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Validating predictive models and biomarkers of radiotherapy toxicity to reduce side effects and improve quality of life in cancer survivors

Submission date
04/03/2014

Recruitment status
No longer recruiting

Registration date
19/03/2014

Overall study status
Completed

Last Edited
05/03/2020

Condition category
Cancer

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol
http://www.cancerresearchuk.org/about-cancer/trials/a-study-looking-at-who-is-more-likely-to-have-radiotherapy-side-effects-requite

Contact information

Type(s)
Scientific

Contact name
Prof Catharine West

ORCID ID
https://orcid.org/0000-0002-0839-3449

Contact details
Radiotherapy Related Research
University of Manchester
Christie Hospital
Wilmslow Road
Manchester
United Kingdom
M20 4BX
0161 446 8275
catharine.west@manchester.ac.uk

Additional identifiers

Protocol serial number
601826

Study information

Scientific Title
Validating predictive models and biomarkers of radiotherapy toxicity to reduce side effects and improve quality of life in cancer survivors: a prospective observational cohort study

Acronym
REQUITE

Study objectives
Primary objective: To establish a prospective cohort of patients undergoing radiotherapy for breast, prostate or lung cancer following local regimens and collecting standardised radiotherapy toxicity data, non-genetic risk factor data and samples for biomarker assays for the study of determinants of radiotherapy side-effects.

Secondary objective: To establish a comprehensive centralised database and sample collection as a resource for the prospective evaluation and validation of clinical models incorporating biomarker data to identify before treatment those cancer patients who are at risk of developing long-term side effects from radiotherapy.

Ethics approval required
Old ethics approval format

Ethics approval(s)
UK ethics approval obtained from North West - GM East REC, ref: 14 NW 0035

Study design
Prospective observational cohort study

Primary study design
Observational

Study type(s)
Quality of life

Health condition(s) or problem(s) studied
Breast cancer, prostate cancer, lung cancer

Interventions
A pre-treatment blood sample will be collected from every patient at a single time point for downstream analyses. This sample comprises:
Sample A: a whole blood EDTA sample for DNA extraction
and either
Sample B: a whole blood PAXgene sample for RNA extraction
or
Sample C: a whole blood Lithium Heparin sample for the apoptosis assay.

Toxicity will be assessed and documented using REQUITE toxicity questionnaires based on the Common Terminology Criteria for Adverse Events (CTCAE) v4.0 and EORTC Quality of Life. At some sites additional questionnaires will also be used: Multiple Fatigue Inventory (MFI) and the

General Practice Assessment
Questionnaire (GPAQ). Questionnaires will be completed at the following time points:
1. Baseline assessed prior to radiotherapy (all)
2. End of radiotherapy (breast and prostate); or first follow-up visit following implantation for prostate brachytherapy patients
3. 3 months from start of radiotherapy (lung)
4. 6 months from start of radiotherapy (lung)
5. 12 months from start of radiotherapy (all)
6. 24 months from start of radiotherapy (all)

The follow-up period can be extended beyond 24 months. Further follow-up will be permissible and encouraged where possible as part of routine clinical care.

Intervention Type
Other

Phase
Not Applicable

Primary outcome(s)
1. Change in breast appearance at 24 months following start of radiotherapy (breast) measured by digital photograph
2. Rectal bleeding at 24 months following start of radiotherapy (prostate) measured by patient-reported outcome toxicity questionnaires
3. Dyspnea/breathlessness at 12 months following start of radiotherapy (lung) measured by patient-reported outcome toxicity questionnaires

Key secondary outcome(s))
1. Other toxicity endpoints including but not limited to: fibrosis, induration and vascular changes (breast); rectal incontinence, urinary toxicity and erectile dysfunction (prostate); dysphagia and oesophagitis (lung)
2. Quality of life
3. Maximum grade of toxicity during follow-up period

Toxicity will be assessed and documented using REQUITE toxicity questionnaires based on the CTCAE v4.0 and EORTC Quality of Life at the following time points.
1. Baseline assessed prior to radiotherapy (all)
2. End of radiotherapy (breast and prostate); or first follow-up visit following implantation for prostate brachytherapy patients
3. 3 months from start of radiotherapy (lung)
4. 6 months from start of radiotherapy (lung)
5. 12 months from start of radiotherapy (all)
6. 24 months from start of radiotherapy (all)

Completion date
31/03/2019

Eligibility

Key inclusion criteria

1. Patients suitable for adjuvant radiotherapy* for cancer of the breast (invasive or in situ) including breast patients receiving neo-adjuvant chemotherapy
2. Patients suitable for radical radiotherapy or brachytherapy for prostate cancer; including post-prostatectomy patients
3. Patients suitable for radical radiotherapy, sequential or concurrent chemoradiotherapy or stereotactic body radiation therapy for lung cancer
4. No other malignancy prior to treatment for the specified tumour types except basal cell or squamous cell carcinoma of the skin
5. No evidence of distant metastases
6. Patients able to provide a venous blood sample
7. Willingness and ability to comply with scheduled visits, treatment plans and available for follow-up within country of origin
8. Greater than 18 years of age; no upper age limit
9. The capacity to understand the patient information sheet and the ability to provide written informed consent

