

East Lancashire Prostate Cancer Support Group Newsletter



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Cancer-sniffing Dogs May Help Train Robot Noses to Detect Tumors Early

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Don't Forget to RSVP Dave to Confirm Your Attendance @ the 10th Anniversary Party.

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Understanding the molecular components of odors used by trained dogs to detect [prostate cancer](#) could help researchers to develop computers with similar diagnostic accuracy, a new study shows.

The study, "[Feasibility of integrating canine olfaction with chemical and microbial profiling of urine to detect lethal prostate cancer](#)," was published in *PLOS One*.

An ongoing need in prostate cancer care is for more accurate non-invasive tests to detect the cancer, and to distinguish between potentially deadly tumors and benign growths.

Currently, the most common approach is to measure levels of the prostate specific antigen (PSA) protein in the blood. However, PSA testing is liable to miss some tumors, while flagging those that are unlikely to be harmful.

In recent decades, various studies have shown that dogs can be trained to [detect some human diseases by smell](#), including prostate cancer (by smelling urine). However, using trained canines as a diagnostic test isn't feasible on a large scale, leading to the question of whether cancer-smelling tech-

nology could be used instead. In the new study, an international team of researchers performed a series of proof-of-concept experiments to show how this might be done. They used urine samples collected from men with biopsy-proven prostate cancer, or no cancer (controls).

Of note, all of the cancer samples used were from individuals with Gleason 9 prostate cancer (the most lethal grade of prostate tumors), while the controls were by definition taken from those who had undergone prostate

biopsy, typically due to PSA or other testing that indicated potential prostate disease.

First, two dogs — named Midas and Florin — were trained to detect prostate cancer from urine samples, then were tested on their ability to do so. Both canines correctly identified five out of seven prostate cancer samples. Florin correctly identified 16 of 21 control samples as negative for prostate cancer, while Midas correctly identified 14 out of 20 negative samples.

“Specialist-trained cancer detection dogs, Florin and Midas, detected extremely aggressive prostate cancers quickly and accurately from urine samples, even discriminating these against urine from patients that had other diseases of the prostate,” study co-author Claire Guest, co-founder and chief scientific officer of Medical Detection Dogs, said in a [press release](#).

The researchers then used a technique called gas chromatography-mass spectrometry to analyze volatile organic compounds (VOCs) in some of the urine samples. Conceptually, VOCs are “smelly” molecules that can easily move through the air to be picked up by a sensor, whether that sensor is a machine or a dog’s nose.

The researchers also used a genetic technique called 16S rDNA sequencing to analyze the bacteria found in the different urine samples.

In preliminary analyses, the researchers noted several general differences between the VOC and bacterial profiles of cancer or control urine samples.

Then, the researchers used the VOC data, combined with the dogs’ identification of the various samples, to train an artificial neural network (ANN). As the name suggests, an ANN is a type of machine learning algorithm that is designed to somewhat mimic an organic brain.

In essence, the researchers fed into a computer the VOC data for urine samples, as well as whether the sample was detected as cancer by Florin and/or Midas. Then, the ANN looked for patterns in the VOC data that would allow it to make the same calls as the dogs.

In other words, the computer program looked for the particular components of the urine samples that the dogs were smelling to make their diagnosis. Two different computational techniques (skeletonization and auto-associative filtering) yielded generally consistent results in this analysis.

“Although tested on a small sample set which does not enable us to make definitive conclusions about accuracy, the results achieved in this pilot support the potential of specialist trained detection dogs directly assisting in the development of an ANN to run on a bio-electronic machine olfaction [smell-based] diagnostic device,” the researchers concluded.

They added that their results “pave the way towards development of machine-based olfactory diagnostic tools that define and recapitulate what can be detected and accomplished now via canine olfaction.”

Study co-author Jonathan W. Simons, MD, president and CEO at the [Prostate Cancer Foundation](#), said: “With compelling evidence of this approach, we are planning larger-scale studies using canine olfaction, urinary VOCs and urinary microbiota profiling to develop a machine olfaction diagnostic tool, a ‘robotic nose’ if you will, that may ultimately take the form of a smartphone app of the future.”

