Clinical trial results:
A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial for Duchenne Muscular Dystrophy Using SRP-9001

Summary

EudraCT number	2021-000078-27
Trial protocol	Outside EU/EEA
Global end of trial date	16 August 2023

Results information

Result version number	v1 (current)
This version publication date	06 March 2024
First version publication date	06 March 2024

Trial information

Trial identification

Sponsor protocol code	SRP-9001-102

Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT03769116
WHO universal trial number (UTN)	-

Notes:

Sponsors

Sponsor organisation name	Sarepta Therapeutics, Inc.
Sponsor organisation address	215 First Street, Cambridge, MA, United States, 02142
Public contact	Medical Director, Sarepta Therapeutics, Inc., 1 888-727-3782, SareptAlly@sarepta.com
Scientific contact	Medical Director, Sarepta Therapeutics, Inc., 1 888-727-3782, SareptAlly@sarepta.com

Notes:

Paediatric regulatory details

Is trial part of an agreed paediatric investigation plan (PIP)	Yes
EMA paediatric investigation plan number(s)	EMEA-002677-PIP01-19
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?	Yes

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	16 August 2023
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	16 August 2023
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

The primary objectives of this study are the assessments of the safety and efficacy of intravenous administration of delandistrogene moxeparvovec (SRP-9001) in Duchenne muscular dystrophy participants.

Protection of trial subjects:

Written informed consent from each participant or participant's parent(s) or legal guardian(s), if applicable, and written assent from each participant, if applicable, were obtained before any study-specific screening or baseline period evaluations were performed. The anonymity of participating participant will be maintained to the extent required by applicable laws and in accordance with current Health Insurance Portability and Accountability Act (HIPAA) standards. This study was designed and monitored in accordance with Sponsor procedures, which complied with the ethical principles of Good Clinical Practice (GCP) as required by the major regulatory authorities, and in accordance with the Declaration of Helsinki.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	05 December 2018
Long term follow-up planned	Yes
Long term follow-up rationale	Safety, Efficacy
Long term follow-up duration	5 Years
Independent data monitoring committee (IDMC) involvement?	Yes

Notes:

Population of trial subjects

Subjects enrolled per country

Country: Number of subjects enrolled	United States: 41
Worldwide total number of subjects	41
EEA total number of subjects	0

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)	41
Adolescents (12-17 years)	0
Adults (18-64 years)	0
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

This was a 3-part clinical study of a single dose of delandistrogene moxeparvovec. Participants were randomized to receive delandistrogene moxeparvovec in one of two 48-week periods (Part 1 or Part 2) via a crossover study design. Part 3 was an open-label follow up.

Pre-assignment

Screening details:

No participants were excluded as all randomized participants received study drug in either Part 1 or Part 2.

Period 1

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

Arms

Are arms mutually exclusive?	Yes
Arm title	Delandistrogene Moxeparvovec Switched Over to Placebo

Arm description:

Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Arm type	Experimental
Investigational medicinal product name	delandistrogene moxeparvovec
Investigational medicinal product code	SRP-9001
Other name	SRP-9001, delandistrogene moxeparvovec-rokl, ELEVIDYS
Pharmaceutical forms	Solution for infusion
Routes of administration	Intravenous use

Dosage and administration details:

Single intravenous (IV) infusion

Arm title	Placebo Switched Over to Delandistrogene Moxeparvovec

Arm description:

Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Arm type	Experimental
Investigational medicinal product name	Placebo
Investigational medicinal product code	Placebo
Other name	Lactated Ringer’s solution
Pharmaceutical forms	Solution for infusion
Routes of administration	Intravenous use

Dosage and administration details:

Single IV infusion

Number of subjects in period 1	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec
Started	20	21
Received At Least 1 Dose Of Study Drug	20	21
Completed	20	21

Period 2

Period 2 title	Part 2 - Double Blind
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Double blind
Roles blinded	Subject, Investigator, Carer, Assessor

Arms

Are arms mutually exclusive?	Yes
Arm title	Delandistrogene Moxeparvovec Switched Over to Placebo

Arm description:

Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Arm type	Experimental
Investigational medicinal product name	Placebo
Investigational medicinal product code	Placebo
Other name	Lactated Ringer’s solution
Pharmaceutical forms	Solution for infusion
Routes of administration	Intravenous use

Dosage and administration details:

Single IV infusion

Arm title	Placebo Switched Over to Delandistrogene Moxeparvovec

Arm description:

Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Arm type	Experimental
Investigational medicinal product name	delandistrogene moxeparvovec
Investigational medicinal product code	SRP-9001
Other name	SRP-9001, delandistrogene moxeparvovec-rokl, ELEVIDYS
Pharmaceutical forms	Solution for infusion
Routes of administration	Intravenous use

Dosage and administration details:

Single IV infusion

Number of subjects in period 2	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec
Started	20	21
Received At Least 1 Dose Of Study Drug	20	21
Completed	20	21

Period 3	
Period 3 title	Part 3 - Open Label
Is this the baseline period?	No
Allocation method	Randomised - controlled
Blinding used	Not blinded

Arms	
Are arms mutually exclusive?	Yes
Arm title	Delandistrogene Moxeparvovec Switched Over to Placebo

Arm description:

Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Arm type	No intervention

No investigational medicinal product assigned in this arm

Arm title	Placebo Switched Over to Delandistrogene Moxeparvovec

Arm description:

Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Arm type	No intervention

No investigational medicinal product assigned in this arm

Number of subjects in period 3	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec
Started	20	21
Completed	17	19
Not completed	3	2
Physician decision	1	-
Consent withdrawn by subject	1	-
Study Terminated by Sponsor	1	2

Baseline characteristics

Reporting groups	
Reporting group title	Delandistrogene Moxeparvovec Switched Over to Placebo
Reporting group description:	
Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Reporting group title	Placebo Switched Over to Delandistrogene Moxeparvovec
Reporting group description:	
Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	

