Clinical trial results:
ACE inhibition and mechanisms of skeletal muscle weakness in COPD

Summary

EudraCT number	2008-004431-38
Trial protocol	GB
Global end of trial date	03 December 2012

Results information

Result version number	v1 (current)
This version publication date	20 May 2020
First version publication date	20 May 2020

Trial information

Trial identification

Sponsor protocol code	P15099

Additional study identifiers

ISRCTN number	ISRCTN05581879
ClinicalTrials.gov id (NCT number)	NCT01014338
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Imperial College London
Sponsor organisation address	South Kensington Campus, London, United Kingdom, SW7 2AZ
Public contact	Dr Nicholas Hopkinson, Imperial College London, +44 020 73497775, n.hopkinson@ic.ac.uk
Scientific contact	Dr Nicholas Hopkinson, Imperial College London, +44 020 73497775, n.hopkinson@ic.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	16 December 2013
Is this the analysis of the primary completion data?	Yes
Primary completion date	03 September 2012
Global end of trial reached?	Yes
Global end of trial date	03 December 2012
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To establish whether ACE inhibition can improve muscle strength in patients with COPD who have leg weakness. The effect of the study drug on the molecular pathways involved in muscle wasting will be determined in muscle biopsies taken before and after the study.

Protection of trial subjects:

None

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	13 October 2009
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: 80
Worldwide total number of subjects	80
EEA total number of subjects	80

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)	0
From 65 to 84 years	80
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

Participants were recruited in Royal Brompton Hospital, between October 2009 and December 2012

Pre-assignment

Screening details:

80 eligible participants with COPD

Period 1

Period 1 title	Overall (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator

Arms

Are arms mutually exclusive?	Yes
Arm title	ACE-inhibitor

Arm description: -

Arm type	Experimental
Investigational medicinal product name	Fosinopril sodium
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Oral use

Dosage and administration details:

10mg od

Arm title	Sugar Pill

Arm description: -

Arm type	Placebo
Investigational medicinal product name	Sugar Pill
Investigational medicinal product code	Lactose
Other name	
Pharmaceutical forms	Capsule
Routes of administration	Oral use

Dosage and administration details:

as another arm

Number of subjects in period 1	ACE-inhibitor	Sugar Pill
Started	39	41
Completed	39	41

Baseline characteristics

Reporting groups	
Reporting group title	ACE-inhibitor
Reporting group description: -	
Reporting group title	Sugar Pill
Reporting group description: -	

Reporting group values	ACE-inhibitor	Sugar Pill	Total
Number of subjects	39	41	80
Age categorical Units: Subjects			
From 65-84 years	39	41	80
Age continuous Units: years			
arithmetic mean	66.3	64.6	
standard deviation	± 8.2	± 7.3	-
Gender categorical Units: Subjects			
Female	20	18	38
Male	19	23	42

End points

End points reporting groups

Reporting group title	ACE-inhibitor
Reporting group description: -	
Reporting group title	Sugar Pill
Reporting group description: -	

Primary: Change in Atrogin-1 Messenger RNA Expression

End point title	Change in Atrogin-1 Messenger RNA Expression[1]
End point description:	
End point type	Primary
End point timeframe:	
Baseline and 3 months	

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: N/A

End point values	ACE-inhibitor	Sugar Pill		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	36		
Units: Arbitrary units				
arithmetic mean (confidence interval 95%)	-0.18 (-0.41 to 0.04)	-0.15 (-0.35 to 0.04)		

Statistical analyses

No statistical analyses for this end point

Secondary: Quadriceps Endurance Assessed Non-volitionally

End point title	Quadriceps Endurance Assessed Non-volitionally
End point description:	
End point type	Secondary
End point timeframe:	
Baseline and 3 months	

End point values	ACE-inhibitor	Sugar Pill		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	31	36		
Units: seconds				
geometric mean (confidence interval 95%)	5.1 (-4.3 to 14.5)	4.6 (-5.8 to 15.1)		

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information[1]

Timeframe for reporting adverse events:

3 months

Assessment type	Non-systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	10

Reporting groups

Reporting group title	ACE-inhibitor
Reporting group description: -	
Reporting group title	Sugar Pill
Reporting group description: -	

Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.
Justification: N/A

Serious adverse events	ACE-inhibitor	Sugar Pill	
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 39 (0.00%)	3 / 41 (7.32%)	
number of deaths (all causes)	0	1	
number of deaths resulting from adverse events	0	0	
Nervous system disorders			
CVA			
subjects affected / exposed	0 / 39 (0.00%)	1 / 41 (2.44%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Respiratory, thoracic and mediastinal disorders			
Acute exacerbation of COPD			
subjects affected / exposed	0 / 39 (0.00%)	1 / 41 (2.44%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Renal and urinary disorders			
Bladder cancer			
subjects affected / exposed	0 / 39 (0.00%)	1 / 41 (2.44%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	

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

Non-serious adverse events	ACE-inhibitor	Sugar Pill	
Total subjects affected by non-serious adverse events subjects affected / exposed	0 / 39 (0.00%)	0 / 41 (0.00%)	

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported