Clinical trial results:
A Randomized, Double-Blind, Placebo-Controlled, Phase 2 Study of BA058 Administered Via a Coated Transdermal Microarray Delivery System (BA058 Transdermal) in Healthy Postmenopausal Women With Osteoporosis

Summary

EudraCT number	2012-001921-29
Trial protocol	PL EE DK LT
Global end of trial date	02 August 2013

Results information

Result version number	v1 (current)
This version publication date	19 June 2020
First version publication date	19 June 2020

Trial information

Trial identification

Sponsor protocol code	BA058-05-007

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01674621
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Radius Health Inc.
Sponsor organisation address	950 Winter Street, Waltham, MA, United States, 02451
Public contact	Associate Director, Clinical Operations, Radius Health, Inc., +1 6175514077, ncantacesso@radiuspharm.com
Scientific contact	VP, Osteoporosis Clinical Development, Radius Health Inc., +1 617-444-1943, bmitlak@radiuspharm.com

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	15 November 2013
Is this the analysis of the primary completion data?	Yes
Primary completion date	02 August 2013
Global end of trial reached?	Yes
Global end of trial date	02 August 2013
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

The overall objectives of this study were to determine the clinical safety and efficacy of abaloparatide-transdermal (TD) in otherwise healthy postmenopausal women with osteoporosis as assessed by changes in bone mineral density (BMD) and serum markers of bone metabolism when compared to abaloparatide-TD placebo patch and to select dose levels of abaloparatide-TD for further clinical evaluation.

Protection of trial subjects:

This study was conducted according to the protocol and in compliance with Good Clinical Practice, the ethical principles stated in the Declaration of Helsinki, and other applicable regulatory requirements.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	25 September 2012
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	Denmark: 128
Country: Number of subjects enrolled	Estonia: 39
Country: Number of subjects enrolled	Poland: 51
Country: Number of subjects enrolled	United States: 32
Worldwide total number of subjects	250
EEA total number of subjects	218

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)	74
From 65 to 84 years	176
85 years and over	0

Subject disposition

Recruitment

Recruitment details: -

Pre-assignment

Screening details:

The actual number of participants per age categories of 18-64 years and 65-84 years is not available. Therefore, estimates for the number of participants in each category is provided in the field labeled "Number of subjects enrolled per age group."

Period 1

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

Blinding implementation details:

Since the abaloparatide injection arm was administered subcutaneously (SC), it was not possible to blind this arm of the
study. Therefore, abaloparatide-SC was considered a reference drug, but the centralized BMD assessments and bone marker evaluations remained blinded to all treatment assignments.

Arms

Are arms mutually exclusive?	Yes
Arm title	Abaloparatide Transdermal (50 mcg)

Arm description:

Abaloparatide Transdermal Microneedle Patch - 50 mcg daily applications for up to 6 months

Arm type	Experimental
Investigational medicinal product name	Abaloparatide Transdermal
Investigational medicinal product code	
Other name	BA058 Transdermal
Pharmaceutical forms	Transdermal patch
Routes of administration	Transdermal use

Dosage and administration details:

Abaloparatide Transdermal Microneedle Patch - 50 microgram (mcg) daily applications for up to 6 months

Arm title	Abaloparatide Transdermal (100 mcg)

Arm description:

Abaloparatide Transdermal Microneedle Patch - 100 mcg daily applications for up to 6 months

Arm type	Experimental
Investigational medicinal product name	Abaloparatide Transdermal
Investigational medicinal product code	
Other name	BA058 Transdermal
Pharmaceutical forms	Transdermal patch
Routes of administration	Transdermal use

Dosage and administration details:

Abaloparatide Transdermal Microneedle Patch - 100 mcg daily
applications for up to 6 months

Arm title	Abaloparatide Transdermal (150 mcg)

Arm description:

Abaloparatide Transdermal Microneedle Patch - 150 mcg daily applications for up to 6 months

Arm type	Experimental

Investigational medicinal product name	Abaloparatide Transdermal
Investigational medicinal product code	
Other name	BA058 Transdermal
Pharmaceutical forms	Transdermal patch
Routes of administration	Transdermal use

Dosage and administration details:

Abaloparatide Transdermal Microneedle Patch - 150 mcg daily applications for up to 6 months

Arm title	Abaloparatide Injection (80 mcg)

Arm description:

Abaloparatide-SC Injection - 80 mcg daily injections for up to 6 months

Arm type	Active comparator
Investigational medicinal product name	Abaloparatide Injection
Investigational medicinal product code	
Other name	BA058 Injection
Pharmaceutical forms	Solution for injection, Solution for injection in cartridge
Routes of administration	Subcutaneous use

