Clinical trial results:
'Stem cell Trial of recovery EnhanceMent after Stroke 3' (STEMS 3)- a pilot randomised controlled trial of G-CSF and therapy in chronic stroke

Summary

EudraCT number	2011-001684-50
Trial protocol	GB
Global end of trial date	30 October 2013

Results information

Result version number	v1 (current)
This version publication date	24 February 2019
First version publication date	24 February 2019

Trial information

Trial identification

Sponsor protocol code	11015

Additional study identifiers

ISRCTN number	ISRCTN16714730
ClinicalTrials.gov id (NCT number)	-
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	University of Nottingham
Sponsor organisation address	Jubilee Campus, Triumph Road, Nottingham, United Kingdom, NG8 1DH
Public contact	Nikola Sprigg, University of Nottingham, +44 115 8231765, nikola.sprigg@nottingham.ac.uk
Scientific contact	Angela Shone, University of Nottingham, +44 115 8467906, angela.shone@nottingham.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	04 February 2016
Is this the analysis of the primary completion data?	Yes
Primary completion date	30 October 2013
Global end of trial reached?	Yes
Global end of trial date	30 October 2013
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To assess the safety, feasibility, and tolerability of delivering the drug G-CSF and or rehabilitation therapy in chronic stroke patients.

Protection of trial subjects:

N/A

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	17 November 2011
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	United Kingdom: 60
Worldwide total number of subjects	60
EEA total number of subjects	60

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)	26
From 65 to 84 years	32
85 years and over	2

Subject disposition

Recruitment

Recruitment details:

Recruitment commenced on 17th November 2011 and was completed on 1st July 2013

Pre-assignment

Screening details:

Participants had to demonstrate disability, mRs greater than 1 and no longer be receiving ongoing rehabilitation therapy.
3 months - 2 years post stroke

Period 1

Period 1 title	Baseline
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Monitor, Data analyst, Carer, Assessor

Arms

Are arms mutually exclusive?	No
Arm title	GCSF

Arm description: -

Arm type	Experimental
Investigational medicinal product name	Filgastrim
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

1 x 10E6 iu/kg injection once per day for 5 days

Arm title	Placebo

Arm description: -

Arm type	Placebo
Investigational medicinal product name	Normal Saline
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use

Dosage and administration details:

0.9% solution once per day for 5 days

Arm title	Therapy

Arm description: -

Arm type	Received physiotherapy

No investigational medicinal product assigned in this arm

Arm title	No therapy

Arm description: -

Arm type	Standard care

No investigational medicinal product assigned in this arm

Number of subjects in period 1	GCSF	Placebo	Therapy
Started	30	30	30
Completed	30	30	30

Number of subjects in period 1	No therapy
Started	30
Completed	30

Period 2	
Period 2 title	Day 90
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Monitor, Data analyst, Carer, Assessor
Arms	
Are arms mutually exclusive?	Yes
Arm title	GCSF
Arm description: -	
Arm type	Experimental
Investigational medicinal product name	Filgastrim
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use
Dosage and administration details: 1 x 10E6 iu/kg injection once per day for 5 days	
Arm title	Placebo
Arm description: -	
Arm type	Placebo
Investigational medicinal product name	Normal Saline
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Injection
Routes of administration	Subcutaneous use
Dosage and administration details: 0.9% solution once per day for 5 days	
Arm title	Therapy
Arm description: -	
Arm type	Received physiotherapy

No investigational medicinal product assigned in this arm	
Arm title	No therapy
Arm description: -	
Arm type	Standard care
No investigational medicinal product assigned in this arm	

Number of subjects in period 2	GCSF	Placebo	Therapy
Started	30	30	30
Completed	30	27	28
Not completed	0	3	2
Lost to follow-up	-	3	2

Number of subjects in period 2	No therapy
Started	30
Completed	29
Not completed	1
Lost to follow-up	1

Baseline characteristics

Reporting groups	
Reporting group title	GCSF
Reporting group description: -	
Reporting group title	Placebo
Reporting group description: -	
Reporting group title	Therapy
Reporting group description: -	
Reporting group title	No therapy
Reporting group description: -	

Reporting group values	GCSF	Placebo	Therapy
Number of subjects	30	30	30
Age categorical Units: Subjects			
Adults (18-64 years)	12	14	14
From 65-84 years	18	14	16
85 years and over	0	2	0
Age continuous Units: years			
arithmetic mean	66.8	65.6	65.6
standard deviation	± 8.33	± 12.8	± 9.46
Gender categorical Units: Subjects			
Female	13	11	11
Male	17	19	19

Reporting group values	No therapy	Total	
Number of subjects	30	60	
Age categorical Units: Subjects			
Adults (18-64 years)	12	26	
From 65-84 years	16	32	
85 years and over	2	2	
Age continuous Units: years			
arithmetic mean	66.9		
standard deviation	± 11.97	-	
Gender categorical Units: Subjects			
Female	13	24	
Male	17	36	

End points

End points reporting groups	
Reporting group title	GCSF
Reporting group description: -	
Reporting group title	Placebo
Reporting group description: -	
Reporting group title	Therapy
Reporting group description: -	
Reporting group title	No therapy
Reporting group description: -	
Reporting group title	GCSF
Reporting group description: -	
Reporting group title	Placebo
Reporting group description: -	
Reporting group title	Therapy
Reporting group description: -	
Reporting group title	No therapy
Reporting group description: -	

Primary: Day 90 mRs	
End point title	Day 90 mRs
End point description:	
End point type	Primary
End point timeframe:	
Day 90	

End point values	GCSF	Placebo	Therapy	No therapy
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	30	27	28	29
Units: Mean mRs				
arithmetic mean (standard deviation)	2.8 (± 1.03)	2.9 (± 0.91)	2.9 (± 1.04)	2.8 (± 0.90)

Statistical analyses

Statistical analysis title	GCSF comparison
Comparison groups	GCSF v Placebo

Number of subjects included in analysis	57
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.46
Method	t-test, 2-sided

Statistical analysis title	Therapy comparison
Comparison groups	No therapy v Therapy
Number of subjects included in analysis	57
Analysis specification	Pre-specified
Analysis type	superiority
P-value	= 0.9
Method	t-test, 2-sided

Adverse events

Adverse events information[1]

Timeframe for reporting adverse events:

Day 90

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	19

Reporting groups

Reporting group title	All patients

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: Non-serious adverse events not recorded

Serious adverse events	All patients		
Total subjects affected by serious adverse events			
subjects affected / exposed	12 / 60 (20.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		
General disorders and administration site conditions			
SAE			
subjects affected / exposed	12 / 60 (20.00%)		
occurrences causally related to treatment / all	0 / 44		
deaths causally related to treatment / all	0 / 0		

Frequency threshold for reporting non-serious adverse events: 5 %

Non-serious adverse events	All patients		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 60 (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

Limitations of the trial such as small numbers of subjects analysed or technical problems leading to unreliable data.

N/A

Notes:

Online references

http://www.ncbi.nlm.nih.gov/pubmed/27610616