Clinical trial results:
A Pilot Study Investigating the Sensitivity of 18F-labelled Sodium Fluoride PET-CT for Detecting Skeletal Metastases in Renal Cell Carcinoma compared to Planar Bone Scintigraphy and Multidetector CT

Summary

EudraCT number	2010-024624-20
Trial protocol	GB
Global end of trial date	06 August 2014

Results information

Result version number	v1 (current)
This version publication date	08 July 2016
First version publication date	30 July 2015

Trial information

Trial identification

Sponsor protocol code	OCRD2010/22

Additional study identifiers

ISRCTN number	ISRCTN66828876
ClinicalTrials.gov id (NCT number)	-
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Cambridge University Hospitals NHS Foundation Trust
Sponsor organisation address	Hills Road, Cambridge University Hospitals NHS Foundation Trus, United Kingdom, CB2 0QQ
Public contact	Prasanna Kapilan, Cambridge clinical trials unit (CCTU), +44 1223 596 474 , Prasanna.kapilan@addenbrookes.nhs.uk
Scientific contact	Dr Ferdia Gallagher, Cambridge University Hospitals NHS Foundation Trust, fag1000@cam.ac.uk

Notes:

Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	No
Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial?	No
Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial?	No

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	30 June 2015
Is this the analysis of the primary completion data?	Yes
Primary completion date	05 August 2014
Global end of trial reached?	Yes
Global end of trial date	06 August 2014
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To determine if 18F-labelled sodium fluoride Na18FPET- CT is more sensitive at detecting bone metastases in renal cell carcinoma than conventional techniques i.e. bone scintigraphy (including SPECT of the lower bdomen/pelvis) and computed tomography (CT). Number, site, and extent of metastases will be evaluated.

Protection of trial subjects:

"To minimise radiation, a scintigram will only be performed if it has not already been performed within 28 days in Addenbrooke's. There is a potential risk to a fetus but pregnant women will be excluded and, where appropriate, a pregnancy test will be performed. There will be up to three extra visits to hospital. Where possible, the screening visit will coincide with routine clinic visits. Patients will be reimbursed for travel. There will be no invasive procedures in this study other than injections of the imaging agents that may cause slight discomfort and bruising.Drawing blood, in the case of a pregnancy test, may cause pain, bruising, lightheadedness, and rarely, infection."

Background therapy:

N/A

Evidence for comparator:

N/A

Actual start date of recruitment	08 December 2011
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	United Kingdom: 11
Worldwide total number of subjects	11
EEA total number of subjects	11

Notes:

Subjects enrolled per age group

In utero	0
Preterm newborn - gestational age < 37 wk	0
Newborns (0-27 days)	0
Infants and toddlers (28 days-23 months)	0

Children (2-11 years)	0
Adolescents (12-17 years)	0
Adults (18-64 years)	3
From 65 to 84 years	8
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Screened 15 patients and 11 patients enrolled

Pre-assignment

Screening details:

Screened 15 patients and 11 patients enrolled

Pre-assignment period milestones

Number of subjects started	15[1]
Number of subjects completed	11

Pre-assignment subject non-completion reasons

Reason: Number of subjects	not meeting inclusion criteria: 1
Reason: Number of subjects	Declined to participate: 2
Reason: Number of subjects	not specified: 1

Notes:

[1] - The number of subjects reported to have started the pre-assignment period are not the same as the worldwide number enrolled in the trial. It is expected that these numbers will be the same.
Justification: 15 screened and 11 patients enrolled to receive the protocol intervention.

Period 1

Period 1 title	On study (overall period)
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

Arms

Arm title	18-F-labelled sodium fluoride

Arm description:

All enrolled

Arm type	Single arm
Investigational medicinal product name	18F-labelled sodium fluoride
Investigational medicinal product code	N/A
Other name	N/A
Pharmaceutical forms	Solution for injection
Routes of administration	Intravenous use

Dosage and administration details:

up to 250 MBq

Number of subjects in period 1	18-F-labelled sodium fluoride
Started	11
Screening	11
Completed	10
Not completed	1
Adverse event, non-fatal	1

Baseline characteristics

Reporting groups	
Reporting group title	18-F-labelled sodium fluoride
Reporting group description:	
All enrolled	

Reporting group values	18-F-labelled sodium fluoride	Total	
Number of subjects	11	11	
Age categorical			
all enrolled			
Units: Subjects			
In utero	0	0	
Preterm newborn infants (gestational age < 37 wks)	0	0	
Newborns (0-27 days)	0	0	
Infants and toddlers (28 days-23 months)	0	0	
Children (2-11 years)	0	0	
Adolescents (12-17 years)	0	0	
Adults (18-64 years)	3	3	
From 65-84 years	8	8	
85 years and over	0	0	
Gender categorical			
all enrolled			
Units: Subjects			
Female	7	7	
Male	4	4	
ECOG status			
ECOG status			
Units: Subjects			
ECOG score 0	4	4	
ECOG score 1	4	4	
ECOG score 2	3	3	

End points

End points reporting groups

Reporting group title	18-F-labelled sodium fluoride

Reporting group description:

All enrolled

Primary: Primary endpoint

End point title	Primary endpoint[1]

End point description:

To detect and compare the number of metastases detected with Na18F-PETCT, 99mTc-MDP bone scintigraphy and multidetector CT.

End point type	Primary

End point timeframe:

Either the PET-CT or the scintigram can be performed
first but they must be done within 28 days of each other

Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.
Justification: This is a single arm trial to assess the number of metastases detected with Na18F-PET-CT, bone scintigraphy and multidetector CT alone. Analyses performed could not be reported as it is a single arm trial. The pre-specified Wilcoxon signed rank test (paired test) was performed. The results are as follows.
18F-NaF PET-CT versus multidetector CT (n=10) , p value = 0.007
18F-NaF PET-CT versus Bone scintigraphy (n=10), p value = 0.007

End point values	18-F-labelled sodium fluoride			
Subject group type	Reporting group			
Number of subjects analysed	10			
Units: number of metastases detected				
Number of malignant lesions with bone scinitgraphy	22			
Number of malignant lesions with multidetector CT	35			
Number of malignant lesions with Na18F-PETCT per p	77			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

From date of consent to end of year 1

Assessment type	Systematic

Dictionary used

Dictionary name	CTCAE
Dictionary version	4

Reporting groups

Reporting group title	All enrolled

Reporting group description:

N/A

Serious adverse events	All enrolled		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 11 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

Frequency threshold for reporting non-serious adverse events: 0 %

Non-serious adverse events	All enrolled		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	1 / 11 (9.09%)		
Musculoskeletal and connective tissue disorders			
pain	Additional description: discomfort during the 18F-NAF PET/CT imaging		
subjects affected / exposed	1 / 11 (9.09%)		
occurrences (all)	1		

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
16 August 2012	Extend the trial duration, allow nurses to consent, amend order of scans
29 November 2012	Amend inclusion criteria

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported