



## Clinical trial results:

### Treatment of Osteoarthritis by Intra-articular Injection of Bone Marrow Mesenchymal Stem Cells

#### Summary

EudraCT number	2009-017624-72
Trial protocol	ES
Global end of trial date	13 November 2014

#### Results information

Result version number	v1 (current)
This version publication date	11 January 2022
First version publication date	11 January 2022

#### Trial information

##### Trial identification

Sponsor protocol code	CMM/ART
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##### Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT02123368
WHO universal trial number (UTN)	-

Notes:

#### Sponsors

Sponsor organisation name	Clinica Universidad de Navarra
Sponsor organisation address	AVENIDA PÍO XII, Nº 36, PAMPLONA/IRUÑA, Spain, 31008
Public contact	UCEC, Clínica Universidad de Navarra, 34 948 255 400, ucicec@unav.es
Scientific contact	UCEC, Clínica Universidad de Navarra, 34 948 255 400, ucicec@unav.es

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	15 December 2017
Is this the analysis of the primary completion data?	Yes
Primary completion date	13 November 2014
Global end of trial reached?	Yes
Global end of trial date	13 November 2014
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 safety and feasibility of treating knee osteoarthritis by intra-articular administration of CMM cells together with hyaluronic acid (HA).

Protection of trial subjects:

NA

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	09 March 2012
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	Spain: 30
Worldwide total number of subjects	30
EEA total number of subjects	30

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)	21
From 65 to 84 years	9
85 years and over	0

## Subject disposition

### Recruitment

Recruitment details:

33 patients were recruited between February 2012 to November 2014 of whom 30 completed the trial.

### Pre-assignment

Screening details:

Of the 30 initially planned, 33 patients were recruited to compensate for the 2 dropouts due to being recruited in the control arm and withdrawal at the discretion of the principal investigator.

### Pre-assignment period milestones

Number of subjects started	30
Number of subjects completed	30

### Period 1

Period 1 title	Treatment period (overall period)
Is this the baseline period?	Yes
Allocation method	Randomised - controlled
Blinding used	Not blinded

### Arms

Are arms mutually exclusive?	Yes
<b>Arm title</b>	Group A

Arm description:

Intra-articular injection of Hyaluronic Acid. Single dose of 3 ml.

Arm type	Active comparator
Investigational medicinal product name	Hyaluronic acid
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intraarticular use

Dosage and administration details:

Single dose of 3 ml.

<b>Arm title</b>	Group B
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Arm description:

Low Dose. Intra-articular injection of 10 million autologous mesenchymal progenitor stem cells grown ex-vivo (small volume sterile cell suspension (5-10 ml) in a vehicle suitable for intra-articular injection) followed by an intra-articular injection of Hialuronic Acid.

Arm type	Experimental
Investigational medicinal product name	ex vivo cultured autologous mesenchymal progenitor stem cells
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intraarticular use

Dosage and administration details:

10 million autologous mesenchymal progenitor stem cells cultured ex-vivo (sterile small volume cell suspension (5-10 ml) in a vehicle suitable for intra-articular injection)

Investigational medicinal product name	Hyaluronic acid
Investigational medicinal product code	
Other name	

Pharmaceutical forms	Solution for injection
Routes of administration	Intraarticular use
Dosage and administration details:	
Single dose of 3 ml.	

<b>Arm title</b>	Group C
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Arm description:

High dose. Intra-articular injection of 100 million autologous mesenchymal progenitor stem cells grown ex-vivo (small volume sterile cell suspension (5-10 ml) in a vehicle suitable for intra-articular injection) followed by an intra-articular injection of Hiauronic Acid.

Arm type	Experimental
Investigational medicinal product name	ex vivo cultured autologous mesenchymal progenitor stem cells
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intraarticular use

Dosage and administration details:

100 million autologous mesenchymal progenitor stem cells cultured ex-vivo (sterile small volume cell suspension (5-10 ml) in a vehicle suitable for intra-articular injection)

Investigational medicinal product name	Hyaluronic acid
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intraarticular use

Dosage and administration details:

Single dose of 3 ml.