Dosage and administration details:

Abaloparatide-SC Subcutaneous Injection - 80 mcg daily injections for up to 6 months

Arm title	Abaloparatide Transdermal Placebo (0 mcg)

Arm description:

Abaloparatide Transdermal Microneedle Patch - 0 mcg daily applications for up to 6 months

Arm type	Experimental
Investigational medicinal product name	Abaloparatide Transdermal Placebo
Investigational medicinal product code	
Other name	BA058 Placebo
Pharmaceutical forms	Transdermal patch
Routes of administration	Transdermal use

Dosage and administration details:

Abaloparatide Transdermal Microneedle Patch - 0 mcg daily applications for up to 6 months

Number of subjects in period 1	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)
Started	50	51	48
Modified Intent-to-Treat Population	47	46	43
Safety Population	50	51	47
Completed	45	43	41
Not completed	5	8	7
Consent withdrawn by subject	2	5	2
Adverse event, non-fatal	3	2	5
Severe Abaloparatide-SC Hypersensitivity	-	-	-
Other than specified	-	1	-
Inability to Complete Study Procedures	-	-	-

Number of subjects in period 1	Abaloparatide Injection (80 mcg)	Abaloparatide Transdermal Placebo (0 mcg)
Started	51	50
Modified Intent-to-Treat Population	49	46
Safety Population	51	50
Completed	45	44
Not completed	6	6
Consent withdrawn by subject	-	1
Adverse event, non-fatal	5	1
Severe Abaloparatide-SC Hypersensitivity	1	-
Other than specified	-	2
Inability to Complete Study Procedures	-	2

Baseline characteristics

Reporting groups	
Reporting group title	Abaloparatide Transdermal (50 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 50 mcg daily applications for up to 6 months	
Reporting group title	Abaloparatide Transdermal (100 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 100 mcg daily applications for up to 6 months	
Reporting group title	Abaloparatide Transdermal (150 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 150 mcg daily applications for up to 6 months	
Reporting group title	Abaloparatide Injection (80 mcg)
Reporting group description: Abaloparatide-SC Injection - 80 mcg daily injections for up to 6 months	
Reporting group title	Abaloparatide Transdermal Placebo (0 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 0 mcg daily applications for up to 6 months	

Reporting group values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)
Number of subjects	50	51	48
Age categorical Units: Subjects			
Age Continuous Units: years			
arithmetic mean	66.6	65.2	66.2
standard deviation	± 7.06	± 5.36	± 5.37
Gender, Male/Female Units:			
Female	50	51	48
Male	0	0	0

Reporting group values	Abaloparatide Injection (80 mcg)	Abaloparatide Transdermal Placebo (0 mcg)	Total
Number of subjects	51	50	250
Age categorical Units: Subjects			
Age Continuous Units: years			
arithmetic mean	66.3	66.5	
standard deviation	± 6.19	± 5.47	-
Gender, Male/Female Units:			
Female	51	50	250
Male	0	0	0

End points

End points reporting groups

Reporting group title	Abaloparatide Transdermal (50 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 50 mcg daily applications for up to 6 months	
Reporting group title	Abaloparatide Transdermal (100 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 100 mcg daily applications for up to 6 months	
Reporting group title	Abaloparatide Transdermal (150 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 150 mcg daily applications for up to 6 months	
Reporting group title	Abaloparatide Injection (80 mcg)
Reporting group description: Abaloparatide-SC Injection - 80 mcg daily injections for up to 6 months	
Reporting group title	Abaloparatide Transdermal Placebo (0 mcg)
Reporting group description: Abaloparatide Transdermal Microneedle Patch - 0 mcg daily applications for up to 6 months	

Primary: Percent Change from Baseline in Bone Mineral Density (BMD) of Lumbar Spine at 6 Months

End point title	Percent Change from Baseline in Bone Mineral Density (BMD) of Lumbar Spine at 6 Months
End point description: Percent change in BMD as specified by dual energy x-ray absorptiometry (DXA) scans of the lumbar spine.	
End point type	Primary
End point timeframe: Baseline, 6 Months	

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	1.87 (± 2.87)	2.33 (± 2.96)	2.95 (± 3.13)	5.80 (± 4.21)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				

arithmetic mean (standard deviation)	0.04 (± 2.47)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.0066 [1]
Method	Dunnett's test

Notes:

[1] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.0005 [2]
Method	Dunnett's test

Notes:

[2] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	< 0.0001 [3]
Method	Dunnett's test

Notes:

[3] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-3.93

Confidence interval	
level	95 %
sides	2-sided
lower limit	-5.555
upper limit	-2.305

