



# Study of Nusinersen (BIIB058) in Participants With Spinal Muscular Atrophy

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## Main Information

**Primary registry identifying number**

LBCTR2021064778

**Protocol number**

232SM203

**MOH registration number**

**Study registered at the country of origin**

Yes

**Study registered at the country of origin: Specify**

**Type of registration**

Prospective

**Type of registration: Justify**

N/A

**Date of registration in national regulatory agency**

**Primary sponsor**

Biogen Idec Research Limited

**Primary sponsor: Country of origin**

United Kingdom

**Date of registration in primary registry**

18/09/2021

**Date of registration in national regulatory agency**

**Public title**

Study of Nusinersen (BIIB058) in Participants With Spinal Muscular Atrophy

**Acronym**

**Scientific title**

Escalating Dose and Randomized, Controlled Study of Nusinersen (BIIB058) in Participants With Spinal Muscular Atrophy

**Acronym**

**Brief summary of the study: English**

The primary objectives of this study are to examine the clinical efficacy of nusinersen administered intrathecally at higher doses to participants with SMA, as measured by the change in Children's Hospital of Philadelphia Infant Test of Neuromuscular Disorders (CHOP INTEND) total score (Part B); to examine the safety and tolerability of nusinersen administered intrathecally at higher doses to participants with spinal muscular atrophy (SMA) (Parts A and C). The secondary objectives of this study are to examine the clinical efficacy of nusinersen administered intrathecally at higher doses to participants with SMA (Parts A, B, and C); to examine the effect of nusinersen administered intrathecally at higher doses to participants with SMA (Parts A and C); to examine the safety and tolerability of nusinersen administered intrathecally at higher doses to participants with SMA, to examine the effect of nusinersen administered intrathecally at higher doses compared to the currently approved dose in participants with SMA (Part B).

Subjects in Lebanon will participate in Part B.

**Brief summary of the study: Arabic**



المعطى داخل القراب بجرعات أعلى للمشاركين الذين nusinersen تتمثل الأهداف الأساسية لهذه الدراسة في فحص الفعالية السريرية ليعانون من ضمور العضلات الشوكي ، كما تم قياسه بالتغيير في اختبار الأطفال للاضطرابات العصبية العضلية في مستشفى فيلادلفيا للأطفال المعطى داخل القراب بجرعات أعلى للمشاركين المصابين بضمور nusinersen (الجزء ب)، لفحص سلامة وتحمل (CHOP INTEND) (C). و A الجزأين (SMA) (العضلات الشوكي المعطى داخل القراب بجرعات أعلى للمشاركين المصابين nusinersen تتمثل الأهداف الثانوية لهذه الدراسة في فحص الفعالية السريرية ليعانون من ضمور العضلات الشوكي ، كما تم قياسه بالتغيير في اختبار الأطفال للاضطرابات العصبية العضلية في مستشفى فيلادلفيا للأطفال المعطى داخل القراب بجرعات أعلى للمشاركين المصابين nusinersen ؛ لفحص تأثير (C و B و A) (الجزء ب) بضمور العضلات الشوكي المعطى داخل القراب بجرعات أعلى للمشاركين المصابين nusinersen ؛ لفحص سلامة وتحمل (C و A) (الجزأين) بضمور العضلات الشوكي المعطى داخل القراب بجرعات أعلى مقارنة بالجرعة المعتمدة حالياً في المشاركين nusinersen بضمور العضلات الشوكي ، لفحص تأثير المصابين بضمور العضلات الشوكي (الجزء ب). المشتركين في لبنان سيشاركون في الجزء ب.

## Health conditions/problem studied: Specify

Spinal Muscular Atrophy

## Interventions: Specify

Drug: Nusinersen

Administered as specified in the treatment arm

Other Name: BIIB058

## Key inclusion and exclusion criteria: Inclusion criteria

Part A, B and C:

- Genetic documentation of 5q SMA (homozygous gene deletion, mutation, or compound heterozygote)

Part A:

- Onset of clinical signs and symptoms consistent with SMA at > 6 months (> 180 days) of age (i.e., later-onset SMA)

- Age 2 to ≤ 15 years, inclusive, at the time of informed consent

Part B:

- Participants with SMA symptom onset ≤ 6 months (≤ 180 days) of age (infantile onset) should have age > 1 week to ≤ 7 months (≤ 210 days) at the time of informed consent

- Participants with SMA symptom onset > 6 months (> 180 days) of age (later onset):