<b>Number of subjects in period 1</b>	Group A	Group B	Group C
Started	10	10	10
Completed	10	10	10

## Baseline characteristics

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### Reporting groups

Reporting group title	Treatment period
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Reporting group description: -

Reporting group values	Treatment period	Total	
Number of subjects	30	30	
Age categorical			
Units: Subjects			
Adults (18-64 years)	21	21	
From 65-84 years	9	9	
Gender categorical			
Units: Subjects			
Female	11	11	
Male	19	19	

## End points

### End points reporting groups

Reporting group title	Group A
Reporting group description: Intra-articular injection of Hyaluronic Acid. Single dose of 3 ml.	
Reporting group title	Group B
Reporting group description: Low Dose. Intra-articular injection of 10 million autologous mesenchymal progenitor stem cells grown ex-vivo (small volume sterile cell suspension (5-10 ml) in a vehicle suitable for intra-articular injection) followed by an intra-articular injection of Hiauronic Acid.	
Reporting group title	Group C
Reporting group description: High dose. Intra-articular injection of 100 million autologous mesenchymal progenitor stem cells grown ex-vivo (small volume sterile cell suspension (5-10 ml) in a vehicle suitable for intra-articular injection) followed by an intra-articular injection of Hiauronic Acid.	

### Primary: Feasibility

End point title	Feasibility <sup>[1]</sup>
End point description:	
End point type	Primary
End point timeframe: From inclusion to treatment.	
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: It is primarily a descriptive statistic.	

End point values	Group A	Group B	Group C	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	10	10	10	
Units: Number of patients	10	10	10	

### Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

All Adverse Events that occurred during the study were recorded.

Assessment type	Systematic
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### Dictionary used

Dictionary name	MedDRA
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Dictionary version	24.1
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### Reporting groups

Reporting group title	Grupo A
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Reporting group description: -

Reporting group title	Grupo B
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Reporting group description: -

Reporting group title	Grupo C
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Reporting group description: -

Serious adverse events	Grupo A	Grupo B	Grupo C
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 10 (0.00%)	1 / 10 (10.00%)	1 / 10 (10.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0
Cardiac disorders			
Angina pectoris			
subjects affected / exposed	0 / 10 (0.00%)	0 / 10 (0.00%)	1 / 10 (10.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Immune system disorders			
Anaphylactic shock			
subjects affected / exposed	0 / 10 (0.00%)	1 / 10 (10.00%)	0 / 10 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 1	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

Frequency threshold for reporting non-serious adverse events: 1 %

Non-serious adverse events	Grupo A	Grupo B	Grupo C
Total subjects affected by non-serious adverse events			
subjects affected / exposed	3 / 10 (30.00%)	6 / 10 (60.00%)	9 / 10 (90.00%)

Vascular disorders Hypertension subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0	2 / 10 (20.00%) 2	0 / 10 (0.00%) 0
Surgical and medical procedures Gastrectomy subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1	0 / 10 (0.00%) 0	0 / 10 (0.00%) 0
Ear and labyrinth disorders Hypoacusis subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0	1 / 10 (10.00%) 1	0 / 10 (0.00%) 0
Eye disorders Cataract subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0	1 / 10 (10.00%) 2	0 / 10 (0.00%) 0
Musculoskeletal and connective tissue disorders Arthralgia subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1	1 / 10 (10.00%) 1	3 / 10 (30.00%) 3
Arthritis subjects affected / exposed occurrences (all)	1 / 10 (10.00%) 1	3 / 10 (30.00%) 3	9 / 10 (90.00%) 9
Rotator cuff syndrome subjects affected / exposed occurrences (all)	0 / 10 (0.00%) 0	1 / 10 (10.00%) 1	0 / 10 (0.00%) 0



## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
04 April 2011	Expansion of a new center: Salamanca
05 July 2012	Change of sponsor.
05 December 2012	Recruitment increase
21 May 2014	Change of principal investigator.
01 July 2014	New IMP

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported