicing and therefore inhibit tumour vasculature and growth." Researchers showed that drugs known as SPHINX compounds, designed to inhibit specifically the activity of SRPK1, are able to decrease tumour growth in a mouse model of prostate cancer when given three times weekly by injections.

Professor David

Bates, co-author from the University of Nottingham's Division of Cancer and Stem Cells, said: "Our results point to a novel way of treating prostate cancer patients and may have wider implications to be used in several types of cancers."

Biotech company Exonate, a spin-out drug development company from the University of Nottingham, aims to develop SRPK1 inhibitors as treatments for diseases with abnormal vessel development such age-related macular degeneration and cancer.

This study has been funded by Prostate Cancer UK, the Biotechnology and Biological Sciences Research Council (BBSRC) and Richard Bright VEGF Research Trust.

Dr Matthew Hobbs, Deputy Director of Research at Prostate Cancer UK, said: "There's no denying that there are too few treatment options for the 40,000 men that face a diagnosis of prostate cancer every year in the UK – especially for those with advanced disease. Prostate cancer continues to kill over 10,000 men annually and there is an urgent need for new treatments if we are to significantly reduce this figure.

"Although it's early days, each finding like this represents a crucial block in building up our understanding of what can slow down and stop the progression of prostate cancer. This understanding will give us the foundations needed to develop new targeted treatments for those men in desperate need."

Paper

'Serine arginine protein kinase-1 (SRPK1) inhibition as a potential novel targeted therapeutic strategy in prostate cancer' by Athina Mavrou, Karen Brakspear, Maryam Hamdollah-Zadeh, Gopinath Damodaran, Roya Babaei-Jadidi, Jon Oxley, David A Gillatt, Michael R Ladomery, Steven J Harper, David O Bates and Sebastian Oltean in Oncogene

Next Meeting is the Christmas Bash come all and enjoy!

The Guy's from MoVember

(Before the Shearing)

The Doll's from MoVember

From Left to Right Hazel Goulding (Treasurer) Leon D Wright (IT Admin) Stuart Marshall (Secretary) Steve Laird (Vice Chairman) Dave Riley (Chairman)

Contact Information

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We are a group of local people who know about prostate cancer. We are a friendly organisation dedicated to offering support to men who have had or who are experiencing the effects of this potentially life threatening disease.

The East Lanc's Prostate Cancer Support Group offers a place for free exchange of information and help for local men and their supporters (family and friends) who may be affected by this increasingly common form of male cancer.

At each meeting we strive to be a happy, supportive and upbeat group of people; encouraging open discussion on what can be a very difficult and perhaps for some an embarrassing subject. We have lively, informative, interactive, sharing and above all supportive meetings.

Urological Cancers Presentation

14 October 2014

Specialist nurses from East Lancashire Hospitals NHS Trust (ELHT) are inviting Trust members to attend two events focusing on prostate and urological cancers.

More than 500 urological cancers were diagnosed by ELHT clinical staff last year including 247 prostate, 153 bladder and 99 kidney cancers, in addition to testicular and penile cancers.

The Prostate Cancer events are being held at Royal Blackburn Hospital on Friday 24 October and Burnley General Hospital on Friday 21 November. Both events begin at 2pm.

Leading the event will be Urology Nurse Specialist Deborah Dobson who will share – in plain, non-clinical language - the range of treatments for people with urological cancers, specifically prostate cancer.

"In the UK, about 1 in 8 men will get prostate cancer at some time in their lives," says Deborah Dobson. "Prostate cancer is the most common cancer in UK men where it is estimated over 250,000 men currently live with the disease."

To reserve your place at either event, please call: 01254 733521 or email: membership@elht.nhs.uk. The sessions are open to anyone, if you're not a member of the Trust and would like to attend, simply give us a call and sign up to become a member, its free!.