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-3.47
Confidence interval	
level	95 %
sides	2-sided
lower limit	-5.104
upper limit	-1.837

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-2.856
Confidence interval	
level	95 %
sides	2-sided
lower limit	-4.519
upper limit	-1.193

Secondary: Percent Change from Baseline in BMD of Total Hip at 6 Months	
End point title	Percent Change from Baseline in BMD of Total Hip at 6 Months
End point description: Percent change in BMD as specified by DXA scans of the total hip.	
End point type	Secondary
End point timeframe: Baseline, 6 Months	

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	0.97 (± 1.95)	1.32 (± 1.96)	1.49 (± 1.73)	2.74 (± 3.05)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	-0.02 (± 2.39)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.0547 [4]
Method	Dunnett's test

Notes:

[4] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.0056 [5]
Method	Dunnett's test

Notes:

[5] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)

Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.0018 [6]
Method	Dunnett's test

Notes:

[6] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-1.768
Confidence interval	
level	95 %
sides	2-sided
lower limit	-2.864
upper limit	-0.672

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-1.42
Confidence interval	
level	95 %
sides	2-sided
lower limit	-2.522
upper limit	-0.318

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-1.247

Confidence interval	
level	95 %
sides	2-sided
lower limit	-2.368
upper limit	-0.126

Secondary: Percent Change from Baseline in BMD of Forearm at 6 Months

End point title	Percent Change from Baseline in BMD of Forearm at 6 Months
End point description:	
Percent change in BMD as specified by DXA scans of the forearm.	
End point type	Secondary
End point timeframe:	
Baseline, 6 Months	

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	-0.24 (± 2.74)	-0.16 (± 3.71)	0.84 (± 2.96)	0.33 (± 3.41)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	0.05 (± 3.18)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.9493 [7]
Method	Dunnett's test

Notes:

[7] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.9806 [8]
Method	Dunnett's test

Notes:

[8] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.5191 [9]
Method	Dunnett's test

Notes:

[9] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-0.564
Confidence interval	
level	95 %
sides	2-sided
lower limit	-2.168
upper limit	1.04

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)

Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-0.483
Confidence interval	
level	95 %
sides	2-sided
lower limit	-2.115
upper limit	1.15

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	0.517
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1.106
upper limit	2.139

Secondary: Percent Change from Baseline in Serum Bone-Specific Alkaline Phosphatase (BSAP) at 6 Months

End point title	Percent Change from Baseline in Serum Bone-Specific Alkaline Phosphatase (BSAP) at 6 Months

End point description:

End point type	Secondary

End point timeframe:

Baseline, 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	-4.84 (± 23.87)	5.22 (± 43.66)	-5.52 (± 37.86)	17.30 (± 42.76)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	10.23 (± 64.93)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.2549 [10]
Method	Dunnett's test

Notes:

[10] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.9115 [11]
Method	Dunnett's test

Notes:

[11] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.239 [12]
Method	Dunnett's test

Notes:

[12] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection

Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-22.146
Confidence interval	
level	95 %
sides	2-sided
lower limit	-40.501
upper limit	-3.79

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-12.086
Confidence interval	
level	95 %
sides	2-sided
lower limit	-30.543
upper limit	6.372

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-22.828
Confidence interval	
level	95 %
sides	2-sided
lower limit	-41.614
upper limit	-4.041

Secondary: Percent Change from Baseline in Serum Procollagen Type I C Propeptide (PICP) at 6 Months

End point title	Percent Change from Baseline in Serum Procollagen Type I C Propeptide (PICP) at 6 Months

End point description:

End point type	Secondary

End point timeframe:

Baseline, 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	-17.26 (± 22.86)	-8.42 (± 29.51)	-16.63 (± 25.11)	10.28 (± 72.31)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	-6.76 (± 31.35)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.1632 [13]
Method	Dunnett's test

Notes:

[13] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)

Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.9834 [14]
Method	Dunnett's test

Notes:

[14] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.2179 [15]
Method	Dunnett's test

Notes:

[15] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-27.541
Confidence interval	
level	95 %
sides	2-sided
lower limit	-48.557
upper limit	-6.525

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-18.702
Confidence interval	
level	95 %
sides	2-sided
lower limit	-39.835
upper limit	2.43

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-26.914
Confidence interval	
level	95 %
sides	2-sided
lower limit	-48.424
upper limit	-5.405

Secondary: Percent Change from Baseline in Serum Osteocalcin at 6 Months	
End point title	Percent Change from Baseline in Serum Osteocalcin at 6 Months
End point description:	
End point type	Secondary
End point timeframe:	
Baseline, 6 Months	