*Breast patients receiving chemotherapy should have completed their course of chemotherapy (anthracyclines) at least one month prior to radiotherapy commencing.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Total final enrolment
4439

Key exclusion criteria
1. Patients with metastatic disease
2. Prior irradiation at the same site
3. Planned use of protons
4. Breast patients receiving concomitant chemo-radiation
5. Male breast cancer patients
6. Mastectomy patients
7. Bilateral breast cancer
8. Small cell lung cancer
9. Mental disability or patient otherwise unable to give informed consent and/or complete patient questionnaires
10. Limited life expectancy due to co-morbidity
11. Pregnant patients
12. Partial breast irradiation

13. Patients with breast implants if not removed during surgery
14. Patients with known HIV infection/infectious hepatitis

Date of first enrolment
01/04/2014

Date of final enrolment
31/03/2018

Locations

Countries of recruitment
United Kingdom

England

Belgium

France

Germany

Italy

Netherlands

Spain

United States of America

Study participating centre
Radiotherapy Related Research
Manchester
United Kingdom
M20 4BX

Study participating centre
Centre d'imagerie de l'ICM Val d'Aurelle - Groupe CRP
Institut du Cancer
31 rue Croix Verte
Montpellier
France
34000

Study participating centre

MAASTRO clinic
Doctor Tanslaan 12
Maastricht
Netherlands
6229 ET

Study participating centre
Icahn School of Medicine at Mount Sinai
1 Gustave L. Levy Place
New York
United States of America
10029

Study participating centre
The Christie NHS Foundation Trust
Wilmslow Road
Manchester
United Kingdom
M20 4BX

Study participating centre
Fundación Publica Galega Medicina Xenomica
CHUS Edif Consultas, floor -2
Choupana s/n
Santiago de Compostela
Spain
15706

Study participating centre
Fondazione IRCCS Istituto Nazionale dei Tumori
Via Giacomo Venezian, 1
Milan
Italy
20133

Study participating centre
University Hospital Leuven
Herestraat 49
Leuven
Belgium
3000

Study participating centre
Universitair Ziekenhuis Gent
Corneel Heymanslaan 10
Ghent
Belgium
9000

Study participating centre
Universitaet Mannheim
Mannheim
Germany
68131

Study participating centre
Fundació Privada Institut d'Investigació Oncológica Vall d'Hebron
Centro Cellex
Calle Natzaret
115-117
Barcelona
Spain
08035

Study participating centre
University Hospitals of Leicester
Infirmary Square
Leicester
United Kingdom
LE1 5WW

Study participating centre
Städtisches Klinikum Karlsruhe
Moltkestraße 90
Karlsruhe
Germany
76133

Study participating centre

St. Vincentius-Kliniken gAG Karlsruhe
Steinhäuserstraße 18
Karlsruhe
Germany
76137

Study participating centre
Klinikum der Stadt Ludwigshafen GmbH
Bremserstraße 79
Ludwigshafen am Rhein
Germany
67063

Study participating centre
Praxis Strahlentherapie
Paul-Egell-Straße 31
Speyer
Germany
67346

Study participating centre
Zentrum für Strahlentherapie
Wirthstraße 11c
Freiburg im Breisgau
Germany
79110

Study participating centre
Klinikum Darmstadt
Grafenstraße 9
Darmstadt
Germany
64283

Study participating centre
Strahlentherapie An der Stadtklinik
Balger Str. 50
Baden-Baden
Germany
76532

Study participating centre
The Institute for Cancer Research and Treatment
Strada Provinciale
Candiolo
Italy
10060

Study participating centre
Derby Hospitals NHS Foundation Trust
Uttoxeter Road
Derby
United Kingdom
DE22 3NE

Study participating centre
Nottingham University Hospitals NHS Trust
Hucknall Road
Nottingham
United Kingdom
NG5 1PB

Study participating centre
Salford Royal Foundation Trust
Stott Lane
Salford
United Kingdom
M6 8HD

Study participating centre
Birmingham NHS Foundation Trust
Birmingham
United Kingdom
B15 2TH

Study participating centre
Centre Hospitalier Régional Universitaire de Nîmes
4 Rue du Professeur Robert Debré

Nîmes
France
30029

Study participating centre
Memorial Sloan Kettering Cancer Centre
1275 York Ave
New York
United States of America
10065

Study participating centre
Queens Cancer Centre
82-68 164th Street New-Bldg
5th Floor
Jamaica
New York
United States of America
11432

Sponsor information

Organisation
University of Manchester (UK)

ROR
https://ror.org/027m9bs27

Funder(s)

Funder type
Government

Funder Name
European Union - Seventh Framework Programme for Research, Technological Development and Demonstration, Ref. 601826

Results and Publications

Individual participant data (IPD) sharing plan

We have an extensive resource of treatment, toxicity & PRO data as well as DVH & DICOM, genotyping & breast photos. It is accessible to all (following submission and approval of a concept form). Researchers can find out top level data on numbers of patients with particular characteristics using our 'Data Discovery' link off the website. Our CRFs are available on the website for use by others to improve standardisation of data collection in the field. A baseline manuscript is in preparation describing the cohort in detail.

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/09/2019	05/03/2020	Yes	No
Plain English results				No	Yes
Study website		11/11/2025	11/11/2025	No	Yes