Astra Reports Positive Lynparza Results for Prostate Cancer

By Suzi Ring

September 24, 2021, 9:29 AM GMT+

AstraZeneca Plc reported positive high-level results for use of its blockbuster drug Lynparza to treat prostate cancer, continuing a strong run for the pharmaceutical company in its oncology portfolio.

An advanced-stage trial found that combining Lynparza with the hormonal agent abiraterone improved progression-free survival for men with metastatic castration-resistant prostate cancer who'd received no previous treatment, Astra said in a statement Friday. The data also indicated overall survival may be improved, but more analysis is needed.

With about 30,000 to 50,000 prostate cancer patients in the U.S. eligible for the first-line therapy every year, the results could add sales of between \$3 billion and \$5 billion, according to Jeffries analysts, assuming a treatment period of 18 months. However, this is theoretical and more data are needed to determine penetration, duration of use, and patient subgroups with most benefit, the analysts said.

“Today, men with metastatic castration-resistant prostate cancer have limited options in the 1st-line setting, and sadly often the disease progresses after initial treatment with current standards of care,” Susan Galbraith, Astra’s head of oncology research and development, said in the statement. The drug combination could “reach a broad population of patients living with this aggressive disease.

The results continue a strong run for Astra in its oncology portfolio after the company increased its assets in recent years. Astra’s breast cancer drug Enhertu demonstrated earlier this month that it has a significant edge over Roche Holding AG’s Kadcyla in keeping patients alive without their tumors worsening.



Have you experienced prostate cancer?

We are looking for people who are over 18 to take part in a short online survey which will take approximately 20-30 minutes to complete. The survey is completely confidential and does not require you to disclose any identifiable information.

Why take part?

People who experience prostate cancer can unexpectedly be faced with long-term health-related and psychological consequences, which can impact on quality of life. We hope to raise awareness and understanding of the psychological needs of people in the UK who have experience of prostate cancer. Doing so can help us to identify ways to reduce the impact of the long-term consequences of prostate cancer on everyday life and wellbeing.

Can I take part?

You can take part if you are:

1. Over the age of 18
2. Have previously had a diagnosis of prostate cancer
3. The time since diagnosis is 12 months or more

How to take part?

If you are interested in taking part in the research you can follow the link: <https://leeds.onlinesurveys.ac.uk/exploring-the-long-term-psychological-needs-of-men-with-pr> or scan the QR code below which will both take you to the online survey. You will be presented with an information sheet which will provide you with more information about the study.



Who has reviewed this study?

This study has been reviewed by the School of Medicine Research Ethics Committee, University of Leeds (MREC 20-046).

At the end of the survey, as a thank you for completing it, you will be given the option to enter into a prize draw for the chance to win a £30 Amazon voucher.

If you require any further information or have any questions you can contact Jennifer Kirby via email: umjlk@leeds.ac.uk . Thank you for taking time to read this.

Shorter course of radiotherapy safely delivers treatment for prostate cancer

Advanced radiotherapy technology can safely deliver curative treatment for prostate cancer patients in as few as five sessions, with only minimal side effects, according to new research.

This is the first global randomised trial of its kind to compare the long-term toxicity outcomes for prostate cancer patients receiving stereotactic body radiotherapy (SBRT) to those receiving standard radiotherapy treatment. The research was presented at the [European Society for Radiotherapy and Oncology \(ESTRO\) Congress](#) over the weekend.

Minor side effects

The PACE-B trial - taking place at The Institute of Cancer Research, London and The [Royal Marsden NHS Foundation Trust](#), compared the long-term bowel and bladder side effects for patients receiving stereotactic body radiotherapy (SBRT) to those receiving standard radiotherapy treatment.

Researchers found that, two years after treatment, nearly 90% of all patients on the trial experienced only minor side effects. 99% were free of severe side effects, suggesting that shortened treatment can be given without the risk of long-term higher toxicity.

SBRT, which can be delivered on a CyberKnife or standard radiotherapy machines, allows clinicians to target tumours to sub-millimetre precision. It delivers five high doses of radiation to patients over one to two weeks, compared to standard radiotherapy (Intensity-modulated radiation therapy, or IMRT), which delivers more moderate doses over a much longer period of time - usually around 20 sessions, which can take up to one month.