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	-4.37 (± 19.36)	6.67 (± 33.38)	-3.83 (± 22.01)	69.54 (± 81.79)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	-4.21 (± 27.55)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 1 [16]
Method	Dunnett's test

Notes:

[16] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.12 [17]
Method	Dunnett's test

Notes:

[17] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.9998 [18]
Method	Dunnett's test

Notes:

[18] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-73.906

Confidence interval	
level	95 %
sides	2-sided
lower limit	-96.926
upper limit	-50.886

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-62.872
Confidence interval	
level	95 %
sides	2-sided
lower limit	-86.019
upper limit	-39.725

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-73.367
Confidence interval	
level	95 %
sides	2-sided
lower limit	-96.927
upper limit	-49.807

Secondary: Percent Change from Baseline in Serum Procollagen Type I N Propeptide (PINP) at 6 Months

End point title	Percent Change from Baseline in Serum Procollagen Type I N Propeptide (PINP) at 6 Months

End point description:

End point type	Secondary

End point timeframe:

Baseline, 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	-12.76 (± 26.81)	1.52 (± 57.29)	-6.78 (± 38.91)	97.64 (± 172.52)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	-7.26 (± 35.49)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.8569 [19]
Method	Dunnett's test

Notes:

[19] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.6091 [20]
Method	Dunnett's test

Notes:

[20] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo

Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.9999 [21]
Method	Dunnett's test

Notes:

[21] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-110.398
Confidence interval	
level	95 %
sides	2-sided
lower limit	-156.966
upper limit	-63.831

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-96.115
Confidence interval	
level	95 %
sides	2-sided
lower limit	-142.94
upper limit	-49.29

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)

Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-104.418
Confidence interval	
level	95 %
sides	2-sided
lower limit	-152.079
upper limit	-56.758

Secondary: Percent Change from Baseline in Serum Carboxy-terminal Cross-linking Telopeptide of Type I Collagen (CTXI) at 6 Months

End point title	Percent Change from Baseline in Serum Carboxy-terminal Cross-linking Telopeptide of Type I Collagen (CTXI) at 6 Months
End point description:	
End point type	Secondary
End point timeframe:	
Baseline, 6 Months	

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	47	46	43	49
Units: Percent change				
arithmetic mean (standard deviation)	-2.61 (± 28.77)	1.65 (± 48.66)	-8.22 (± 54.84)	41.11 (± 104.12)

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	46			
Units: Percent change				
arithmetic mean (standard deviation)	9.42 (± 22.57)			

Statistical analyses

Statistical analysis title	Abaloparatide Transdermal (50 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Transdermal Placebo (0 mcg)

Number of subjects included in analysis	93
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.3483 [22]
Method	Dunnett's test

Notes:

[22] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (100 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.6839 [23]
Method	Dunnett's test

Notes:

[23] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (150 mcg) versus Placebo
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Transdermal Placebo (0 mcg)
Number of subjects included in analysis	89
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.1067 [24]
Method	Dunnett's test

Notes:

[24] - Threshold for significance at 0.05 level.

Statistical analysis title	Abaloparatide Transdermal (50 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (50 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	96
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-43.721
Confidence interval	
level	95 %
sides	2-sided
lower limit	-75.748
upper limit	-11.694

Statistical analysis title	Abaloparatide Transdermal (100 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (100 mcg) v Abaloparatide Injection (80 mcg)

Number of subjects included in analysis	95
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-39.461
Confidence interval	
level	95 %
sides	2-sided
lower limit	-71.665
upper limit	-7.257

Statistical analysis title	Abaloparatide Transdermal (150 mcg) vs Injection
Comparison groups	Abaloparatide Transdermal (150 mcg) v Abaloparatide Injection (80 mcg)
Number of subjects included in analysis	92
Analysis specification	Pre-specified
Analysis type	
Parameter estimate	Mean difference (final values)
Point estimate	-49.334
Confidence interval	
level	95 %
sides	2-sided
lower limit	-82.113
upper limit	-16.555

Secondary: Number of Participants with Abnormal Physical Examinations at Screening and End of Treatment (6 Months)

End point title	Number of Participants with Abnormal Physical Examinations at Screening and End of Treatment (6 Months)

End point description:

A full physical examination included, at a minimum: general appearance, skin, head/ears/eyes/nose/throat, lungs/chest, breasts, heart, abdomen, lymph nodes, musculoskeletal, extremities, and neurologic. Physical examination results that were considered abnormal were determined by the Investigator. A summary of other non-serious adverse events (AEs) and all serious AEs (SAEs), regardless of causality is located in Reported AE section.