\*Age 2 to < 10 years at the time of informed consent

\*Can sit independently but has never had the ability to walk independently

\*HFMSE score ≥ 10 and ≤ 54 at Screening

Part C:

- Participants ≥ 18 years of age at Screening must be ambulatory

- Currently on nusinersen treatment at the time of Screening, with the first dose being at least 1 year prior to Screening

## Key inclusion and exclusion criteria: Gender

Both

## Key inclusion and exclusion criteria: Specify gender

## Key inclusion and exclusion criteria: Age minimum

0

## Key inclusion and exclusion criteria: Age maximum

10

## Key inclusion and exclusion criteria: Exclusion criteria

Part A, B and C:

- Presence of an untreated or inadequately treated active infection requiring systemic antiviral or antimicrobial therapy at any time during the Screening period

- Presence of an implanted shunt for the drainage of cerebrospinal fluid (CSF) or of an implanted central nervous system (CNS) catheter

- Hospitalization for surgery, pulmonary event, or nutritional support within 2 months prior to Screening or planned within 12 months after the participant's first dose.

Part A:

- Respiratory insufficiency, defined by the medical necessity for invasive or noninvasive ventilation for > 6 hours during a 24-hour period, at Screening

- Medical necessity for a gastric feeding tube

- Treatment with an investigational drug given for the treatment of SMA, biological agent, or device within 30 days or 5 half-lives of the agent, whichever is longer, prior to Screening or anytime during the study; any prior or current treatment with any survival motor neuron-2 (SMN2)-splicing modifier or gene therapy; or prior antisense oligonucleotide treatment, or cell transplantation.

Part B:

- Treatment with an investigational drug given for the treatment of SMA, biological agent, or device within 30 days or 5 half-lives of the agent, whichever is longer, prior to Screening or anytime during the study; any prior or current treatment with any SMN2-splicing modifier or gene therapy; or prior antisense oligonucleotide treatment, or cell transplantation

- Participants with SMA symptom onset > 6 months (> 180 days) of age (later onset):

\*Respiratory insufficiency, defined by the medical necessity for invasive or noninvasive ventilation for > 6 hours during a 24-hour period, at Screening

\*Medical necessity for a gastric feeding tube

\*Participants with SMA symptom onset ≤ 6 months (≤ 180 days) of age (infantile-onset): Signs or symptoms of SMA present at birth or within



the first week after birth.

Part C:

- Concurrent or previous participation and/or administration of nusinersen in another clinical study

NOTE: Other protocol defined Inclusion/Exclusion criteria may apply.

**Type of study**

Interventional

**Type of intervention**

Pharmaceutical

**Type of intervention: Specify type**

N/A

**Trial scope**

Other

**Trial scope: Specify scope**

**Study design: Allocation**

Randomized controlled trial

**Study design: Masking**

Blinded (masking used)

**Study design: Control**

Active

**Study phase**

2 to 3

**Study design: Purpose**

Treatment

**Study design: Specify purpose**

N/A

**Study design: Assignment**

Other

**Study design: Specify assignment**

Sequential

**IMP has market authorization**

Yes, Worldwide

**IMP has market authorization: Specify**

US, European countries

**Name of IMP**

Nusinersen

**Year of authorization**

2017

**Month of authorization**

5

**Type of IMP**

Others

**Pharmaceutical class**

Antisense oligonucleotide inhibitor

**Therapeutic indication**

Spinal Muscular Atrophy

**Therapeutic benefit**

Nusinersen is an antisense oligonucleotide administered intrathecally via lumbar puncture (LP); it increases survival motor neuron (SMN) protein expression and significantly improves motor function in patients with spinal muscular atrophy (SMA).

**Study model**

N/A

**Study model: Explain model**

N/A

**Study model: Specify model**

N/A

**Time perspective**

N/A

**Time perspective: Explain time perspective**



<b>Time perspective: Specify perspective</b> N/A	N/A
<b>Target follow-up duration</b>	<b>Target follow-up duration: Unit</b>
<b>Number of groups/cohorts</b>	
<b>Biospecimen retention</b> Samples without DNA	<b>Biospecimen description</b> PK, Biomarker, and Immunogenicity samples will be retained for long-term storage (25 years). Safety samples and SMA genetic samples will be analyzed and destroyed after analysis.
<b>Target sample size</b> 2	<b>Actual enrollment target size</b>
<b>Date of first enrollment: Type</b> Anticipated	<b>Date of first enrollment: Date</b> 01/08/2021
<b>Date of study closure: Type</b> Anticipated	<b>Date of study closure: Date</b> 30/09/2023
<b>Recruitment status</b> Pending	<b>Recruitment status: Specify</b>
<b>Date of completion</b>	
<b>IPD sharing statement plan</b> Yes	<b>IPD sharing statement description</b> In accordance with Biogen's Clinical Trial Transparency and Data Sharing Policy on <a href="http://clinicalresearch.biogen.com/">http://clinicalresearch.biogen.com/</a>
<b>Additional data URL</b>	
<b>Admin comments</b>	
<b>Trial status</b> Approved	