Potentially curative treatment

874 patients with prostate cancer were randomised to two groups. 441 patients were allocated the current standard of care, receiving standard radiotherapy for either 39 doses over seven or eight weeks, or 20 doses over four weeks. 433 patients were allocated SBRT, receiving five doses of treatment over one or two weeks. For both groups of patients, 90 per cent of whom had intermediate risk prostate cancer, this was intended to be curative with no further treatment planned.

Patients, recruited from 37 centres across the UK, Ireland and Canada were assessed for side effects every three months for the first two years, incorporating both assessments by clinicians and questionnaires that were completed by patients. Researchers found that patients in both

groups had similar levels of side effects two years after treatment, which were very low overall.

There were no differences between the two groups with regards to bowel and rectal side effects but a small difference with urinary toxicity. Results suggested that about one in 9 men receiving the SBRT radiotherapy over five sessions will get a moderate bladder side effect two years after treatment, compared to about 1 in 17 men receiving standard radiotherapy. Bladder side effects experienced by patients included urinary frequency and urgency.

Smarter, better, kinder treatments

Chief Investigator Dr Nicholas van As is Medical Director and Consultant Clinical Oncologist at The Royal Marsden NHS Foundation Trust, and Reader in Precision Prostate Radiotherapy The Institute of Cancer Research, London.

He said: “At The Royal Marsden and the ICR, we are focused on developing smarter, better and kinder treatments for patients across the UK and internationally. Developments in radiotherapy, such as SBRT, mean we can target tumours much more effectively.

“It is reassuring to see from this trial that SBRT does not significantly impact patients’ quality of life, compared with the current standard of care. Using SBRT to deliver this treatment would mean that patients could be spared numerous visits to hospital, allowing them to get back to their lives sooner.”

Dr Alison Tree, Consultant Clinical Oncologist at The Royal Marsden NHS Foundation Trust, and leader of the Uro-oncology Clinical Trials team at The Institute of Cancer Research, London, who presented the data at ESTRO, said:

“Our aim was to understand whether we could safely increase the dose of targeted radiation per day, allowing us to reduce number of treatments required. We wanted to measure whether this could be done without changing the low level of side effects we see with modern prostate radiotherapy.

“When treating patients, we have to consider whether the higher doses in a shorter time period is the best option; the potential side effects are a critical factor in making this decision.

“This data has shown very promising results that suggest potentially curative prostate radiotherapy can be given with very few side effects for patients with stereotactic body radiotherapy over five days.”

Potentially practice-changing

Professor Emma Hall, Deputy Director of the Clinical Trials and Statistics Unit at The Institute of Cancer Research, London, that co-ordinated the study, said:

“Now we know that longer-term side effects of SBRT are similar to those with standard radiother-

apy. If we can also show that cancer control is no worse, then we expect our trial to be practice-changing”

Colin, 74, from Surrey, was diagnosed with prostate cancer in March this year and received treatment through the PACE trial at The Royal Marsden. He was randomised into the group to receive SBRT and after just five treatment sessions on the CyberKnife, has been assured that his disease has been successfully eradicated.

Colin said: “My diagnosis was quite a shock and being told you need to have radiotherapy treatment is quite nerve-wracking, especially when you’re reading about all the different side effects that could happen. I feel really lucky to have had treatment which was over so quickly; it hasn’t disrupted my quality of life, routine or really stopped me working at all.

“I have suffered no side effects and I feel absolutely brilliant to be told such good news about the treatment outcomes, which coincided with my 50th wedding anniversary –it was a double celebration that weekend!

“I was happy to pioneer and help by going onto this clinical trial and hope that it will benefit more patients like me. The Royal Marsden team are my guardian angels. I can’t thank them enough for what they have done for me.”

Tumor-related risk factors affect conversion of active surveillance to treatment for prostate cancer

Reviewed by [Emily Henderson, B.Sc.](#) Sep 10 2021

For men with "low-risk" prostate cancer initially managed with active surveillance, cancer-related factors such as tumor grade and size are key risk factors for conversion to active treatment, reports a study in *The Journal of Urology*[®], an Official Journal of the American Urological Association (AUA). The journal is published in the Lippincott portfolio by Wolters Kluwer.

