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Prostate cancer screening trial using imaging

Submission date 29/09/2018	**Recruitment status** No longer recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 08/10/2018	**Overall study status** Completed	
Last Edited 12/02/2021	**Condition category** Cancer	

Plain English summary of protocol

Background and study aims
Prostate cancer is the most common male cancer and 1-in-23 men will die from the disease. In recent years, prostate cancer deaths have overtaken those from breast cancer. The PROSTAGRAM trial is designed to look at new imaging techniques to screen for aggressive prostate cancer. The aim is to find an imaging technique, like mammograms for breast cancer, which can be used to screen for prostate cancer.

Who can participate?
Men aged between 50 and 69 years who are able to an MRI and ultrasound examination of the prostate

What does the study involve?
Men who agree to participate in the PROSTAGRAM study will attend a screening clinic and complete all tests during a single visit. This will include
1. A fast MRI. This uses magnetic pulses, which can take detailed pictures of the prostate. It does not use radiation.
2. Prostate ultrasound. This measures the stiffness of the prostate and is more cost effective than a MRI scanner
3. A PSA test which is the current standard test. This will be used so that we can compare the new tests against the existing tests
If any of these tests are positive, a prostate biopsy will be performed in a separate visit.

What are the possible benefits and risks of participating?
There is no guarantee that taking part in this study will benefit participants personally. The possible benefits include that participants may have prostate cancer picked up more quickly than it would have been if they were not taking part in the study. This could mean that the cancer is more treatable and the chance of surviving is better. However, participants will also be providing important information to help find out if these imaging tests work well.
The risks of taking part include that some men and their families may get very anxious and worried while they are waiting for their tests results. Also, we might find slow-growing or non-aggressive cancers that might not cause any symptoms or problems in your lifetime. Alternatively the tests can sometimes be positive in men who do not have aggressive prostate

cancer. Finally, like all medicines, the medications used during the MRI scan can sometimes cause side effects. These include blurred vision, dry mouth, dizziness, increased heart rate, constipation and pain at the injection site.

Where is the study run from?
The study is run from Imperial College London, UK and the screening clinic will take place at Hammersmith Hospital, Imperial NHS Healthcare Trust, UK

When is the study starting and how long is it expected to run for?
September 2017 to December 2020

Who is funding the study? (who will be paying the costs that the trial will incur during its lifecycle?)
1. Wellcome Trust Senior Clinical Research Fellowship (UK)
2. The Urology Foundation (UK)
3. British Medical Association Foundation for Medical Research (UK)

Who is the main contact?
Mr D Eldred-Evans
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Study website
http://imperialprostate.org.uk/prostagram/

Contact information

Type(s)
Public

Contact name
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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

NCT03702439

Secondary identifying numbers
18HH4595

Study information

Scientific Title
PROstate cancer Screening Trial using A Group of Radiological Approaches including MRI and ultrasound

Acronym
PROSTAGRAM

Study objectives
1. Biparametric MRI and/or prostate ultrasound have acceptable positive test rates and balance the detecting clinically significant and insignificant prostate cancers to justify evaluation as screening tests.
2. Biparametric MRI and/or prostate ultrasound are acceptable screening tests to men aged 50 to 69 years in the general population

Ethics approval required
Old ethics approval format

Ethics approval(s)
National Research Ethics Service Committee London - Camberwell St Giles, 10/09/2018, ref: 18/LO/1338

Study design
Observational cross-sectional study

Primary study design
Observational

Secondary study design
Cross sectional study

Study setting(s)
Community

Study type(s)
Screening

Participant information sheet
Not available in web format, please use contact details to request a participant information sheet

Health condition(s) or problem(s) studied
Prostate cancer

Interventions
Participants will be recruited from the community and attend a screening clinic (visit 1) where they will undergo the following screening tests:
1. Bi-parametric MRI, reported by a radiologist and CAD-AI system
2. Multiparametric ultrasound, including shearwave elastography
A systematic +/- targeted biopsy will be performed if any tests are positive (visit 2), independent of the other tests. At visit 3, participants will be informed of their test results and follow standard of care treatment according to the outcomes of their test.
There will be a 3 month follow-up period.

Intervention Type
Other

Primary outcome measure
The proportion of men with a positive MRI defined by a Likert or PI-RADS (Prostate Imaging Reporting and Data System) score of 3 or greater on MRI report

