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Radiotherapy given to a reduced area following surgery in adult patients with limb, hand or foot soft tissue sarcoma to find out if it will cause fewer side effects, without increasing the risk of the sarcoma coming back

Submission date 28/09/2005	**Recruitment status** No longer recruiting	[X] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 06/10/2005	**Overall study status** Completed	
Last Edited 23/10/2026	**Condition category** Cancer	

Plain English summary of protocol
http://www.cancerhelp.org.uk/trials/a-trial-looking-at-the-size-of-the-radiotherapy-treatment-area-for-people-with-soft-tissue-sarcoma

Contact information

Type(s)
Scientific

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Additional identifiers

ClinicalTrials.gov (NCT)
NCT00423618

Protocol serial number
SA3002

Study information

Scientific Title
Randomised trial of volume of post-operative radiotherapy given to adult patients with extremity soft tissue sarcoma

Acronym
VORTEX

Study objectives
The timing of the radiotherapy in relation to surgery, the extent of surgery required, the extent of apparently normal tissue around the tumour bed to be included in the irradiated volume, and the best dose and fractionation schedule are still unresolved issues. There have been no systematic reviews or randomised trials in the field of extremity soft tissue sarcoma in adult patients. It is now time to obtain data from a prospective study of radiotherapy margins in the treatment of adult extremity soft tissue sarcoma. There is no evidence that the international practice of irradiating large volumes of normal tissue is necessary. The VORTEX study has been designed to address this question. A positive result would change international practice and significantly reduce the morbidity of radiotherapy treatment in this group of patients.

Protocol can be found at: http://www.birmingham.ac.uk/Documents/college-mds/trials/crctu/vortex/pdfsindexvortex/VORTEXProtocolversion602082010.pdf

On 15/02/2011 the anticipated end date was updated from 09/01/2010 to 31/07/2011.

Ethics approval required
Old ethics approval format

Ethics approval(s)
North-East York REC, 08/03/2006, ref: 06/MRE03/3

Primary study design
Interventional

Study design
Randomised controlled trial

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Extremity soft tissue sarcoma

Interventions
Patients will have a number of baseline assessments prior to surgery, including:
1. History
2. Physical examination

3. Performance status
4. Vital signs
5. Haematology (full blood count [FBC] with differential)
6. Biochemistry
7. Chest X-ray
8. Computed tomography (CT) scan thorax
9. Magnetic resonance imaging (MRI) local site
10. Completion of the Toronto Extremity Salvage Score (TESS) questionnaire

Post surgery patients will undergo the following assesments:
1. Physical examination
2. Performance status
3. Vital signs
4. Wound assesment
5. Completion of the Toronto Extremity Salvage Score (TESS) questionnaire
6. Completion of the patient perceived change of status

Randomisation will take place after surgery and within a time frame so that treatment can commence within 12 weeks of surgery. Patients who fulfill all the eligibility citeria will then be randomised by the CRCTU into one of the two treatment arms:

Radiotherapy treatment:
Control arm: a total of 33 fractions each of 2 Gy should be given once a day for 5 days per week over 6 weeks and 3 days in week 7, totalling 66 Gy. Treatment should not be given routinely at weekends. The first 25 fractions (50 Gy) will be given to a Clinical Target Volume (CTV) which gives a 5 cm margin to the GTV the surgical bed cranio-caudally or 1 cm margin to the scar, whichever is longer in the cranial caudal direction. Axially a minimum of 2 cm for the CTV unless there is an intact fascial boundary. The phase 2 of 16 Gy in 8 fractions will treat a CTV volume, giving a 1.5 cm margin to the surgical bed longitudinally and 2 cm laterally on an intact fascial boundary.

Research arm: a total of 33 fractions each of 2 Gy should be given once a day for 5 days per week over 6 weeks and 3 days in week 7, totalling 66 Gy. The experimental treatment arm shall be to treat a CTV volume giving a 1.5 cm margin to the surgical bed longitudinally and 2 cm laterally on an intact fascial boundary. The entire treatment shall be given to the volume described as phase 2 in the control arm.

During radiotherapy the acute skin morbidity will be checked weekly.