Reporting group values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec	Total
Number of subjects	20	21	41
Age categorical Units: Subjects			
In utero	0	0	0
Preterm newborn infants (gestational age < 37 wks)	0	0	0
Newborns (0-27 days)	0	0	0
Infants and toddlers (28 days-23 months)	0	0	0
Children (2-11 years)	20	21	41
Adolescents (12-17 years)	0	0	0
Adults (18-64 years)	0	0	0
From 65-84 years	0	0	0
85 years and over	0	0	0
Age Continuous Units: years			
arithmetic mean	6.29	6.24	
standard deviation	± 1.19	± 1.13	-
Sex: Female, Male Units: participants			
Female	0	0	0
Male	20	21	41
Race (NIH/OMB)			
NIH/OMB = National Institutes of Health/Office of Management and Budget			
Units: Subjects			
American Indian or Alaska Native	0	0	0
Asian	4	1	5
Native Hawaiian or Other Pacific Islander	0	0	0
Black or African American	0	0	0
White	13	17	30
More than one race	0	0	0
Unknown or Not Reported	3	3	6
Ethnicity (NIH/OMB) Units: Subjects			
Hispanic or Latino	1	4	5

Not Hispanic or Latino	19	16	35
Unknown or Not Reported	0	1	1
North Star Ambulatory Assessment (NSAA) Group			
Median score = 21			
Units: Subjects			
NSAA baseline total score ≥ median score	8	15	23
NSAA baseline total score < median score	12	6	18

End points

End points reporting groups

Reporting group title	Delandistrogene Moxeparvovec Switched Over to Placebo
Reporting group description:	
Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Reporting group title	Placebo Switched Over to Delandistrogene Moxeparvovec
Reporting group description:	
Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Reporting group title	Delandistrogene Moxeparvovec Switched Over to Placebo
Reporting group description:	
Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Reporting group title	Placebo Switched Over to Delandistrogene Moxeparvovec
Reporting group description:	
Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Reporting group title	Delandistrogene Moxeparvovec Switched Over to Placebo
Reporting group description:	
Participants received delandistrogene moxeparvovec at Part 1 followed by placebo at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Reporting group title	Placebo Switched Over to Delandistrogene Moxeparvovec
Reporting group description:	
Participants received placebo at Part 1 followed by delandistrogene moxeparvovec at Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.	
Subject analysis set title	Less than 1 Year after Delandistrogene Moxeparvovec Infusion
Subject analysis set type	Safety analysis
Subject analysis set description:	
All participants who were treated with delandistrogene moxeparvovec in Part 1 or Part 2.	
Subject analysis set title	1 to 2 Years after Delandistrogene Moxeparvovec Infusion
Subject analysis set type	Safety analysis
Subject analysis set description:	
All participants who were treated with delandistrogene moxeparvovec in Part 1 or Part 2.	
Subject analysis set title	2 to 3 Years after Delandistrogene Moxeparvovec Infusion
Subject analysis set type	Safety analysis
Subject analysis set description:	
All participants who were treated with delandistrogene moxeparvovec in Part 1 or Part 2.	
Subject analysis set title	3 to 4 Years after Delandistrogene Moxeparvovec Infusion
Subject analysis set type	Safety analysis
Subject analysis set description:	
All participants who were treated with delandistrogene moxeparvovec in Part 1 or Part 2 and who were evaluable.	
Subject analysis set title	More than 4 Years after Delandistrogene Moxeparvovec Infusion
Subject analysis set type	Safety analysis
Subject analysis set description:	
All participants who were treated with delandistrogene moxeparvovec in Part 1 or Part 2 and who were evaluable.	
Subject analysis set title	Intent-to-Treat (ITT) Population
Subject analysis set type	Intention-to-treat

Subject analysis set description:

All randomized participants who received study treatment (delandistrogene moxeparvovec or placebo) during Part 1.

Subject analysis set title	Safety Population
Subject analysis set type	Safety analysis

Subject analysis set description:

All participants who received study treatment during Part 1 or Part 2, with treatment group designated according to the treatment that they actually received.

Primary: Change From Baseline at Week 12 in Quantity of Delandistrogene Moxeparvovec Dystrophin Protein Expression as Measured by Western Blot Adjusted by Muscle Content

End point title	Change From Baseline at Week 12 in Quantity of Delandistrogene Moxeparvovec Dystrophin Protein Expression as Measured by Western Blot Adjusted by Muscle Content

End point description:

Baseline muscle biopsies with ultrasound guidance were performed pre-treatment and post-treatment (Week 12) on all participants. The change from baseline in delandistrogene moxeparvovec dystrophin expression in these muscle biopsy samples was determined by Western Blot. Dystrophin protein was measured and then adjusted based on the percentage of muscle content in the biopsy sample. An increase in protein expression indicates production of the delandistrogene moxeparvovec dystrophin protein. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1.

End point type	Primary

End point timeframe:

Baseline, Week 12 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	20	21		
Units: Percent Normal				
arithmetic mean (standard deviation)				
Baseline	4.23 (± 6.83)	1.91 (± 1.28)		
Change from Baseline	23.82 (± 39.76)	0.14 (± 1.24)		

Statistical analyses

Statistical analysis title	Western Blot Adjusted by Muscle Content Analysis

Statistical analysis description:

Analysis conducted on changes from baseline.

Comparison groups	Delandistrogene Moxeparvovec Switched Over to Placebo v Placebo Switched Over to Delandistrogene Moxeparvovec

Number of subjects included in analysis	41
Analysis specification	Pre-specified
Analysis type	
P-value	< 0.0001
Method	Wilcoxon rank sum test
Parameter estimate	Hodges-Lehmann treatment diff
Point estimate	6.11
Confidence interval	
level	95 %
sides	2-sided
lower limit	2.08
upper limit	12.58

Primary: Change From Baseline at Week 48 in NSAA Total Score

End point title	Change From Baseline at Week 48 in NSAA Total Score

End point description:

The NSAA is a healthcare provider administered scale that rates performance of various motor abilities in ambulant children with Duchenne Muscular Dystrophy and is used to monitor disease progression and treatment effects. During assessment, participants are asked to perform 17 different functional activities that are graded as: 2 - "Normal" - no obvious modification of activity; 1 - Modified method but achieves goal independent of assistance; 0 - Unable to achieve independently. The NSAA total score is defined as the sum of all 17 items, ranging from 0 (worst) to 34 (best). The response vector consists of the change from baseline in NSAA total score at the post-baseline visit. The model includes the covariates of treatment group, visit, treatment group by visit interaction, age group, baseline NSAA total score, and baseline NSAA total score by visit interaction. All covariates are fixed effects in this analysis. An increase in score indicates an improvement in motor function.