## Secondary Identifying Numbers

Full name of issuing authority	Secondary identifying number
clinicaltrials.gov	NCT04089566
EudraCT Number	2019-002663-10

## Sources of Monetary or Material Support

Name
Biogen Idec Research Limited UK

## Secondary Sponsors

Name
N/A

## Contact for Public/Scientific Queries

Contact type	Contact full name	Address	Country	Telephone	Email	Affiliation
Public	Kamal Masri	Building S2B, Downtown Katameya, Road 90, 5th settlement, New Cairo, 11835, Cairo	Egypt	009618166 9400	kamal.masri2@ iqvia.com	IQVIA
Scientific	clinicaltrials@biogen.com -	Innovation house, 70 Norden Road, Maidenhead, Berkshire, SL6 4AY	United Kingdom	0044 1628 501000	cta.submissions @biogen.com	Biogen Idec

## Centers/Hospitals Involved in the Study

Center/Hospital name	Name of principles investigator	Principles investigator speciality	Ethical approval
Saint Georges University Medical Center	Dr. Hicham Mansour	Pediatric Neurology	Approved

## Ethics Review

Ethics approval obtained	Approval date	Contact name	Contact email	Contact phone
Saint George Hospital University Medical Center	18/01/2021	Dr. Michel Daher	N/A	+9611441000



Countries of Recruitment	
Name	
United Kingdom	
United States of America	
France	
Canada	
Germany	
Estonia	
Italy	
Republic of Korea	
Poland	
Greece	
Hungary	
Ireland	
Latvia	
Spain	
Russian Federation	
Taiwan	
Lebanon	

Health Conditions or Problems Studied		
Condition	Code	Keyword
Spinal Muscular Atrophy	Spinal muscular atrophy, unspecified (G12.9)	Muscular Atrophy Muscular Atrophy, Spinal Atrophy Pathological Conditions, Anatomical Neuromuscular Manifestations Neurologic Manifestations Nervous System Diseases Spinal Cord Diseases Central Nervous System Diseases Motor Neuron Disease Neurodegenerative Diseases Neuromuscular Diseases



## Interventions

Intervention	Description	Keyword
Drug	Nusinersen	Nusinersen

## Primary Outcomes

Name	Time Points	Measure
Part B Infantile-onset SMA	Baseline up to Day 183	The CHOP INTEND test is designed to evaluate the motor skills of infants with significant motor weakness. It includes 16 items (capturing neck, trunk, and proximal and distal limb strength) structured to move from easiest to hardest with the grading including gravity eliminated (lower scores) to antigravity movements (higher scores). All item scores range from 0-4.
Part A and C: Number of Participants with Adverse Events (AEs) and Serious Adverse Events (SAEs)	Screening up to Day 389	An AE is any untoward medical occurrence in a participant administered a pharmaceutical product and that does not necessarily have a causal relationship with this treatment. An AE can therefore be any unfavorable and unintended sign (including an abnormal assessment such as an abnormal laboratory value), symptom, or disease temporally associated with the use of a medicinal (investigational) product, whether or not related to the medicinal (investigational) product. An SAE is any untoward medical occurrence that at any dose results in death, in the view of the Investigator, places the participant at immediate risk of death, requires inpatient hospitalization or prolongation of existing hospitalization, results in persistent or significant disability/incapacity, results in a birth defect.
Part A and C: Number of Participants with Clinically Significant Shifts from Baseline in Clinical Laboratory Parameters	Screening up to Day 302	Clinically Significant Shifts from Baseline in Clinical Laboratory Parameters
Part A and C: Number of Participants with Clinically Significant Shifts from Baseline in Electrocardiograms (ECGs)	Screening up to Day 302	Clinically Significant Shifts from Baseline in Electrocardiograms (ECGs)
Part A and C: Number of Participants with Clinically Significant Shifts from Baseline in Vital Signs	Screening up to Day 302	Clinically Significant Shifts from Baseline in Vital Signs
Part A and C: Change from Baseline in Body Length/Height	Baseline up to Day 302	Change from Baseline in Body Length/Height
Part C Infantile-onset SMA: Change from Baseline in Head Circumference	Baseline up to Day 302	Change from Baseline in Head Circumference
Part C Infantile-onset SMA: Change from Baseline in Chest Circumference	Baseline up to Day 302	Change from Baseline in Chest Circumference
Part C Infantile-onset SMA: Change from Baseline in Arm Circumference	Baseline up to Day 302	Change from Baseline in Arm Circumference
Part A and C Later-onset SMA: Change from Baseline in Ulnar Length	Baseline up to Day 302	Change from Baseline in Ulnar Length
Part A and C: Ratio of Weight for Age	Baseline up to Day 302	Ratio of Weight for Age
Part A and C: Ratio of Weight for Length	Baseline up to Day 302	Ratio of Weight for Length
Part C: Ratio of Head-to-chest Circumference	Baseline up to Day 302	Ratio of Head-to-chest Circumference
Part A and C: Change from Baseline in Activated Partial Thromboplastin Time (aPTT)	Baseline up to Day 269	Change from Baseline in Activated Partial Thromboplastin Time (aPTT)