Black men on active surveillance may not have shorter times to definitive treatment as previously reported from studies using Veterans Health Administration data.

Our study is the largest to assess the time to conversion from active surveillance to treatment for

Dr. Catalona and colleagues analyzed data on 6,775 patients with prostate cancer managed with active surveillance at 28 medical centers in a National Cancer Institute-sponsored Prostate SPORE (Specialized Program of Research Excellence) project (P50CA180995) study. Sixty-eight percent of the men were classified as having low-risk disease, based on factors including the Gleason grade, which assess the aggressiveness of cancer cell behavior; tumor stage, which reflects how far the cancer has spread; and the number of positive biopsy specimens (cores).

Related Stories

[Restoring beneficial gut microbes to enhance the efficacy of cancer immunotherapy](#)

[AI can spot signs of lung cancer on CT scans a year earlier](#)

[New tool can rapidly quantify T cell fraction and predict immunotherapy response](#)

At a median follow-up time of 6.7 years, one-third of men had converted to active treatment. After adjustment for other factors, six cancer-related or clinical factors were independently related to shorter conversion times: higher Gleason grade, higher PSA level, higher tumor stage, and higher number of positive biopsy cores, more recent year of diagnosis, and younger age, confirming and expanding previous reports.

A preliminary analysis suggested that patients with high-volume, low Gleason grade tumors behaved more like high-risk patients than like low- or intermediate-risk patients, and the time to conversion was unrelated to the patients' self-reported race/ethnicity or to DNA markers of genetic ancestry. That's in contrast to some previous studies suggesting that Black men have more biologically aggressive prostate cancer and "may be managed with active surveillance less frequently in clinical practice," according to the authors. These preliminary findings and the association with the more recent year of diagnosis – reflecting recent, more liberal criteria for surveillance – are novel and require confirmation in other studies.

"Our study suggests that how long patients remain on active surveillance is affected mainly by higher-risk tumor factors," Dr. Catalona adds. "The findings will be helpful to physicians and patients as they discuss and make decisions about treatment options for low-risk prostate cancer."

Source:

[Wolters Kluwer Health](#)

Journal reference:

Cooley, L.F., *et al.* (2021) Factors Associated with Time to Conversion from Active Surveillance to Treatment for Prostate Cancer in a Multi-Institutional Cohort. *The Journal of Urology*. doi.org/10.1097/JU.0000000000001937.



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

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.

prostate cancer and provides new data on factors affecting the outcomes of this increasingly used management strategy."

William J. Catalona, MD, Northwestern University Feinberg School of Medicine, Chicago

Findings may help predict outcomes of active surveillance

Active surveillance is used to monitor slow-growing, low-risk or localized prostate cancer rather than treating it straight away. It typically involves regular prostate-specific antigen (PSA) screenings, prostate exams, imaging studies, and repeat biopsies to carefully monitor prostate cancer misclassification, growth, or progression without compromising long-term outcomes. The aim of active surveillance is to avoid or delay unnecessary treatment and its side effects.

Active surveillance is increasingly viewed as the preferred approach for management of lower-risk prostate cancer. However, there is limited information on how long patients remain on active surveillance before converting to active or definitive treatment, such as surgery or radiation therapy.

“10th Anniversary” Event

Hi all, well another 12 months has nearly passed since the cancellation of our prestigious 10th anniversary last November 2020 due to Covid-19 restrictions coming in force .

We are now looking to take names for this forthcoming **“FREE”** event , with the venue still being at the Kettle drum Inn Red Lees road Cliviger Burnley on Thursday 4th. November 2-4pm.

If you (and partner) would like to join us please be good enough to email me at riley.d7@sky.com with your name and confirm how many will be attending.

Looking forward to seeing you soon

WOULD YOU PLEASE BE GOOD ENOUGH TO R.S.V.P YOUR INTENTIONS AS SOON AS POSSIBLE so that we can make the necessary arrangements .

Kind regards Dave R

Prostate Exam

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By Dan Gibson



Herb's Doctor has a knack for making prostate exams pleasant and fun.