End point type	Primary

End point timeframe:

Baseline, Week 48 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	19[1]	21[2]		
Units: Score on a scale				
least squares mean (standard error)	1.7 (± 0.6)	0.9 (± 0.6)		

Notes:

[1] - ITT - those who were evaluable for this end point

[2] - ITT

Statistical analyses

Statistical analysis title	NSAA Total Score Analysis
Comparison groups	Delandistrogene Moxeparvovec Switched Over to Placebo v Placebo Switched Over to Delandistrogene Moxeparvovec

Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.373
Method	Mixed-model for Repeated Measures
Parameter estimate	LSM Change Difference
Point estimate	0.8
Confidence interval	
level	95 %
sides	2-sided
lower limit	-1
upper limit	2.7
Variability estimate	Standard error of the mean
Dispersion value	0.9

Secondary: Change From Baseline at Week 48 in Time to Ascend 4 Steps

End point title	Change From Baseline at Week 48 in Time to Ascend 4 Steps

End point description:

This functional assessment measures the time taken to climb 4 steps. All functional assessments were administered by a clinical evaluator. A decrease in time indicates an improvement in motor function. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1 and who were evaluable for this end point.

End point type	Secondary

End point timeframe:

Baseline, Week 48 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	19	21		
Units: second				
least squares mean (standard error)	0.17 (± 0.26)	0.03 (± 0.26)		

Statistical analyses

No statistical analyses for this end point

Secondary: Change From Baseline at Week 48 in Time of 100-meter Timed Test

End point title	Change From Baseline at Week 48 in Time of 100-meter Timed Test

End point description:

This functional assessment measures the time needed to move 100 meters. All functional assessments

were administered by a clinical evaluator. A decrease in time indicates an improvement in motor function. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1 and who were evaluable for this end point.

End point type	Secondary

End point timeframe:

Baseline, Week 48 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	19	21		
Units: second				
least squares mean (standard error)	4.29 (± 3.92)	6.28 (± 3.83)		

Statistical analyses

No statistical analyses for this end point

Secondary: Change From Baseline at Week 48 in Time of 10-meter Timed Test

End point title	Change From Baseline at Week 48 in Time of 10-meter Timed Test

End point description:

This functional assessment measures the time needed to move 10 meters. All functional assessments were administered by a clinical evaluator. A decrease in time indicates an improvement in motor function. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1 and who were evaluable for this end point.

End point type	Secondary

End point timeframe:

Baseline, Week 48 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	19	21		
Units: second				
least squares mean (standard error)	0.59 (± 0.20)	0.10 (± 0.19)		

Statistical analyses

No statistical analyses for this end point

Secondary: Change From Baseline at Week 48 in Time to Rise From the Floor

End point title	Change From Baseline at Week 48 in Time to Rise From the Floor

End point description:

This functional assessment was performed as a part of the NSAA and measures the time taken to rise from supine to standing. All functional assessments were administered by a clinical evaluator. A decrease in time indicates an improvement in motor function. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1 and who were evaluable for this end point.

End point type	Secondary

End point timeframe:

Baseline, Week 48 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	19	21		
Units: second				
least squares mean (standard error)	-0.15 (± 0.25)	0.35 (± 0.23)		

Statistical analyses

No statistical analyses for this end point

Secondary: Change From Baseline at Week 12 in Quantity of Delandistrogene Moxeparvovec Dystrophin Protein Expression Measured by IF Percent Dystrophin Positive Fibers (PDPF)

End point title	Change From Baseline at Week 12 in Quantity of Delandistrogene Moxeparvovec Dystrophin Protein Expression Measured by IF Percent Dystrophin Positive Fibers (PDPF)

End point description:

Baseline muscle biopsies were performed pre-treatment and post-treatment (Week 12) on all participants. The change from baseline in delandistrogene moxeparvovec dystrophin expression in these muscle biopsy samples was determined by IF PDPF. Automated software was used to quantify the intensity of dystrophin expression post-treatment compared to pre-treatment (Percent Normal). The number of muscle fibers expressing dystrophin was quantified by independent trained evaluators. An increase in IF PDPF indicates increased delandistrogene moxeparvovec dystrophin expression. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1.

End point type	Secondary

End point timeframe:

Baseline, Week 12 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	20	21		
Units: percent dystrophin positive fibers				
arithmetic mean (standard deviation)	23.88 (± 25.58)	5.09 (± 12.96)		

Statistical analyses

No statistical analyses for this end point

Secondary: Change From Baseline at Week 12 in Quantity of Delandistrogene Moxeparvovec Dystrophin Protein Expression Measured by Immunofluorescence (IF) Fiber Intensity

End point title	Change From Baseline at Week 12 in Quantity of Delandistrogene Moxeparvovec Dystrophin Protein Expression Measured by Immunofluorescence (IF) Fiber Intensity

End point description:

Baseline muscle biopsies were performed pre-treatment and post-treatment (Week 12) on all participants. The change from baseline in delandistrogene moxeparvovec dystrophin expression in these muscle biopsy samples was determined using IF fiber intensity. Automated software was used to quantify the intensity of dystrophin expression post-treatment compared to pre-treatment (Percent Normal). The number of muscle fibers expressing dystrophin was quantified by independent trained evaluators. An increase in IF fiber intensity indicates increased delandistrogene moxeparvovec dystrophin expression. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1.

End point type	Secondary

End point timeframe:

Baseline, Week 12 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	20	21		
Units: percent fluorescent expression				
arithmetic mean (standard deviation)	0.06 (± 0.11)	0.00 (± 0.02)		

Statistical analyses

No statistical analyses for this end point

Secondary: Participants Experiencing Adverse Events (AEs) Since Treatment with Delandistrogene Moxeparvovec

End point title	Participants Experiencing Adverse Events (AEs) Since Treatment with Delandistrogene Moxeparvovec

End point description:

Participants experiencing AEs are reported based upon the time to AE onset after delandistrogene moxeparvovec infusion. Each analysis set includes data from both arms and is based upon the Delandistrogene Moxeparvovec-treated Population: all participants who were treated with delandistrogene moxeparvovec in Part 1 or Part 2.
'Delandistrogene Moxeparvovec switched over to Placebo' participants received delandistrogene moxeparvovec in Part 1, followed by placebo in Part 2. AEs experienced by participants during Parts 1, 2, and 3 of the study are reported.
'Placebo switched over to Delandistrogene Moxeparvovec' participants received placebo in Part 1, followed by delandistrogene moxeparvovec in Part 2. AEs experienced by participants during Parts 2 and 3 of the study are reported.
No intervention was administered during Part 3.
A summary of serious and all other non-serious AEs regardless of causality is located in the Reported Adverse Events module.