Part A and C: Change from Baseline in Prothrombin Time (PT)	Baseline up to Day 269	Change from Baseline in Prothrombin Time (PT)
Part A and C: Change from Baseline in International Normalized Ratio (INR)	Baseline up to Day 269	Change from Baseline in International Normalized Ratio (INR)
Part A and C: Change in Urine Total Protein	Baseline up to Day 302	Change in Urine Total Protein
Part A and C: Change from Baseline in Neurological Examination Outcomes	Baseline up to Day 302	Change from Baseline in Neurological Examination Outcomes
Part A and C: Percentage of Participants with a Postbaseline Platelet Count Below the Lower Limit of Normal on at least 2 Consecutive Measurements	Baseline up to Day 302	Percentage of Participants with a Postbaseline Platelet Count Below the Lower Limit of Normal on at least 2 Consecutive Measurements
Part A and C: Percentage of Participants with a Postbaseline Corrected QT Interval Using Fridericia's Formula (QTcF) of > 500 millisecond (msec) and an Increase from Baseline to Any Postbaseline Timepoint in QTcF of > 60 msec	Baseline up to Day 302	Percentage of Participants with a Postbaseline Corrected QT Interval Using Fridericia's Formula (QTcF) of > 500 millisecond (msec) and an Increase from Baseline to Any Postbaseline Timepoint in QTcF of > 60 msec

## Key Secondary Outcomes

Name	Time Points	Measure
Part B Infantile-onset SMA: Percentage of Hammersmith Infant Neurological Examination (HINE) Section 2 Motor Milestone Responders	Day 302	Section 2 of the HINE is used to assess motor milestones of the participants. It is composed of 8 motor milestone categories: voluntary grasp, ability to kick in supine position, head control, rolling, sitting, crawling, standing, and walking.
Part B Infantile-onset SMA: Change from Baseline in HINE Section 2 Motor Milestones Total Score	From baseline to Day 302	Section 2 of the HINE is used to assess motor milestones of the participants. It is composed of 8 motor milestone categories: voluntary grasp, ability to kick in supine position, head control, rolling, sitting, crawling, standing, and walking.
Part B Infantile-onset SMA: Time to Permanent Ventilation	Screening up to Day 302	Permanent ventilation is defined as tracheostomy or ≥ 16 hours of ventilation/day continuously for > 21 days in the absence of an acute reversible event.
Part B Infantile-onset SMA: Time to Death (Overall Survival)	Screening up to Day 399	Overall survival
Part A and B Later-onset SMA: Change from Baseline in Hammersmith Functional Motor Scale - Expanded (HFMSE) Score	Baseline up to Day 302	HFMSE scale is a tool to assess motor function in children with SMA. The original 20 item Hammersmith Functional Motor Scale was expanded to include 13 additional adapted items from the Gross Motor Function Measure to improve sensitivity for the higher functioning ambulant population.
Part A and B Later-onset SMA: Change from Baseline in Revised Upper Limb Module (RULM) Score	Baseline up to Day 302	The RULM is developed to assess upper limb functional abilities participants with SMA. This test consists of upper limb performance items that are reflective of activities of daily living.
Part A and B Later-onset SMA: Total Number of New WHO Motor Milestones	Baseline up to Day 302	Total Number of New WHO Motor Milestones
Part A and B Later-onset SMA: Change from Baseline in Assessment of Caregiver Experience with Neuromuscular Disease (ACEND)	Baseline up to Day 302	ACEND is designed to quantify the caregiver impact experienced by parents/caregivers of children affected with severe neuromuscular diseases. It includes domains assessing physical impact (including feeding/grooming/dressing, sitting/play, transfers, and mobility) and general caregiver impact (including time, emotion, and finance).
Part A and B Later-onset SMA: Change from Baseline in Pediatric Quality of Life Inventory™ (PedsQL)	Baseline up to Day 302	PedsQL is used to measure healthrelated quality of life (HRQOL) in children and adolescents. The PedsQL Measurement 4.0 Generic Core Scales include assessment of physical functioning, emotional functioning, social functioning, and school functioning and the PedsQL 3.0 Neuromuscular Module measures HRQOL.