End point type	Secondary

End point timeframe:

Baseline up to 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	50	51	47	51
Units: participants				
General appearance at Screening	0	0	0	1

General appearance at 6 months	0	0	1	1
Skin at Screening	28	24	17	14
Skin at 6 months	29	26	16	14
Head at Screening	6	3	2	5
Head at 6 months	6	4	3	4
Lungs at Screening	0	0	0	1
Lungs at 6 months	0	0	0	1
Breasts at Screening	4	7	3	3
Breasts at 6 months	4	7	3	4
Abdomen at Screening	7	8	4	9
Abdomen at 6 months	6	7	3	9
Lymph nodes at Screening	0	0	1	0
Lymph nodes at 6 months	0	0	0	0
Columna at Screening	1	3	7	4
Columna at 6 months	1	2	7	3
Extremities at Screening	21	13	14	23
Extremities at 6 months	23	10	14	25
Neurologic at Screening	0	0	0	2
Neurologic at 6 months	0	0	0	3

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: participants				
General appearance at Screening	0			
General appearance at 6 months	0			
Skin at Screening	21			
Skin at 6 months	17			
Head at Screening	1			
Head at 6 months	2			
Lungs at Screening	1			
Lungs at 6 months	0			
Breasts at Screening	11			
Breasts at 6 months	10			
Abdomen at Screening	4			
Abdomen at 6 months	3			
Lymph nodes at Screening	0			
Lymph nodes at 6 months	1			
Columna at Screening	1			
Columna at 6 months	1			
Extremities at Screening	21			
Extremities at 6 months	21			
Neurologic at Screening	1			
Neurologic at 6 months	1			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants with Treatment Emergent Adverse Events (TEAEs) that Occurred During the Study That were Associated with Vital Sign Changes

End point title	Number of Participants with Treatment Emergent Adverse Events (TEAEs) that Occurred During the Study That were Associated with Vital Sign Changes

End point description:

Vital sign parameters included respiration rate (breaths/minute), body temperature (°C), systolic blood pressure (SBP) and diastolic blood pressure (DBP) (mmHg), and heart rate (bpm). Number of participants for each TEAE is presented. The same participant may be included in more than one TEAE category. A summary of other non-serious AEs and all serious AEs, regardless of causality is located in Reported AE section.

End point type	Secondary

End point timeframe:

Baseline up to 7 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	50	51	47	51
Units: participants				
Hypertension	0	1	0	0
Blood Pressure Increased	0	0	1	1
Heart Rate increased	0	0	1	0
Dyspnoea	0	0	0	1
Dizziness	0	0	0	1

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: participants				
Hypertension	0			
Blood Pressure Increased	0			
Heart Rate increased	0			
Dyspnoea	0			

Dizziness	0			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants With a Clinically Meaningful Abnormal Electrocardiogram (ECG) Test Result

End point title	Number of Participants With a Clinically Meaningful Abnormal Electrocardiogram (ECG) Test Result

End point description:

The following ECG parameters were recorded: rhythm, heart rate, PR interval, QRS duration and QT/QTc. ECG results that were considered clinically meaningful were to be determined by the Investigator. A summary of other non-serious AEs and all serious AEs, regardless of causality is located in Reported AE section.

End point type	Secondary

End point timeframe:

Baseline up to 7 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	50	51	47	51
Units: participants	0	0	1	2

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: participants	0			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants with an Abnormal Clinical Hematology Laboratory Parameter with an Eastern Cooperative Oncology Group (ECOG) Score of Grade 3 or Grade 4

End point title	Number of Participants with an Abnormal Clinical Hematology Laboratory Parameter with an Eastern Cooperative Oncology

	Group (ECOG) Score of Grade 3 or Grade 4

End point description:

Hematology laboratory parameters that were evaluated via ECOG Grade 3 and Grade 4 criteria (presented in parentheses) included: white blood cell (Grade 3: 1.0-1.9*10^9/liter [L]; Grade 4 <1.0*10^9/L), platelets (Grade 3: 25.0-49.9*10^9/L; Grade 4: <25.0*10^9/L), haemoglobin (Grade 3: 65.0-79.0 grams [g]/L or 4.0–4.9 mmol/L; Grade 4: <65.0 g/L or <4.0 millimole [mmol]/L), granulocytes/bands (Grade 3: 0.5-0.9*10^9/L; Grade 4: <0.5*10^9/L), lymphocytes (Grade 3: 0.5-0.9*10^9/L; Grade 4: <0.5 *10^9/L), haemorrhage (Grade 3: gross, 3 - 4 units transfusion per episode; Grade 4: massive, > 4 units transfusion per episode). A summary of other non-serious AEs and all serious AEs, regardless of causality is located in Reported AE section.