End point type	Secondary

End point timeframe:

Day 1 through Week 130

End point values	Less than 1 Year after Delandistrogene Moxeparvovec Infusion	1 to 2 Years after Delandistrogene Moxeparvovec Infusion	2 to 3 Years after Delandistrogene Moxeparvovec Infusion	3 to 4 Years after Delandistrogene Moxeparvovec Infusion
Subject group type	Subject analysis set	Subject analysis set	Subject analysis set	Subject analysis set
Number of subjects analysed	41	41	41	30
Units: participants				
Treatment-emergent AE (TEAE)	41	37	33	17
Serious AE (SAE)	5	1	2	0
Treatment-related TEAE	37	2	1	0
Treatment-related SAE	3	0	0	0
Any AE leading to study discontinuation	0	0	0	0
Death	0	0	0	0

End point values	More than 4 Years after Delandistrogene Moxeparvovec Infusion			
Subject group type	Subject analysis set			
Number of subjects analysed	12			
Units: participants				
Treatment-emergent AE (TEAE)	3			
Serious AE (SAE)	0			

Treatment-related TEAE	0			
Treatment-related SAE	0			
Any AE leading to study discontinuation	0			
Death	0			

Statistical analyses

No statistical analyses for this end point

Other pre-specified: Baseline NSAA Total Score by Age Group

End point title	Baseline NSAA Total Score by Age Group

End point description:

The NSAA is a healthcare provider administered scale that rates performance of various motor abilities in ambulant children with Duchenne Muscular Dystrophy and is used to monitor disease progression and treatment effects. During assessment, participants are asked to perform 17 different functional activities that are graded as: 2 - "Normal" - no obvious modification of activity; 1 - Modified method but achieves goal independent of assistance; 0 - Unable to achieve independently. The NSAA total score is defined as the sum of all 17 items, ranging from 0 (worst) to 34 (best). This end point presents only the baseline NSAA total score of the ITT population by the following age groups: 4-5 years old; 6-7 years old. Reported results based upon the ITT Population: all randomized participants who received study treatment during Part 1.

End point type	Other pre-specified

End point timeframe:

Baseline

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	20	21		
Units: Score on a scale				
arithmetic mean (standard deviation)				
Age Group: 4-5 years old	20.1 (± 1.9)	20.4 (± 2.7)		
Age Group: 6-7 years old	19.6 (± 4.1)	24.0 (± 2.9)		

Statistical analyses

No statistical analyses for this end point

Other pre-specified: Change From Baseline at Week 48 in NSAA Total Score by Age Group

End point title	Change From Baseline at Week 48 in NSAA Total Score by Age Group

End point description:

The NSAA is a healthcare provider administered scale that rates performance of various motor abilities

in ambulant children with Duchenne Muscular Dystrophy and is used to monitor disease progression and treatment effects. During assessment, participants are asked to perform 17 different functional activities that are graded as: 2 - "Normal" - no obvious modification of activity; 1 - Modified method but achieves goal independent of assistance; 0 - Unable to achieve independently. The NSAA total score is defined as the sum of all 17 items, ranging from 0 (worst) to 34 (best). The response vector consists of the change from baseline in NSAA total score at the post-baseline visit. The model includes the covariates of treatment group, visit, treatment group by visit interaction, age group, baseline NSAA total score, and baseline NSAA total score by visit interaction. All covariates are fixed effects in this analysis. An increase in score indicates an improvement in motor function.

End point type	Other pre-specified

End point timeframe:

Baseline, Week 48 (Part 1)

End point values	Delandistrogene Moxeparvovec Switched Over to Placebo	Placebo Switched Over to Delandistrogene Moxeparvovec		
Subject group type	Reporting group	Reporting group		
Number of subjects analysed	19[3]	21[4]		
Units: Score on a scale				
least squares mean (standard error)				
Age Group: 4-5 years old	4.3 (± 0.6)	1.9 (± 0.6)		
Age Group: 6-7 years old	-0.2 (± 0.7)	0.5 (± 0.7)		

Notes:

[3] - ITT - those who were evaluable for this end point

[4] - ITT

Statistical analyses

Statistical analysis title	NSAA Total Score Analysis: 6-7 Years Old

Statistical analysis description:

Change from baseline - Age Group: 6-7 years old

Comparison groups	Delandistrogene Moxeparvovec Switched Over to Placebo v Placebo Switched Over to Delandistrogene Moxeparvovec
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.5384
Method	Mixed-model for Repeated Measures
Parameter estimate	LSM Change Difference
Point estimate	-0.7
Confidence interval	
level	95 %
sides	2-sided
lower limit	-3
upper limit	1.6
Variability estimate	Standard error of the mean
Dispersion value	1.1

Statistical analysis title	NSAA Total Score Analysis: 4-5 Years Old
Statistical analysis description:	
Change from baseline - Age Group: 4-5 years old	
Comparison groups	Delandistrogene Moxeparvovec Switched Over to Placebo v Placebo Switched Over to Delandistrogene Moxeparvovec
Number of subjects included in analysis	40
Analysis specification	Pre-specified
Analysis type	
P-value	= 0.0172
Method	Mixed-model for Repeated Measures
Parameter estimate	LSM Change Difference
Point estimate	2.5
Confidence interval	
level	95 %
sides	2-sided
lower limit	0.5
upper limit	4.4
Variability estimate	Standard error of the mean
Dispersion value	0.9

Adverse events

Adverse events information

Timeframe for reporting adverse events:

Day 1 through Week 130

Adverse event reporting additional description:

This was a 3-part clinical study of a single dose of delandistrogene moxeparvovec. Participants were randomized to receive delandistrogene moxeparvovec in one of two 48-week periods (Part 1 or Part 2) via a crossover study design. Part 3 was an open-label follow up. All reported adverse events are based upon the Safety Population.