Part B: Number of Participants with AEs and SAEs	Screening up to Day 399	An AE is any untoward medical occurrence in a participant administered a pharmaceutical product and that does not necessarily have a causal relationship with this treatment. An AE can therefore be any unfavorable and unintended sign (including an abnormal assessment such as an abnormal laboratory value), symptom, or disease temporally associated with the use of a medicinal (investigational) product, whether or not related to the medicinal (investigational) product. An SAE is any untoward medical occurrence that at any dose results in death, in the view of the Investigator, places the participant at immediate risk of death, requires inpatient hospitalization or prolongation of existing hospitalization, results in persistent or significant disability/incapacity, results in a birth defect
Part B: Number of Participants with Clinically Significant Shifts from Baseline in Clinical Laboratory Parameters	Screening up to Day 302	Clinically Significant Shifts from Baseline in Clinical Laboratory Parameters
Part B: Number of Participants with Clinically Significant Shifts from Baseline in ECGs	Day 1 up to Day 302	Clinically Significant Shifts from Baseline in ECGs
Part B: Number of Participants with Clinically Significant Shifts from Baseline in Vital Signs	Screening up to Day 302	Clinically Significant Shifts from Baseline in Vital Signs
Part B: Change from Baseline in Body Length/Height	Baseline up to Day 302	Change from Baseline in Body Length/Height
Part B Infantile-onset SMA: Change from Baseline in Head Circumference	Baseline up to Day 302	Change from Baseline in Head Circumference
Part B Infantile-onset SMA: Change from Baseline in Chest Circumference	Baseline up to Day 302	Change from Baseline in Chest Circumference
Part B Infantile-onset SMA: Change from Baseline in Arm Circumference	Baseline up to Day 302	Change from Baseline in Arm Circumference
Part B Later-onset SMA: Change from Baseline in Ulnar Length	Baseline up to Day 302	Change from Baseline in Ulnar Length
Part B: Ratio of Weight for Age	Baseline up to Day 302	Ratio of Weight for Age
Part B: Ratio of Weight for Length	Baseline up to Day 302	Ratio of Weight for Length
Part B: Ratio of Head-to-chest Circumference	Baseline up to Day 302	Ratio of Head-to-chest Circumference
Part B: Change from Baseline in aPTT	Baseline up to Day 279	Change from Baseline in aPTT
Part B: Change from Baseline in PT	Baseline up to Day 279	Change from Baseline in PT
Part B: Change from Baseline in INR	Baseline up to Day 279	Change from Baseline in INR
Part B: Change in Urine Total Protein	Baseline up to Day 302	Change in Urine Total Protein
Part B: Change from Baseline in Neurological Examination Outcomes	Baseline up to Day 302	Change from Baseline in Neurological Examination Outcomes
Part B: Percentage of Participants with a Postbaseline Platelet Count Below the Lower Limit of Normal on at least 2 Consecutive Measurements	Baseline up to Day 302	Percentage of Participants with a Postbaseline Platelet Count Below the Lower Limit of Normal on at least 2 Consecutive Measurements
Part B: Percentage of Participants with a Postbaseline QTcF of > 500 msec and an Increase from Baseline to Any Postbaseline Timepoint in QTcF of > 60 msec	Baseline up to Day 302	Percentage of Participants with a Postbaseline QTcF of > 500 msec and an Increase from Baseline to Any Postbaseline Timepoint in QTcF of > 60 msec
Part A, B and C: Number of Hospitalizations	Day 1 to Day 279	Number of Hospitalizations
Part A, B and C: Duration of Hospitalizations	Day 1 to Day 279	Duration of Hospitalizations