Secondary outcome measures
1. The proportion of men with screen-positive prostate ultrasound defined by a score of 3 or greater, assessed at visit 1
2. The proportion of participants within each MRI score or US score of 1, 2, 3, 4 or 5, assessed at visit 1
3. An evaluation of proportion of participants across each MRI and US score with no cancer, insignificant cancer and significant cancer with each test, assessed at visit 2
4. A comparison of the proportion of participants with a positive result for each screening test. A comparison of the proportion of men subsequently diagnosed with a clinically significant prostate cancer as defined by pre-specified histological definitions, assessed at visit 2
5. Comparison of different testing combinations in terms of biopsy rates, detection of insignificant cancer and significant cancers, assessed at visit 2
6. The correlation between imaging findings and digital rectal exam (DRE), assessed at visit 1 to compare the difference in cancer detection of US, MRI and DRE
7. The proportion of men who go onto definitive local or systemic treatment (in men who undergo radical prostatectomy the proportion who are upgraded at final histology). This will be assessed at visit 3 by the treatment decision on men diagnosed with prostate cancer.
8. The proportion of participants within a positive Episwitch biomarker panel and distribution of score, assessed at visit 1
9. Feasibility, measured based on a point-estimate of recruitment rates across different recruitment strategies, assessed at visit 1
10. Eligibility, assessed against pre-defined eligibility criteria with reasons for ineligibility recorded and compared across each screening test, assessed at visit 1
11. Retention and compliance rate, defined as the number of participants completing screening tests and any follow-up biopsy recommendation. The reasons for withdrawal will be documented with an optional survey offered to individuals. This will be assessed at visit 3
12. Individual costs for recruitment and screening, recorded in a resource utilisation log. These will be scaled up to provide an estimate of the cost for the subsequent study. This will be assessed at visit 3
13. Sensitivity analysis of the CAD/AI system, with histology and/or radiologist consensus as the reference standard, assessed at visit 2
14. Comparison of radiologist diagnostic performance for detection of clinically significant cancer with and without the CAD/AI, assessed at visit 1
15. Interobserver agreement with and without the use of CAD/AI as second reader, assessed at

visit 1
16. Receiver operating characteristic (ROC) to compare the diagnostic performance of CAD/AI at different MAI scores, assessed at visit 1
17. Changes in Health-related quality of life (HRQOL), assessed using the 12item ShortForm Health Survey (SF-12) at the baseline and follow-up at visit 1
18. Changes in worry and anxiety scores, assessed at visit 3 using:
18.1. Cancer Worry Scale (CWS)
18.2. State-Trait Anxiety Inventory (STAI)
19. Rates of biopsy related adverse events (infectious complications, urinary retention, haematuria requiring admission), assessed at visit 2

Overall study start date
05/09/2017

Completion date
02/09/2019

Eligibility

Key inclusion criteria
1. Male
2. Aged 50-69 years
3. Fit to undergo all procedures listed in the protocol
4. Estimated life expectancy of 10 years or more
5. Understanding of the English language sufficient to understand written and verbal information about the trial and consent process
6. Willing and able to provide written informed consent

Participant type(s)
Healthy volunteer

Age group
Adult

Sex
Male

Target number of participants
364

Total final enrolment
408

Key exclusion criteria
1. Previous PSA test or prostate MRI within the prior two years of screening/consent visit
2. Evidence of a urinary tract infection or history of acute prostatitis within the last 6 months
3. Previous history of prostate cancer, prostate biopsy or treatment for prostate cancer (interventions for benign prostatic hyperplasia/bladder outflow obstruction is acceptable)
4. Any potential contraindication to MRI, including but not limited to:
4.1. Devices or metallic foreign bodies such as pacemakers, implantable defibrillators,

neurostimulators, cochlear implants, coronary stents, prosthetic heart valves, aneurysm clips and other intravascular devices
4.2. Previous history of hip replacement surgery, metallic hip replacement or extensive pelvic orthopaedic metal
4.3. Claustrophobia
5. Any potential contraindication to prostate biopsy
6. Dementia or altered mental status that would prohibit the understanding or rendering of informed consent
7. Any other medical condition precluding procedures described in the protocol

Date of first enrolment
10/10/2018

Date of final enrolment
15/05/2019

Locations

Countries of recruitment
England

United Kingdom

Study participating centre
Imperial College Healthcare NHS Trust
Fulham Palace Road
London
United Kingdom
W6 8RF

Sponsor information

Organisation
Imperial College London

Sponsor details
Joint Research Compliance Office
St Marys Campus
London
England
United Kingdom
W2 1PG

Sponsor type
University/education

ROR
https://ror.org/041kmwe10

Funder(s)

Funder type
Charity

Funder Name
Wellcome Trust

Alternative Name(s)

Funding Body Type
Private sector organisation

Funding Body Subtype
International organizations

Location
United Kingdom

Funder Name
British Medical Association

Alternative Name(s)
BMA

Funding Body Type
Private sector organisation

Funding Body Subtype
Associations and societies (private and public)

Location
United Kingdom

Funder Name
Urology Foundation

Alternative Name(s)
TUF

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
United Kingdom

Results and Publications

Publication and dissemination plan
The results will be disseminated at clinical meetings and by publications in peer-reviewed journals. The primary and secondary outcomes may be published separately.

Intention to publish date
10/10/2021

Individual participant data (IPD) sharing plan
The data sharing plans for the current study are unknown and will be made available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/03/2021	12/02/2021	Yes	No
HRA research summary			28/06/2023	No	No