Assessment type	Systematic

Dictionary used

Dictionary name	MedDRA
Dictionary version	24.1

Reporting groups

Reporting group title	Part 1: Delandistrogene Moxeparvovec

Reporting group description:

Participants received delandistrogene moxeparvovec during Part 1.

Reporting group title	Part 1: Placebo

Reporting group description:

Participants received placebo during Part 1.

Reporting group title	Part 3: Placebo Switched Over to Delandistrogene Moxeparvovec

Reporting group description:

Participants received matching placebo during Part 1 followed by delandistrogene moxeparvovec during Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Reporting group title	Part 2: Placebo Switched Over to Delandistrogene Moxeparvovec

Reporting group description:

Participants who received placebo during Part 1 received delandistrogene moxeparvovec during Part 2.

Reporting group title	Part 3: Delandistrogene Moxeparvovec Switched Over to Placebo

Reporting group description:

Participants received delandistrogene moxeparvovec during Part 1 followed by matching placebo during Part 2 followed by an open-label extension at Part 3. No intervention was administered during Part 3.

Reporting group title	Part 2: Delandistrogene Moxeparvovec Switched Over to Placebo

Reporting group description:

Participants who received delandistrogene moxeparvovec during Part 1 received placebo during Part 2.

Serious adverse events	Part 1: Delandistrogene Moxeparvovec	Part 1: Placebo	Part 3: Placebo Switched Over to Delandistrogene Moxeparvovec
Total subjects affected by serious adverse events			
subjects affected / exposed	3 / 20 (15.00%)	2 / 21 (9.52%)	2 / 21 (9.52%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events			
Injury, poisoning and procedural complications			

Humerus fracture			
subjects affected / exposed	0 / 20 (0.00%)	1 / 21 (4.76%)	0 / 21 (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
Femur fracture			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	1 / 21 (4.76%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Hepatobiliary disorders			
Hypertransaminasaemia			
subjects affected / exposed	1 / 20 (5.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Liver injury			
subjects affected / exposed	1 / 20 (5.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences causally related to treatment / all	1 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Musculoskeletal and connective tissue disorders			
Rhabdomyolysis			
subjects affected / exposed	2 / 20 (10.00%)	1 / 21 (4.76%)	1 / 21 (4.76%)
occurrences causally related to treatment / all	2 / 2	1 / 1	0 / 1
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Infections and infestations			
Appendicitis			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (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

Serious adverse events	Part 2: Placebo Switched Over to Delandistrogene Moxeparvovec	Part 3: Delandistrogene Moxeparvovec Switched Over to Placebo	Part 2: Delandistrogene Moxeparvovec Switched Over to Placebo
Total subjects affected by serious adverse events			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	2 / 20 (10.00%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events			

Injury, poisoning and procedural complications			
Humerus fracture			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (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
Femur fracture			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 2
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0
Hepatobiliary disorders			
Hypertransaminasaemia			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (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
Liver injury			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (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
Musculoskeletal and connective tissue disorders			
Rhabdomyolysis			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (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
Infections and infestations			
Appendicitis			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences causally related to treatment / all	0 / 1	0 / 0	0 / 0
deaths causally related to treatment / all	0 / 0	0 / 0	0 / 0

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

Non-serious adverse events	Part 1: Delandistrogene Moxeparvovec	Part 1: Placebo	Part 3: Placebo Switched Over to Delandistrogene Moxeparvovec
Total subjects affected by non-serious adverse events			
subjects affected / exposed	20 / 20 (100.00%)	21 / 21 (100.00%)	19 / 21 (90.48%)
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Skin papilloma			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
General disorders and administration site conditions			
Pyrexia			
subjects affected / exposed	4 / 20 (20.00%)	1 / 21 (4.76%)	3 / 21 (14.29%)
occurrences (all)	5	1	3
Vessel puncture site haemorrhage			
subjects affected / exposed	2 / 20 (10.00%)	1 / 21 (4.76%)	0 / 21 (0.00%)
occurrences (all)	2	1	0
Infusion site extravasation			
subjects affected / exposed	0 / 20 (0.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	0	2	0
Catheter site haemorrhage			
subjects affected / exposed	0 / 20 (0.00%)	1 / 21 (4.76%)	0 / 21 (0.00%)
occurrences (all)	0	1	0
Fatigue			
subjects affected / exposed	1 / 20 (5.00%)	0 / 21 (0.00%)	2 / 21 (9.52%)
occurrences (all)	1	0	2
Respiratory, thoracic and mediastinal disorders			
Nasal congestion			
subjects affected / exposed	3 / 20 (15.00%)	2 / 21 (9.52%)	2 / 21 (9.52%)
occurrences (all)	3	2	2
Rhinorrhoea			
subjects affected / exposed	4 / 20 (20.00%)	3 / 21 (14.29%)	0 / 21 (0.00%)
occurrences (all)	5	3	0
Cough			
subjects affected / exposed	9 / 20 (45.00%)	6 / 21 (28.57%)	4 / 21 (19.05%)
occurrences (all)	10	8	4
Epistaxis			

subjects affected / exposed	2 / 20 (10.00%)	3 / 21 (14.29%)	1 / 21 (4.76%)
occurrences (all)	2	6	1
Psychiatric disorders			
Irritability			
subjects affected / exposed	3 / 20 (15.00%)	1 / 21 (4.76%)	2 / 21 (9.52%)
occurrences (all)	3	1	2
Sleep disorder			
subjects affected / exposed	3 / 20 (15.00%)	1 / 21 (4.76%)	1 / 21 (4.76%)
occurrences (all)	3	1	1
Anxiety			
subjects affected / exposed	0 / 20 (0.00%)	1 / 21 (4.76%)	1 / 21 (4.76%)
occurrences (all)	0	1	1
Affect lability			
subjects affected / exposed	1 / 20 (5.00%)	1 / 21 (4.76%)	1 / 21 (4.76%)
occurrences (all)	1	1	1
Investigations			
Gamma-glutamyltransferase increased			
subjects affected / exposed	5 / 20 (25.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	5	0	0
Blood bilirubin increased			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Weight increased			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Glutamate dehydrogenase increased			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	0	0	0
White blood cell count decreased			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	0	0	0
Injury, poisoning and procedural complications			
Procedural pain			
subjects affected / exposed	5 / 20 (25.00%)	7 / 21 (33.33%)	2 / 21 (9.52%)
occurrences (all)	5	7	2
Limb injury			