End point type	Secondary

End point timeframe:

Baseline up to 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	50	51	47	51
Units: participants	6	5	4	1

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: participants	5			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants with an Abnormal Clinical Chemistry Laboratory Parameter with an ECOG Score of Grade 3 or Grade 4

End point title	Number of Participants with an Abnormal Clinical Chemistry Laboratory Parameter with an ECOG Score of Grade 3 or Grade 4

End point description:

Chemistry laboratory parameters that were evaluated via ECOG Grade 3 and Grade 4 criteria (presented in parentheses) included: sodium, potassium, chloride, inorganic phosphorus, albumin, total protein (Grade 3: 4 (+), >1.0 g%, or >10 g/L; Grade 4: nephrotic syndrome), glucose, blood urea nitrogen (BUN), creatinine (Grade 3: 3.1-6.0*normal; Grade 4: >6.0*normal), uric acid, aspartate aminotransferase (AST) (Grade 3: 5.1-20.0 units [U]/L*normal, Grade 4: >20.0 U/L*normal), alanine aminotransferase (ALT) (Grade 3: 5.1-20.0 U/L*normal; Grade 4: >20.0 U/L*normal), gamma-glutamyltranspeptidase (GGT), creatine phosphokinase (CPK), alkaline phosphatase (Grade 3: 5.1-20.0 U/L*normal; Grade 4: >20.0 U/L*normal), total bilirubin (Grade 3: 1.5-3.0*normal; Grade 4: >3.0*normal), lactate dehydrogenase (LDH), cholesterol, triglycerides, total calcium. A summary of other non-serious AEs and all serious AEs, regardless of causality is located in Reported AE section.

End point type	Secondary

End point timeframe:

Baseline up to 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	50	51	47	51
Units: participants	1	0	0	0

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: participants	0			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of Participants with an Abnormal Clinical Coagulation Laboratory Parameter with an ECOG Score of Grade 3 or Grade 4

End point title	Number of Participants with an Abnormal Clinical Coagulation Laboratory Parameter with an ECOG Score of Grade 3 or Grade 4

End point description:

Coagulation laboratory parameters that were evaluated via ECOG Grade 3 and Grade 4 criteria (presented in parentheses) included: prothrombin time (quick) (Grade 3: 1.51%-2.00%*normal, Grade 4: >2.00%*normal), partial thromboplastin time (Grade 3: 2.34-3.00 seconds [sec], Grade 4: >3.00 secs*normal). A summary of other non-serious AEs and all serious AEs, regardless of causality is located in Reported AE section.

End point type	Secondary

End point timeframe:

Baseline up to 6 Months

End point values	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)	Abaloparatide Injection (80 mcg)
Subject group type	Reporting group	Reporting group	Reporting group	Reporting group
Number of subjects analysed	50	51	47	51
Units: participants	0	0	0	0

End point values	Abaloparatide Transdermal Placebo (0 mcg)			
Subject group type	Reporting group			
Number of subjects analysed	50			
Units: participants	0			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Baseline up to 7 Months

Adverse event reporting additional description:

Safety population included all participants who received 1 or more doses of study medication. The participants were analyzed as treated. Individual number of occurrences (events) are not available for this study. Therefore, the number of participants exposed per preferred term are reported in the field of the number of occurrences (events).

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	15.1

Reporting groups

Reporting group title	Abaloparatide Transdermal (50 mcg)

Reporting group description:

Abaloparatide Transdermal Microneedle Patch - 50 mcg daily applications for up to 6 months

Reporting group title	Abaloparatide Transdermal (100 mcg)

Reporting group description:

Abaloparatide Transdermal Microneedle Patch - 100 mcg daily applications for up to 6 months

Reporting group title	Abaloparatide Transdermal (150 mcg)

Reporting group description:

Abaloparatide Transdermal Microneedle Patch - 150 mcg daily applications for up to 6 months

Reporting group title	Abaloparatide Injection (80 mcg)

Reporting group description:

Abaloparatide-SC Subcutaneous Injection - 80 mcg daily injections for up to 6 months

Reporting group title	Abaloparatide Transdermal Placebo (0 mcg)

Reporting group description:

Abaloparatide Transdermal Microneedle Patch - 0 mcg daily applications for up to 6 months

Serious adverse events	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 50 (0.00%)	2 / 51 (3.92%)	2 / 47 (4.26%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events	0	0	0
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Breast Cancer			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	0 / 47 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Cervix carcinoma			

subjects affected / exposed	0 / 50 (0.00%)	1 / 51 (1.96%)	0 / 47 (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
Malignant melanoma			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	0 / 47 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Injury, poisoning and procedural complications			
Radius fracture			
subjects affected / exposed	0 / 50 (0.00%)	1 / 51 (1.96%)	0 / 47 (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
Cardiac disorders			
Coronary artery disease			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	0 / 47 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Gastrointestinal disorders			
Abdominal Pain			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	0 / 47 (0.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Colitis			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	1 / 47 (2.13%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal and connective tissue disorders			
Osteoarthritis			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	1 / 47 (2.13%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

Serious adverse events	Abaloparatide Injection (80 mcg)	Abaloparatide Transdermal Placebo (0 mcg)	
Total subjects affected by serious			

adverse events			
subjects affected / exposed	4 / 51 (7.84%)	1 / 50 (2.00%)	
number of deaths (all causes)	0	0	
number of deaths resulting from adverse events	0	0	
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Breast Cancer			
subjects affected / exposed	1 / 51 (1.96%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Cervix carcinoma			
subjects affected / exposed	0 / 51 (0.00%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 0	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Malignant melanoma			
subjects affected / exposed	0 / 51 (0.00%)	1 / 50 (2.00%)	
occurrences causally related to treatment / all	0 / 0	0 / 1	
deaths causally related to treatment / all	0 / 0	0 / 0	
Injury, poisoning and procedural complications			
Radius fracture			
subjects affected / exposed	0 / 51 (0.00%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 0	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Cardiac disorders			
Coronary artery disease			
subjects affected / exposed	1 / 51 (1.96%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Gastrointestinal disorders			
Abdominal Pain			
subjects affected / exposed	1 / 51 (1.96%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Colitis			

subjects affected / exposed	0 / 51 (0.00%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 0	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	
Musculoskeletal and connective tissue disorders			
Osteoarthritis			
subjects affected / exposed	1 / 51 (1.96%)	0 / 50 (0.00%)	
occurrences causally related to treatment / all	0 / 1	0 / 0	
deaths causally related to treatment / all	0 / 0	0 / 0	

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

Non-serious adverse events	Abaloparatide Transdermal (50 mcg)	Abaloparatide Transdermal (100 mcg)	Abaloparatide Transdermal (150 mcg)
Total subjects affected by non-serious adverse events			
subjects affected / exposed	40 / 50 (80.00%)	40 / 51 (78.43%)	37 / 47 (78.72%)
Cardiac disorders			
Palpitations			
subjects affected / exposed	0 / 50 (0.00%)	2 / 51 (3.92%)	0 / 47 (0.00%)
occurrences (all)	0	2	0
Nervous system disorders			
Dizziness			
subjects affected / exposed	2 / 50 (4.00%)	2 / 51 (3.92%)	3 / 47 (6.38%)
occurrences (all)	2	2	3
Headache			
subjects affected / exposed	2 / 50 (4.00%)	2 / 51 (3.92%)	5 / 47 (10.64%)
occurrences (all)	2	2	5
General disorders and administration site conditions			
Application site erythema			
subjects affected / exposed	4 / 50 (8.00%)	5 / 51 (9.80%)	4 / 47 (8.51%)
occurrences (all)	4	5	4
Application site pruritus			
subjects affected / exposed	0 / 50 (0.00%)	1 / 51 (1.96%)	4 / 47 (8.51%)
occurrences (all)	0	1	4
Influenza like illness			

subjects affected / exposed	1 / 50 (2.00%)	3 / 51 (5.88%)	1 / 47 (2.13%)
occurrences (all)	1	3	1
Injection site erythema			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	0 / 47 (0.00%)
occurrences (all)	0	0	0
Gastrointestinal disorders			
Diarrhoea			
subjects affected / exposed	4 / 50 (8.00%)	0 / 51 (0.00%)	3 / 47 (6.38%)
occurrences (all)	4	0	3
Nausea			
subjects affected / exposed	2 / 50 (4.00%)	3 / 51 (5.88%)	6 / 47 (12.77%)
occurrences (all)	2	3	6
Respiratory, thoracic and mediastinal disorders			
Oropharyngeal pain			
subjects affected / exposed	3 / 50 (6.00%)	1 / 51 (1.96%)	3 / 47 (6.38%)
occurrences (all)	3	1	3
Renal and urinary disorders			
Hypercalciuria			
subjects affected / exposed	0 / 50 (0.00%)	1 / 51 (1.96%)	2 / 47 (4.26%)
occurrences (all)	0	1	2
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	1 / 50 (2.00%)	0 / 51 (0.00%)	4 / 47 (8.51%)
occurrences (all)	1	0	4
Back pain			
subjects affected / exposed	1 / 50 (2.00%)	4 / 51 (7.84%)	3 / 47 (6.38%)
occurrences (all)	1	4	3
Infections and infestations			
Bronchitis			
subjects affected / exposed	0 / 50 (0.00%)	0 / 51 (0.00%)	4 / 47 (8.51%)
occurrences (all)	0	0	4
Cystitis			
subjects affected / exposed	2 / 50 (4.00%)	0 / 51 (0.00%)	4 / 47 (8.51%)
occurrences (all)	2	0	4
Influenza			