Follow-up assesments:
6 months post-operation:
1. Physical examination
2. Performance status
3. Vital signs
4. Late radiation morbidity
5. Chest X-ray
6. MRI local site
7. Completion of the Toronto Extremity Salvage Score (TESS) questionnaire
8. Completion of the patient perceived change of status

9 months post-operation:
1. Physical examination

2. Performance status
3. Vital signs
4. Late radiation morbidity
5. Chest X-ray

12 months post-operation:
1. Physical examination
2. Performance status
3. Vital signs
4. Late radiation morbidity
5. Chest X-ray
6. MRI local site
7. Completion of the Toronto Extremity Salvage Score (TESS) questionnaire
8. Completion of the patient perceived change of status

15 months post-operation:
1. Physical examination
2. Performance status
3. Vital signs
4. Late radiation morbidity
5. Chest X-ray

18 months post-operation:
1. Physical examination
2. Performance status
3. Vital signs
4. Late radiation morbidity
5. Chest X-ray
6. MRI local site
7. Completion of the Toronto Extremity Salvage Score (TESS) questionnaire
8. Completion of the patient perceived change of status

24 months post-operation:
1. Physical examination
2. Performance status
3. Vital signs
4. Late radiation morbidity
5. Chest X-ray
6. MRI local site
7. Completion of the Toronto Extremity Salvage Score (TESS) questionnaire
8. Completion of the patient perceived change of status

Intervention Type
Other

Primary outcome(s)
1. Limb functionality: as measured by the Toronto Extremity Salvage Score (TESS)
2. Time to local recurrence: defined in whole days, as the time from randomisation into the trial to the occasion when a biopsy-confirmed local recurrence is first suspected by clinical

examination; for those patients who are not observed to have a local relapse during the course of the study, the time to local recurrence will be censored at the last follow-up date
3. Local recurrence rate

Key secondary outcome(s)
1. Soft tissue and bone toxicity: measured by the RTOG scoring system
2. Disease-free survival time: defined in whole days as time from randomisation into the trial to either local or distant recurrence or death (whichever occurs first)
3. Overall survival time: defined in whole days as time from randomisation into the trial to death

Completion date
16/10/2018

Eligibility

Key inclusion criteria
1. Histologically proven soft tissue sarcoma. Imaging and pathology from first surgery are required.
2. Lesion originates in extremity. For upper extremity this includes lesions from the medial border of the scapula to tumours as far distal as the finger tips. It does not include lesions of the chest wall arising adjacent to the scapula but not originating in the shoulder bone. The lower extremity regions include hip girdle tumours commencing at the iliac crest, excluding lesions arising from within the pelvis, and extends to include lesions as far distal as the toes.
3. The patients who have undergone excisional biopsy with positive margins or other inadequate surgery (macroscopically involved margins) will be eligible for entry into this study only following further definitive re-excision. A microscopically irradical surgical margin is permitted but not a macroscopically involved one. Patients with positive margins in whom no further surgery is possible short of amputation or major functional loss may be included provided there is no macroscopic residual disease.
4. Patient has been evaluated by the surgeon and radiotherapist, who agree that a combination of the two treatments is appropriate and that the patient is fit for protocol therapy
5. No prior radiotherapy to the local site
6. Signed and dated Patient Informed Consent
7. Protocol treatment is to begin within 12 weeks of surgery
8. Patient must be 16 years of age or older

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Total final enrolment
216

Key exclusion criteria
1. Patient has rhabdomyosarcoma of the alveolar or embryonal subcategories, primitive neuro-ectodermal tumour (PNET) soft tissue Ewings sarcoma, extraskeletal osteosarcoma, aggressive fibromatosis (desmoid tumours) or dermatofibrosarcoma protruberans
2. Patients with local recurrence after previous treatment of a sarcoma are excluded (as they have a significantly higher risk of late recurrence)
3. Prior or concurrent malignancy except adequately treated non-melanomatous carcinoma of the skin or in situ carcinoma of the cervix
4. Stage of disease such that limb conservation treatment by a combination of surgery and radiotherapy is not appropriate
5. The surgery performed has left macroscopic tumour in situ
6. Use of neoadjuvant or adjuvant chemotherapy
7. Patient has regional nodal disease or unequivocal distant metastasis
8. Other major medical illness judged likely by the local investigator to preclude safe administration of protocol treatment
9. Local recurrence more than 3 months after previous definitive surgery (patients with local recurrence within 3 months of previous surgery and who undergo subsequent re-excision may be included as they are considered to have initial inadequate primary excision)

Date of first enrolment
20/07/2007

Date of final enrolment
16/07/2013

Locations

Countries of recruitment
United Kingdom

England

Scotland

Study participating centre
Cancer Research Centre
-
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Study participating centre
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Study participating centre
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Study participating centre
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Study participating centre
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Study participating centre
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Study participating centre

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Study participating centre
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Sponsor information

Organisation
University of Sheffield (UK)

ROR
https://ror.org/05krs5044

Funder(s)

Funder type
Charity

Funder Name
Cancer Research UK

Alternative Name(s)
CR_UK, Cancer Research UK - London, Cancer Research UK (CRUK), CRUK

Funding Body Type
Private sector organisation

Funding Body Subtype
Other non-profit organizations

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from vortex@trials.bham.ac.uk

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Abstract results		01/10/2016	13/04/2022	No	No
Study website		11/11/2025	11/11/2025	No	Yes