subjects affected / exposed	3 / 20 (15.00%)	1 / 21 (4.76%)	1 / 21 (4.76%)
occurrences (all)	3	1	1
Arthropod bite			
subjects affected / exposed	1 / 20 (5.00%)	3 / 21 (14.29%)	0 / 21 (0.00%)
occurrences (all)	1	3	0
Post procedural contusion			
subjects affected / exposed	1 / 20 (5.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	1	2	0
Incision site haemorrhage			
subjects affected / exposed	6 / 20 (30.00%)	4 / 21 (19.05%)	0 / 21 (0.00%)
occurrences (all)	6	5	0
Skin abrasion			
subjects affected / exposed	4 / 20 (20.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	4	3	0
Lip injury			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Craniocerebral injury			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Sunburn			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	2 / 21 (9.52%)
occurrences (all)	0	0	2
Cardiac disorders			
Cardiomyopathy			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	2 / 21 (9.52%)
occurrences (all)	0	0	2
Nervous system disorders			
Headache			
subjects affected / exposed	3 / 20 (15.00%)	6 / 21 (28.57%)	3 / 21 (14.29%)
occurrences (all)	3	13	7
Lethargy			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	0	0	0
Blood and lymphatic system disorders			

Thrombocytopenia			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	0	0	0
Anaemia			
subjects affected / exposed	0 / 20 (0.00%)	1 / 21 (4.76%)	2 / 21 (9.52%)
occurrences (all)	0	1	2
Ear and labyrinth disorders			
Ear pain			
subjects affected / exposed	2 / 20 (10.00%)	3 / 21 (14.29%)	0 / 21 (0.00%)
occurrences (all)	2	4	0
Eye disorders			
Cataract			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	0	0	0
Gastrointestinal disorders			
Nausea			
subjects affected / exposed	7 / 20 (35.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	9	3	0
Vomiting			
subjects affected / exposed	13 / 20 (65.00%)	7 / 21 (33.33%)	3 / 21 (14.29%)
occurrences (all)	26	13	3
Abdominal pain			
subjects affected / exposed	5 / 20 (25.00%)	2 / 21 (9.52%)	1 / 21 (4.76%)
occurrences (all)	6	5	1
Abdominal pain upper			
subjects affected / exposed	6 / 20 (30.00%)	4 / 21 (19.05%)	0 / 21 (0.00%)
occurrences (all)	6	4	0
Constipation			
subjects affected / exposed	3 / 20 (15.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	3	0	0
Diarrhoea			
subjects affected / exposed	3 / 20 (15.00%)	2 / 21 (9.52%)	2 / 21 (9.52%)
occurrences (all)	3	2	2
Gastrooesophageal reflux disease			
subjects affected / exposed	1 / 20 (5.00%)	0 / 21 (0.00%)	1 / 21 (4.76%)
occurrences (all)	1	0	1
Toothache			

subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	1 / 21 (4.76%)
occurrences (all)	0	0	1
Skin and subcutaneous tissue disorders			
Dermatitis			
subjects affected / exposed	0 / 20 (0.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	0	2	0
Ecchymosis			
subjects affected / exposed	7 / 20 (35.00%)	4 / 21 (19.05%)	0 / 21 (0.00%)
occurrences (all)	10	4	0
Urticaria			
subjects affected / exposed	0 / 20 (0.00%)	3 / 21 (14.29%)	1 / 21 (4.76%)
occurrences (all)	0	3	1
Rash			
subjects affected / exposed	1 / 20 (5.00%)	3 / 21 (14.29%)	0 / 21 (0.00%)
occurrences (all)	1	3	0
Dermatitis contact			
subjects affected / exposed	0 / 20 (0.00%)	3 / 21 (14.29%)	0 / 21 (0.00%)
occurrences (all)	0	3	0
Renal and urinary disorders			
Pollakiuria			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Dysuria			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Ketonuria			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	0	0	0
Proteinuria			
subjects affected / exposed	1 / 20 (5.00%)	1 / 21 (4.76%)	0 / 21 (0.00%)
occurrences (all)	1	1	0
Endocrine disorders			
Cushingoid			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	2 / 21 (9.52%)
occurrences (all)	0	0	2
Musculoskeletal and connective tissue disorders			

Arthralgia			
subjects affected / exposed	5 / 20 (25.00%)	1 / 21 (4.76%)	3 / 21 (14.29%)
occurrences (all)	6	1	3
Pain in extremity			
subjects affected / exposed	5 / 20 (25.00%)	5 / 21 (23.81%)	4 / 21 (19.05%)
occurrences (all)	6	7	4
Back pain			
subjects affected / exposed	1 / 20 (5.00%)	1 / 21 (4.76%)	3 / 21 (14.29%)
occurrences (all)	1	1	4
Myalgia			
subjects affected / exposed	1 / 20 (5.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	1	0	0
Infections and infestations			
Upper respiratory tract infection			
subjects affected / exposed	13 / 20 (65.00%)	13 / 21 (61.90%)	9 / 21 (42.86%)
occurrences (all)	27	29	18
Viral infection			
subjects affected / exposed	8 / 20 (40.00%)	9 / 21 (42.86%)	3 / 21 (14.29%)
occurrences (all)	10	11	3
Gastroenteritis			
subjects affected / exposed	3 / 20 (15.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	3	2	0
Sinusitis			
subjects affected / exposed	2 / 20 (10.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	2	2	0
Otitis media			
subjects affected / exposed	1 / 20 (5.00%)	3 / 21 (14.29%)	0 / 21 (0.00%)
occurrences (all)	1	3	0
Nasopharyngitis			
subjects affected / exposed	0 / 20 (0.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	0	2	0
Rhinovirus infection			
subjects affected / exposed	2 / 20 (10.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	2	0	0
Pharyngitis streptococcal			