subjects affected / exposed	4 / 50 (8.00%)	4 / 51 (7.84%)	2 / 47 (4.26%)
occurrences (all)	4	4	2
Nasopharyngitis			
subjects affected / exposed	11 / 50 (22.00%)	10 / 51 (19.61%)	8 / 47 (17.02%)
occurrences (all)	11	10	8
Upper respiratory tract infection			
subjects affected / exposed	0 / 50 (0.00%)	1 / 51 (1.96%)	0 / 47 (0.00%)
occurrences (all)	0	1	0
Metabolism and nutrition disorders			
Hypocalcaemia			
subjects affected / exposed	3 / 50 (6.00%)	3 / 51 (5.88%)	1 / 47 (2.13%)
occurrences (all)	3	3	1

Non-serious adverse events	Abaloparatide Injection (80 mcg)	Abaloparatide Transdermal Placebo (0 mcg)	
Total subjects affected by non-serious adverse events			
subjects affected / exposed	41 / 51 (80.39%)	39 / 50 (78.00%)	
Cardiac disorders			
Palpitations			
subjects affected / exposed	3 / 51 (5.88%)	0 / 50 (0.00%)	
occurrences (all)	3	0	
Nervous system disorders			
Dizziness			
subjects affected / exposed	8 / 51 (15.69%)	1 / 50 (2.00%)	
occurrences (all)	8	1	
Headache			
subjects affected / exposed	5 / 51 (9.80%)	5 / 50 (10.00%)	
occurrences (all)	5	5	
General disorders and administration site conditions			
Application site erythema			
subjects affected / exposed	0 / 51 (0.00%)	2 / 50 (4.00%)	
occurrences (all)	0	2	
Application site pruritus			
subjects affected / exposed	0 / 51 (0.00%)	0 / 50 (0.00%)	
occurrences (all)	0	0	
Influenza like illness			

subjects affected / exposed	1 / 51 (1.96%)	2 / 50 (4.00%)	
occurrences (all)	1	2	
Injection site erythema			
subjects affected / exposed	3 / 51 (5.88%)	0 / 50 (0.00%)	
occurrences (all)	3	0	
Gastrointestinal disorders			
Diarrhoea			
subjects affected / exposed	1 / 51 (1.96%)	0 / 50 (0.00%)	
occurrences (all)	1	0	
Nausea			
subjects affected / exposed	3 / 51 (5.88%)	2 / 50 (4.00%)	
occurrences (all)	3	2	
Respiratory, thoracic and mediastinal disorders			
Oropharyngeal pain			
subjects affected / exposed	0 / 51 (0.00%)	1 / 50 (2.00%)	
occurrences (all)	0	1	
Renal and urinary disorders			
Hypercalciuria			
subjects affected / exposed	3 / 51 (5.88%)	3 / 50 (6.00%)	
occurrences (all)	3	3	
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	3 / 51 (5.88%)	3 / 50 (6.00%)	
occurrences (all)	3	3	
Back pain			
subjects affected / exposed	3 / 51 (5.88%)	5 / 50 (10.00%)	
occurrences (all)	3	5	
Infections and infestations			
Bronchitis			
subjects affected / exposed	1 / 51 (1.96%)	1 / 50 (2.00%)	
occurrences (all)	1	1	
Cystitis			
subjects affected / exposed	1 / 51 (1.96%)	1 / 50 (2.00%)	
occurrences (all)	1	1	
Influenza			

subjects affected / exposed	5 / 51 (9.80%)	4 / 50 (8.00%)	
occurrences (all)	5	4	
Nasopharyngitis			
subjects affected / exposed	13 / 51 (25.49%)	9 / 50 (18.00%)	
occurrences (all)	13	9	
Upper respiratory tract infection			
subjects affected / exposed	3 / 51 (5.88%)	1 / 50 (2.00%)	
occurrences (all)	3	1	
Metabolism and nutrition disorders			
Hypocalcaemia			
subjects affected / exposed	1 / 51 (1.96%)	2 / 50 (4.00%)	
occurrences (all)	1	2	

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