Clinical trial results:
Ensayo clínico aleatorizado, doble ciego, de grupos paralelos, de la inyección intra-articular de plasma rico en plaquetas frente a la inyección intra-articular de betametasona y bupivacaína en la artrosis degenerativa de rodilla

A prospective, randomized, double-blinded, clinical trial, comparing platelet-rich plasma intra-articular knee injections Versus Corticosteroid intra-articular knee injections for knee osteoarthritis

Summary

EudraCT number	2010-023977-21
Trial protocol	ES
Global end of trial date	31 July 2014

Results information

Result version number	v1 (current)
This version publication date	31 October 2021
First version publication date	31 October 2021

Trial information

Trial identification

Sponsor protocol code	PRP2010

Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	VHIR
Sponsor organisation address	Passeig Vall Hebron 119-129, Barcelona, Spain, 08035
Public contact	Joaquin Lopez-Soriano, VHIR, joaquin.lopez.soriano@vhir.org
Scientific contact	Dr Nayana Joshi, VHIR, njoshi@vhebron.net

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	31 July 2014
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	31 July 2014
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

Determinar la utilidad clínica de la infiltración intraarticular de plasma rico en plaquetas en el tratamiento de la artrosis de rodilla para la disminución del dolor subjetivo

Protection of trial subjects:

This clinical trial was conducted in accordance with the principles of the Declaration of Helsinki, authorized by the Spanish Agency for Medicines and Health Products, and registered with the European Clinical Trials Database.
Rest, depending on pain, and cryotherapy were indicated in the first 24 hours after injection. Patients were authorized to use painkillers and nonsteroidal anti-inflammatories along with routine clinical practice during the study period

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	01 August 2013
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	Spain: 65
Worldwide total number of subjects	65
EEA total number of subjects	65

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)	65
From 65 to 84 years	0

85 years and over	0

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

A total of 75 patients with symptomatic knee OA (Kellgren-Lawrence grade 3 to 4) were enrolled in this study between August 2013 and July 2014. Patients were randomized to treatment either with a single leukocyte-reduced PRP or corticosteroid intra-articular injection

Period 1

Period 1 title	Overall trial (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	PRP injection

Arm description: -

Arm type	Experimental
Investigational medicinal product name	Platelet-rich plama
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Solution for injection
Routes of administration	Intraarticular use

Dosage and administration details:

Under aseptic conditions, 4 mL of either control or study treatment were injected into the medial compartment with an intramuscular needle (0.8x40 mmwithout local anesthetic, with knees hanging at 90 of flexion.
The BST prepared leukocyte-reduced PRP using a doublespin methodology. The entire process was performed in a class C clean room and under the laminar flow of a BioII/A biological safety cabinet. Approximately 60 mL of venous blood was drawn from the anticubital vein and collected into tubes containing 3.2% of citrated dextrose. Tubes were centrifuged at 280g for 15 minutes at RT, the entire plasmatic fraction was isolated in a separate sterile tube avoiding the buffy coat layer, and a 10% vol/vol of anticoagulant (ACD-A Solution) was added. The isolated plasma was centrifuged at 680g for 20 minutes, and platelets were then completely resuspended in 6 mL of autologous plasma. Finally, 4 mL of PRP were dispensed in a syringe for injection.

Arm title	Corticosteroids

Arm description: -

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

Dosage and administration details:

Intrarticular injection of 2 mL betamethasone: 6 mg betamethasone sodium phosphate and betamethasone acetate 6 mg [Merck] , along with bupivacaine

Investigational medicinal product name	Bupivacaine
Investigational medicinal product code	
Other name	

Pharmaceutical forms	Solution for injection
Routes of administration	Intraarticular use

Dosage and administration details:

Intrarticular injection of 2 mL bupivacaine 0.25% [B.Braun]) along with betamethasone:

Number of subjects in period 1	PRP injection	Corticosteroids
Started	35	30
Completed	34	30
Not completed	1	0
Lost to follow-up	1	-

Baseline characteristics

Reporting groups	
Reporting group title	PRP injection
Reporting group description: -	
Reporting group title	Corticosteroids
Reporting group description: -	

Reporting group values	PRP injection	Corticosteroids	Total
Number of subjects	35	30	65
Age categorical Units: Subjects			
In utero			0
Preterm newborn infants (gestational age < 37 wks)			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 65-84 years			0
85 years and over			0
Age continuous Units: years			
arithmetic mean	65.5	68.0	
standard deviation	± 8.6	± 7.1	-
Gender categorical Units: Subjects			
Female	23	24	47
Male	12	6	18

End points

End points reporting groups	
Reporting group title	PRP injection
Reporting group description: -	
Reporting group title	Corticosteroids
Reporting group description: -	

Primary: Visual analog scale	
End point title	Visual analog scale
End point description:	
End point type	Primary
End point timeframe:	
6 moths	

End point values	PRP injection	Corticosteroids		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	30		
Units: unit(s)				
arithmetic mean (standard error)	38.24 (± 24.80)	46.33 (± 29.88)		

Statistical analyses

Statistical analysis title	VAS score
Comparison groups	PRP injection v Corticosteroids
Number of subjects included in analysis	64
Analysis specification	Pre-specified
Analysis type	non-inferiority
P-value	= 0.29
Method	t-test, 2-sided

Secondary: KOOS score QoL	
End point title	KOOS score QoL
End point description:	
KOOS score Quality of Life	
End point type	Secondary
End point timeframe:	
6 motnhs	

End point values	PRP injection	Corticosteroids		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	34	30		
Units: unit(s)				
arithmetic mean (standard deviation)	16.36 (± 15)	20.91 (± 17.30)		

Statistical analyses

Statistical analysis title	KOOS score
Comparison groups	PRP injection v Corticosteroids
Number of subjects included in analysis	64
Analysis specification	Pre-specified
Analysis type	non-inferiority
P-value	= 0.305
Method	t-test, 2-sided

Adverse events

Adverse events information[1]

Timeframe for reporting adverse events:

6 months

Adverse event reporting additional description:

No patient had adverse effects at injection or follow-up

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	14.1

Reporting groups

Reporting group title	Total adverse events

Reporting group description: -

Serious adverse events	Total adverse events		
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 64 (0.00%)		
number of deaths (all causes)	0		
number of deaths resulting from adverse events	0		

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

Non-serious adverse events	Total adverse events		
Total subjects affected by non-serious adverse events			
subjects affected / exposed	0 / 64 (0.00%)		

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: No patient had adverse effects at injection or follow-up

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.

A larger trial using a regimen of a serial single injection every 6 months, with objective indicators and imaging assessment to evaluate OA progression, is needed to further assess the efficacy of PRP treatment in patients with advanced knee OA

Notes:

Online references

http://www.ncbi.nlm.nih.gov/pubmed/28255569