subjects affected / exposed	1 / 20 (5.00%)	1 / 21 (4.76%)	2 / 21 (9.52%)
occurrences (all)	1	1	2
Influenza			
subjects affected / exposed	1 / 20 (5.00%)	0 / 21 (0.00%)	3 / 21 (14.29%)
occurrences (all)	1	0	3
COVID-19			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	9 / 21 (42.86%)
occurrences (all)	0	0	11
Gastroenteritis viral			
subjects affected / exposed	1 / 20 (5.00%)	1 / 21 (4.76%)	4 / 21 (19.05%)
occurrences (all)	3	1	5
Metabolism and nutrition disorders			
Decreased appetite			
subjects affected / exposed	8 / 20 (40.00%)	0 / 21 (0.00%)	0 / 21 (0.00%)
occurrences (all)	10	0	0
Increased appetite			
subjects affected / exposed	0 / 20 (0.00%)	2 / 21 (9.52%)	0 / 21 (0.00%)
occurrences (all)	0	2	0
Dehydration			
subjects affected / exposed	0 / 20 (0.00%)	0 / 21 (0.00%)	2 / 21 (9.52%)
occurrences (all)	0	0	2
Vitamin D deficiency			
subjects affected / exposed	0 / 20 (0.00%)	1 / 21 (4.76%)	2 / 21 (9.52%)
occurrences (all)	0	1	2

Non-serious adverse events	Part 2: Placebo Switched Over to Delandistrogene Moxeparvovec	Part 3: Delandistrogene Moxeparvovec Switched Over to Placebo	Part 2: Delandistrogene Moxeparvovec Switched Over to Placebo
Total subjects affected by non-serious adverse events			
subjects affected / exposed	21 / 21 (100.00%)	18 / 20 (90.00%)	20 / 20 (100.00%)
Neoplasms benign, malignant and unspecified (incl cysts and polyps)			
Skin papilloma			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	2	0	1
General disorders and administration site conditions			

Pyrexia			
subjects affected / exposed	6 / 21 (28.57%)	1 / 20 (5.00%)	2 / 20 (10.00%)
occurrences (all)	6	1	2
Vessel puncture site haemorrhage			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	2	0	0
Infusion site extravasation			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Catheter site haemorrhage			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	2	0	1
Fatigue			
subjects affected / exposed	3 / 21 (14.29%)	0 / 20 (0.00%)	3 / 20 (15.00%)
occurrences (all)	3	0	3
Respiratory, thoracic and mediastinal disorders			
Nasal congestion			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Rhinorrhoea			
subjects affected / exposed	2 / 21 (9.52%)	3 / 20 (15.00%)	4 / 20 (20.00%)
occurrences (all)	2	5	4
Cough			
subjects affected / exposed	1 / 21 (4.76%)	2 / 20 (10.00%)	3 / 20 (15.00%)
occurrences (all)	1	2	3
Epistaxis			
subjects affected / exposed	2 / 21 (9.52%)	1 / 20 (5.00%)	0 / 20 (0.00%)
occurrences (all)	6	1	0
Psychiatric disorders			
Irritability			
subjects affected / exposed	9 / 21 (42.86%)	1 / 20 (5.00%)	5 / 20 (25.00%)
occurrences (all)	9	1	5
Sleep disorder			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	1	0	2
Anxiety			

subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	2	0	1
Affect lability			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	2	0	0
Investigations			
Gamma-glutamyltransferase increased			
subjects affected / exposed	6 / 21 (28.57%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	6	0	0
Blood bilirubin increased			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	2	0	0
Weight increased			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	2	0	2
Glutamate dehydrogenase increased			
subjects affected / exposed	3 / 21 (14.29%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	3	0	0
White blood cell count decreased			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	5	0	0
Injury, poisoning and procedural complications			
Procedural pain			
subjects affected / exposed	9 / 21 (42.86%)	0 / 20 (0.00%)	6 / 20 (30.00%)
occurrences (all)	9	0	6
Limb injury			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	0	0	1
Arthropod bite			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	1	0	1
Post procedural contusion			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	2	0	2
Incision site haemorrhage			

subjects affected / exposed	5 / 21 (23.81%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	5	0	2
Skin abrasion			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	1	0	2
Lip injury			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Craniocerebral injury			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Sunburn			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Cardiac disorders			
Cardiomyopathy			
subjects affected / exposed	0 / 21 (0.00%)	2 / 20 (10.00%)	2 / 20 (10.00%)
occurrences (all)	0	2	2
Nervous system disorders			
Headache			
subjects affected / exposed	3 / 21 (14.29%)	1 / 20 (5.00%)	3 / 20 (15.00%)
occurrences (all)	5	1	7
Lethargy			
subjects affected / exposed	3 / 21 (14.29%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	3	0	0
Blood and lymphatic system disorders			
Thrombocytopenia			
subjects affected / exposed	5 / 21 (23.81%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	5	0	0
Anaemia			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Ear and labyrinth disorders			
Ear pain			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	0	0	1
Eye disorders			

Cataract			
subjects affected / exposed	0 / 21 (0.00%)	2 / 20 (10.00%)	0 / 20 (0.00%)
occurrences (all)	0	2	0
Gastrointestinal disorders			
Nausea			
subjects affected / exposed	11 / 21 (52.38%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	14	0	3
Vomiting			
subjects affected / exposed	16 / 21 (76.19%)	1 / 20 (5.00%)	0 / 20 (0.00%)
occurrences (all)	33	1	0
Abdominal pain			
subjects affected / exposed	1 / 21 (4.76%)	1 / 20 (5.00%)	1 / 20 (5.00%)
occurrences (all)	2	1	1
Abdominal pain upper			
subjects affected / exposed	8 / 21 (38.10%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	10	0	2
Constipation			
subjects affected / exposed	2 / 21 (9.52%)	2 / 20 (10.00%)	0 / 20 (0.00%)
occurrences (all)	2	2	0
Diarrhoea			
subjects affected / exposed	3 / 21 (14.29%)	2 / 20 (10.00%)	2 / 20 (10.00%)
occurrences (all)	3	2	2
Gastrooesophageal reflux disease			
subjects affected / exposed	4 / 21 (19.05%)	2 / 20 (10.00%)	2 / 20 (10.00%)
occurrences (all)	5	2	2
Toothache			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	2	0	0
Skin and subcutaneous tissue disorders			
Dermatitis			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Ecchymosis			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	4 / 20 (20.00%)
occurrences (all)	2	0	4
Urticaria			

subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	3	0	0
Rash			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	2	0	1
Dermatitis contact			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	1	0	0
Renal and urinary disorders			
Pollakiuria			
subjects affected / exposed	0 / 21 (0.00%)	1 / 20 (5.00%)	0 / 20 (0.00%)
occurrences (all)	0	1	0
Dysuria			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Ketonuria			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	3	0	1
Proteinuria			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	2	0	0
Endocrine disorders			
Cushingoid			
subjects affected / exposed	1 / 21 (4.76%)	1 / 20 (5.00%)	2 / 20 (10.00%)
occurrences (all)	1	1	2
Musculoskeletal and connective tissue disorders			
Arthralgia			
subjects affected / exposed	2 / 21 (9.52%)	0 / 20 (0.00%)	2 / 20 (10.00%)
occurrences (all)	2	0	2
Pain in extremity			
subjects affected / exposed	6 / 21 (28.57%)	3 / 20 (15.00%)	7 / 20 (35.00%)
occurrences (all)	7	3	8
Back pain			
subjects affected / exposed	1 / 21 (4.76%)	2 / 20 (10.00%)	1 / 20 (5.00%)
occurrences (all)	1	2	1
Myalgia			

subjects affected / exposed	2 / 21 (9.52%)	1 / 20 (5.00%)	0 / 20 (0.00%)
occurrences (all)	2	1	0
Infections and infestations			
Upper respiratory tract infection			
subjects affected / exposed	7 / 21 (33.33%)	9 / 20 (45.00%)	8 / 20 (40.00%)
occurrences (all)	9	18	9
Viral infection			
subjects affected / exposed	0 / 21 (0.00%)	2 / 20 (10.00%)	3 / 20 (15.00%)
occurrences (all)	0	2	4
Gastroenteritis			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	1	0	0
Sinusitis			
subjects affected / exposed	0 / 21 (0.00%)	1 / 20 (5.00%)	0 / 20 (0.00%)
occurrences (all)	0	1	0
Otitis media			
subjects affected / exposed	0 / 21 (0.00%)	1 / 20 (5.00%)	1 / 20 (5.00%)
occurrences (all)	0	1	1
Nasopharyngitis			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Rhinovirus infection			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	0	0	1
Pharyngitis streptococcal			
subjects affected / exposed	0 / 21 (0.00%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	0	0	0
Influenza			
subjects affected / exposed	1 / 21 (4.76%)	2 / 20 (10.00%)	0 / 20 (0.00%)
occurrences (all)	1	3	0
COVID-19			
subjects affected / exposed	2 / 21 (9.52%)	9 / 20 (45.00%)	0 / 20 (0.00%)
occurrences (all)	2	9	0
Gastroenteritis viral			
subjects affected / exposed	3 / 21 (14.29%)	3 / 20 (15.00%)	2 / 20 (10.00%)
occurrences (all)	3	4	3

Metabolism and nutrition disorders			
Decreased appetite			
subjects affected / exposed	15 / 21 (71.43%)	0 / 20 (0.00%)	1 / 20 (5.00%)
occurrences (all)	18	0	1
Increased appetite			
subjects affected / exposed	4 / 21 (19.05%)	0 / 20 (0.00%)	3 / 20 (15.00%)
occurrences (all)	4	0	3
Dehydration			
subjects affected / exposed	1 / 21 (4.76%)	0 / 20 (0.00%)	0 / 20 (0.00%)
occurrences (all)	1	0	0
Vitamin D deficiency			
subjects affected / exposed	0 / 21 (0.00%)	1 / 20 (5.00%)	1 / 20 (5.00%)
occurrences (all)	0	1	1

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
04 June 2019	- Increased the sample size from 24 participants to 44 participants in order to increase the power of the study regarding the NSAA end point. Note: This amendment (Amendment 3) was internally finalized on 04 June 2019 and was sent to sites; however, this amendment was not implemented or submitted to any regulatory agency. Before submitting to the Food and Drug Administration, the Sponsor decided that additional changes were needed, and since the site had already received a version labeled Amendment 3, to avoid confusion the updated version was labeled Amendment 4 when submitted and included additional changes.
02 July 2019	- Removed the requirement to use an enzyme-linked immunospot assay as a means of guiding the post-infusion steroid taper - Updated the sample size determination text - Added a Week 10 visit to both parts of the study
25 September 2019	- Elevated the assessment of ambulatory function as measured by NSAA (total score) to a co-primary end point - Updated language around steroid dose tapering - Added language regarding adverse events of special interest - Clarified the dose concentration to align with the Investigator's Brochure and added explanation of the update to the quantitative polymerase chain reaction method for titering (Sponsor's method using a linear standard)
27 August 2020	- Extended the long-term safety follow-up to 5 years and split the study into 3 parts (two 48-week double-blind periods and one open-label follow-up period) - Defined evaluation of delandistrogene moxeparvovec dystrophin expression from delandistrogene moxeparvovec at 12 weeks post-dosing and effect of delandistrogene moxeparvovec on physical functional assessments as assessed by the NSAA as primary end points (instead of co-primary) - Added a long-term safety and efficacy objective with corresponding end points for Part 3 (open-label extension) of the study
12 April 2023	- Provided participants in Part 3 of the study with the option of continuing their follow-up in a long-term extension study. The long-term extension study was designed to provide a uniform approach to monitoring long-term safety and efficacy in participants who received an infusion of delandistrogene moxeparvovec in a clinical trial. Participants must have completed the Week 130 visit at a minimum before rolling over into the long-term extension study. After completion of the Week 130 visit, if participants decided not to continue their follow-up in the long-term extension study, participants completed an end of study visit.

Notes:

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.

Caution should be taken in interpreting the treatment effect on the 6-7 years-old age group due to differences in baseline prognostic functional characteristics for certain assessments in treated versus placebo in Part 1.