



## Clinical trial results:

### A phase I/II safety and tolerability dose escalation study following the autologous infusion of expanded adult haemopoietic stem cells to patients with liver insufficiency

#### Summary

EudraCT number	2005-001222-83
Trial protocol	GB
Global end of trial date	30 April 2009

#### Results information

Result version number	v1 (current)
This version publication date	24 October 2019
First version publication date	24 October 2019
Summary attachment (see zip file)	End of Study Report (2005 00122 83 HHSC 001 End of Study Report.pdf)

#### Trial information

##### Trial identification

Sponsor protocol code	HHSC/001
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT00655707
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	Professor Nagy Habib, Imperial College London, +44 2033138574 , nagy.habib@imperial.ac.uk
Scientific contact	Professor Nagy Habib, Imperial College London, +44 2033138574 , nagy.habib@imperial.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:

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**Results analysis stage**

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Analysis stage	Final
Date of interim/final analysis	21 April 2010
Is this the analysis of the primary completion data?	Yes
Primary completion date	30 April 2009
Global end of trial reached?	Yes
Global end of trial date	30 April 2009
Was the trial ended prematurely?	No

Notes:

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**General information about the trial**

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Main objective of the trial:

To determine the maximum tolerated dose of expanded autologous cells derived from a subset of CD34+ stem cells when infused into either the hepatic artery or the portal vein. The trial will also seek to determine clinical improvement or deterioration by measurement of clinical parameters such as liver function tests.

Protection of trial subjects:

None

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	31 January 2006
Long term follow-up planned	No
Independent data monitoring committee (IDMC) involvement?	No

Notes:

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**Population of trial subjects**

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**Subjects enrolled per country**

Country: Number of subjects enrolled	United Kingdom: 5
Worldwide total number of subjects	5
EEA total number of subjects	5

Notes:

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**Subjects enrolled per age group**

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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)	5
From 65 to 84 years	0
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

Patient were recruited between 2006 and 2009 at Hammersmith Hospital

### Pre-assignment

Screening details:

The study was based on the hypothesis that the CD34+ cell population in granulocyte colony-stimulating factor (G-CSF)-mobilised blood contains a subpopulation of cells with the potential for regenerating damaged tissue. 5 participants were recruited.

### Period 1

Period 1 title	Autologous CD34+ cells (overall period)
Is this the baseline period?	Yes
Allocation method	Not applicable
Blinding used	Not blinded

### Arms

<b>Arm title</b>	Autologous CD34+ cells
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Arm description:

Patients with chronic liver failure who fitted the study inclusion/exclusion criteria were admitted to the ward and were given 520 µg granulocyte-colony stimulating factor by subcutaneous injection for five consecutive days to increase the number of circulating CD34+ cells. Leukapheresis was performed on Day 5. The leukapheresis product was transferred to the GCP laboratory where CD34+ cells were immunoselected using the CliniMacs device (Miltenyi Biotech). The CD34+ cells were then transferred to the patient via the hepatic artery (2 patients) or portal vein (3 patients) in the Imaging Department.

Arm type	Experimental
Investigational medicinal product name	Autologous CD34+ cells
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Concentrate for concentrate for solution for infusion
Routes of administration	Other use

Dosage and administration details:

Patients with chronic liver failure who fitted the study inclusion/exclusion criteria were admitted to the ward and were given 520 µg granulocyte-colony stimulating factor by subcutaneous injection for five consecutive days to increase the number of circulating CD34+ cells. Leukapheresis was performed on Day 5. The leukapheresis product was transferred to the GCP laboratory where CD34+ cells were immunoselected using the CliniMacs device (Miltenyi Biotech). The CD34+ cells were then transferred to the patient via the hepatic artery (2 patients) or portal vein (3 patients) in the Imaging Department. 1 x 10<sup>6</sup> (3 patients) and 2 x 10<sup>8</sup> cells (2 patients)

<b>Number of subjects in period 1</b>	Autologous CD34+ cells
Started	5
Completed	5



## Baseline characteristics

### Reporting groups

Reporting group title	Autologous CD34+ cells
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Reporting group description: -

Reporting group values	Autologous CD34+ cells	Total	
Number of subjects	5	5	
Age categorical Units: Subjects			
Adults (18-64 years)	5	5	
Age continuous Units: years			
geometric mean	49.4		
full range (min-max)	42 to 61	-	
Gender categorical Units: Subjects			
Female	1	1	
Male	4	4	

## End points

### End points reporting groups

Reporting group title	Autologous CD34+ cells
Reporting group description: Patients with chronic liver failure who fitted the study inclusion/exclusion criteria were admitted to the ward and were given 520 µg granulocyte-colony stimulating factor by subcutaneous injection for five consecutive days to increase the number of circulating CD34+ cells. Leukapheresis was performed on Day 5. The leukapheresis product was transferred to the GCP laboratory where CD34+ cells were immunoselected using the CliniMacs device (Miltenyi Biotech). The CD34+ cells were then transferred to the patient via the hepatic artery (2 patients) or portal vein (3 patients) in the Imaging Department.	

### Primary: Number of Patients Who Tolerated the Maximum Dose

End point title	Number of Patients Who Tolerated the Maximum Dose <sup>[1]</sup>
End point description: Tolerated $1 \times 10^6$ or $2 \times 10^8$ cells	
End point type	Primary
End point timeframe: 12 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: Low number of participants for statistical analyses	

End point values	Autologous CD34+ cells			
Subject group type	Reporting group			
Number of subjects analysed	5			
Units: Participants	5			

### Statistical analyses

No statistical analyses for this end point

### Primary: Number of participants without specific treatment related side effect

End point title	Number of participants without specific treatment related side effect <sup>[2]</sup>
End point description: To assess the safety of ascending doses of autologous adult stem cells when introduced into either the hepatic artery or the portal vein and to determine the maximum tolerated dose of stem cells.	
End point type	Primary
End point timeframe: 12 months	
Notes: [2] - 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: Low number of participants for statistical analyses	

<b>End point values</b>	Autologous CD34+ cells			
Subject group type	Reporting group			
Number of subjects analysed	5			
Units: Participants	5			

### Statistical analyses

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No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

12 months

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	10
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### Reporting groups

Reporting group title	All participants
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Reporting group description: -

Serious adverse events	All participants		
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 5 (20.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		
Renal and urinary disorders			
Urinary tract infection			
subjects affected / exposed	1 / 5 (20.00%)		
occurrences causally related to treatment / all	0 / 1		
deaths causally related to treatment / all	0 / 0		

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

Non-serious adverse events	All participants		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	5 / 5 (100.00%)		
Surgical and medical procedures			
Pain			
subjects affected / exposed	4 / 5 (80.00%)		
occurrences (all)	4		
Immune system disorders			
Fever			
subjects affected / exposed	1 / 5 (20.00%)		
occurrences (all)	1		
Gastrointestinal disorders			



Nausea subjects affected / exposed occurrences (all)	5 / 5 (100.00%) 5		
Hepatobiliary disorders			
Jaundice subjects affected / exposed occurrences (all)	4 / 5 (80.00%) 4		
Ascites subjects affected / exposed occurrences (all)	3 / 5 (60.00%) 3		

## **More information**

### **Substantial protocol amendments (globally)**

Were there any global substantial amendments to the protocol? No

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### **Interruptions (globally)**

Were there any global interruptions to the trial? No

### **Limitations and caveats**

None reported