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Novel Molecular Imaging Drug Offers Better Detection of Prostate Cancer

November 11, 2014

Breakthrough Study Shows Potential of New Drug Used with Planar and SPECT Imaging

Reston, Va. (November 11, 2014) – A new study demonstrates the potential of a novel molecular imaging agent to detect and visualize early prostate cancer in soft tissue, lymph nodes and bone. The research, published in the November issue of *The Journal of Nuclear Medicine*, compares the biodistribution and tumor uptake kinetics of two Tc-99m labeled ligands, MIP-1404 and MIP-1405, used with SPECT and planar imaging.

Prostate cancer is the most commonly diagnosed non-skin cancer in the United States, and it is second only to lung cancer as the leading cause of cancer deaths in American men. An estimated 233,000 new cases of prostate cancer will be diagnosed in the United States in 2014, and an estimated 29,000 will die of the disease. More than 2 million men are currently living with prostate cancer in the United States.

In an investigational new drug study, using a cross-over design, researchers compared the pharmacokinetics, biodistribution, and tumor uptake of Tc-99m MIP-1404 and Tc-99m MIP-1405 in 6 healthy men and 6 men with radiographic evidence of metastatic prostate cancer. Whole body images were obtained at 10 minutes and at 1, 2, 4 and 24 hours. SPECT was performed between 3 and 4 hours after injection. Prior to the study, no single target-specific Tc-99m radiopharmaceutical could image prostate cancer in soft tissue, lymph nodes and bone (bone metastasis) based on planar and SPECT. There was no uptake in degenerative bone disease, which often confounds bone scans.

"This research represents an innovative prostate cancer planar and SPECT imaging technology—addressing unmet clinical need for sensitive and selective imaging of loco-regional and distant metastatic prostate cancer," stated Shankar Vallabhajosula, PhD, lead author of the study "^{99m}Tc-Labeled Small Molecule Inhibitors of Prostate Specific Membrane Antigen: Pharmacokinetics and Biodistribution Studies in Healthy Subjects and Patients with Metastatic Prostate Cancer."'With respect to imaging, the lack of focal uptake in the normal prostate of healthy volunteers with both compounds further demonstrated that PSMA is a viable targeting mechanism for detection and visualization of prostate cancer and suggests that this imaging approach is highly sensitive and disease specific."

There was good correlation with bone scans in most subjects, although in general, more lesions were visualized with MIP-1404 and MIP-1405 than with bone scans, suggesting this agent may be more sensitive to detecting skeletal or marrow invasion earlier than bone scans. "We also demonstrated that Tc-99m MIP-1404 has favourable pharmacokinetics and biodistribution, which represents a breakthrough in imaging of prostate cancer for the following reasons: Tc-99m MIP-1404 can image prostate cancer in lymph nodes, soft tissue and bone," noted Vallabhajosula.

A multi-center phase II study with Tc-99m MIP-1404 in 100 patients was recently completed, and the data were presented at 2014 SNMMI Annual Meeting in St. Louis, Mo. Progenics Pharmaceuticals has plans to conduct a phase III trial soon.

Authors of the article "^{99m}Tc-Labeled Small Molecule Inhibitors of Prostate Specific Membrane Antigen: Pharmacokinetics and Biodistribution Studies in Healthy Subjects and Patients with Metastatic Prostate Cancer" include Shankar Vallabhajosula, Anastasia Nikolopoulou, Joseph Osborne, Scott T. Tagawa, Irina Lipai, Lilja Solnes, and Stanley Goldsmith, New York Presbyterian Hospital and Weill Cornell Medical College, New York, N.Y.; John Babich, Kevin P. Maresca, Thomas Armor, John Joyal, and Robert Crummet, Molecular Insight Pharmaceuticals, Inc., Cambridge, Mass.; and James B. Stubbs, Radiation Dosimetry Systems, Inc., Alpharetta, Ga.

Please visit the SNMMI Media Center to view the PDF of the study, including images, and more information about molecular imaging and personalized medicine. To schedule an interview with the researchers, please contact Kimberly Brown at (703) 652-6773 or kbrown@snmmi.org. Current and past issues of The Journal of Nuclear Medicine *can be found online at http://jnm.snmjournals.org.*