Part A, B and C: Clinical Global Impression of Change (CGIC)	Day 302	The CGIC scale is a 7-point scale that requires the clinician to assess how much the participant's illness has changed relative to a baseline state at the beginning of the intervention, where 1=very much improved, 2=much improved, 3=minimally improved, 4=no change, 5=minimally worse, 6=much worse, 7=very much worse. Higher rating will indicate worsening of the condition.
Part A, B and C: Number of Participants with Serious Respiratory Events	Screening up to Day 399	Number of Participants with Serious Respiratory Events
Part B Infantile-onset SMA: Percentage of Time on Ventilation	Screening up to Day 302	Percentage of Time on Ventilation
Parts A, B and C: Ventilator Use	Screening up to Day 302	Ventilator Use
Part B Infantile-onset SMA: Change from Baseline in the Parent Assessment of Swallowing Ability (PASA) Scale]	Baseline up to Day 302	PASA questionnaire is developed to assess the signs and symptoms of dysphagia. It includes 33 items across 4 domains. General feeding, drinking liquids and eating solid foods will be assessed with 5 levels of response (Never, Rarely, Sometimes, Often, and Always), and 2 items will be assessed with 'Yes/'No'. The assessment of swallowing concerns has 4 levels of response: Strongly Agree, Agree, Disagree, and Strongly Disagree.
Part C: Change from Baseline in HFMSE Score	Baseline up to Day 302	HFMSE scale is a tool to assess motor function in children with SMA. The original 20 item Hammersmith Functional Motor Scale was expanded to include 13 additional adapted items from the Gross Motor Function Measure to improve sensitivity for the higher functioning ambulant population
Part C: Change from Baseline in HFMSE Score	Baseline up to Day 302	HFMSE scale is a tool to assess motor function in children with SMA. The original 20 item Hammersmith Functional Motor Scale was expanded to include 13 additional adapted items from the Gross Motor Function Measure to improve sensitivity for the higher functioning ambulant population.
Part C: Change from Baseline in RULM Score	Baseline up to Day 302	The RULM is developed to assess upper limb functional abilities participants with SMA. This test consists of upper limb performance items that are reflective of activities of daily living.
Part C: Total Number of New WHO Motor Milestones	Baseline up to Day 302	Total Number of New WHO Motor Milestones
Part C: Change from Baseline in ACEND	Baseline up to Day 302	ACEND is designed to quantify the caregiver impact experienced by parents/caregivers of children affected with severe neuromuscular diseases. It includes domains assessing physical impact (including feeding/grooming/dressing, sitting/play, transfers, and mobility) and general caregiver impact (including time, emotion, and finance).
Part C: Change from Baseline in PedsQL™	Baseline up to Day 302	PedsQL is used to measure healthrelated quality of life (HRQOL) in children and adolescents. The PedsQL Measurement 4.0 Generic Core Scales include assessment of physical functioning, emotional functioning, social functioning, and school functioning and the PedsQL 3.0 Neuromuscular Module measures HRQOL.
Part C: Change from Baseline in CHOP INTEND Total Score	Baseline up to Day 302	The CHOP INTEND test is designed to evaluate the motor skills of infants with significant motor weakness. It includes 16 items (capturing neck, trunk, and proximal and distal limb strength) structured to move from easiest to hardest with the grading including gravity eliminated (lower scores) to antigravity movements (higher scores). All item scores range from 0-4.
Part C: Change from Baseline in HINE Section 2 Motor Milestones Total Score	Baseline up to Day 302	Section 2 of the HINE is used to assess motor milestones of the participants. It is composed of 8 motor milestone categories: voluntary grasp, ability to kick in supine position, head control, rolling, sitting, crawling, standing, and walking.



Parts A and B Later-onset SMA: Change from Baseline in the PASA Scale	Baseline up to Day 302	PASA questionnaire is developed to assess the signs and symptoms of dysphagia. It includes 33 items across 4 domains. General feeding, drinking liquids and eating solid foods will be assessed with 5 levels of response (Never, Rarely, Sometimes, Often, and Always), and 2 items will be assessed with 'Yes'/'No'. The assessment of swallowing concerns has 4 levels of response: Strongly Agree, Agree, Disagree, and Strongly Disagree.
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## Trial Results

Summary results

Study results globally

Date of posting of results summaries

Date of first journal publication of results

Results URL link

Baseline characteristics

Participant flow

Adverse events

Outcome measures

URL to protocol files