

Studying the feasibility and safety of gene therapy to treat limb girdle muscular dystrophy (LGMD) type 2C

Submission date 17/03/2011	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered
Registration date 08/04/2011	Overall study status Completed	<input type="checkbox"/> Protocol
Last Edited 08/04/2011	Condition category Musculoskeletal Diseases	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
		<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

Contact name

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Contact details

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Groupe Hospitalier Pitié-Salpêtrière
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Paris
France
75013

Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers

GTG001.06

Study information

Scientific Title

Phase I clinical study of AAV1-gamma-sarcoglycan gene therapy for limb girdle muscular dystrophy type 2C

Study objectives

Evaluation of clinical safety and feasibility of gene therapy in patients with limb girdle muscular dystrophy type 2C (gamma-sarcoglycanopathy)

Ethics approval required

Old ethics approval format

Ethics approval(s)

Committee for the Protection of Persons (CPP) Ile de France VI [Comité de Protection des Personnes (CPP) Ile de France VI] approved on 10/10/2006

Study design

Phase I open-label dose escalation three cohort single institutional clinical trial

Primary study design

Interventional

Secondary study design

Cohort study

Study setting(s)

Hospital

Study type(s)

Treatment

Participant information sheet

Not available in web format, please use the contact details below to request a patient information sheet

Health condition(s) or problem(s) studied

Limb girdle muscular dystrophy (LGMD), type 2C (gamma-sarcoglycanopathy)

Interventions

1. No placebo arm
2. Six month follow-up on AAV1 γ -sarcoglycan, AAV1 replication-defective vector expressing the human γ -sarcoglycan gene under the control of the desmin promoter, prepared for clinical use under cGMP conditions for biologics to be used in clinical trials
3. Three dose levels: 3×10^9 vg/100 μ l, 1.5×10^{10} vg/100 μ l and three concomitant injections of 1.5×10^{10} vg/100 μ l into the same site (i.e. a dose of 4.5×10^{10} vg/300 μ l)
4. Single intramuscular injection of product into carpi radialis muscle under open procedure
5. Enrolment of subjects on a sequential mode
6. Muscular evaluation is made periodically during the 6 following months after enrolment
7. Muscular biopsy is made on day 30 after enrolment

Intervention Type

Other

Phase

Phase I

Primary outcome measure

Assessment of clinical tolerance by standard clinical examination

Secondary outcome measures

1. Assessment of biological, immunological, histological and functional tolerance by laboratory monitoring, evaluation of humoral and cellular immune response to both transgene and vector as well as non-specific immune response, evaluation of histological changes on muscle biopsy and evaluation of changes in muscle function
2. Assessment of efficacy through studies of transduction efficiency, distribution, expression and fiber type specificity and muscle biopsy histological changes (based on immunohistochemistry and Western blot studies and analysis of sarcoglycan labelling)

Overall study start date

21/11/2006

Completion date

01/06/2010

Eligibility**Key inclusion criteria**

1. Confirmed diagnosis of LGMD 2C including:
 - 1.1. Molecular analysis proving del525T mutation on γ -sarcoglycan gene (chromosome 13) at homozygous state
 - 1.2. Muscle biopsy with immunohistochemical and/or Western blot analysis showing marked decrease or absence of γ -sarcoglycan staining in muscle, as well as a fibrosis assessment should be available. If not, an initial muscular biopsy may be performed during the pre-enrolment period
2. Minimum age of 15 years
3. Males and females may be equally enrolled
4. Adequate carpi radialis muscle bulk for muscle biopsy as assessed by examination
5. Subjects should be able to communicate with the investigation staff
6. Subjects should be able to understand, to comply with and to perform all needed evaluations during the trial period including muscle strength tests
7. Forearm muscle strength should be of at least 3+ as assessed through the British Medical Research Council (MRC) Manual Muscle Testing (MMT) scale
8. Subjects should also have already lost ambulation
9. Subjects should be able and willing to return for follow up
10. Subjects should be able and willing to give signed informed consent
11. For minor subjects, a signed informed consent will be given by a legally authorised representative
12. Eligible subjects belonging to a multiplex family should not be enrolled in the same cohort

Participant type(s)

Patient

Age group

Adult

Sex

Both

Target number of participants

9

Key exclusion criteria

1. Severity of disease and presence of ill-prognosis complications:
 - 1.1. Severe respiratory dysfunction such as subjects with tracheostomy or forced vital capacity (FVC) < 1000ml and/or < 30%
 - 1.2. Uncompensated heart failure
 - 1.3. An ejection fraction (EF) < 30% as measured on either echocardiography or scintigraphy
 - 1.4. Severe rhythm disturbances and/or high degree conduction defect in the absence of a pacemaker insertion
2. Underlying conditions, diseases or active viral infections likely to increase risk of complications or to interfere with the investigational treatment:
 - 2.1. Contraindications for injections and muscle biopsies
 - 2.2. Platelet count < 100,000/mm³
 - 2.3. Total bilirubin > 10 mg/l (> 17 µmol/l)
 - 2.4. Serum creatinine > 110 µmol/l
 - 2.5. Lymphocytes CD4+ < 250/mm³ (< 15%)
 - 2.6. History of diabetes mellitus
 - 2.7. Current infectious diseases, including known positive human immunodeficiency virus (HIV) serology, hepatitis B and C
 - 2.8. Abnormal profile on protein immunoelectrophoresis
 - 2.9. Immunisations of any kind within the past month
 - 2.10. Receipt of another investigational agent within 4 weeks of study enrolment
 - 2.11. History of or current steroid medication for indications other than muscular dystrophy, chemotherapy, radiotherapy or other immunosuppressive therapy
 - 2.12. Steroid medication, if any, should be discontinued at least 3 months before entering the protocol and not received during the study
 - 2.13. Pregnant or lactating women
 - 2.14. Females or males of childbearing age must be willing to employ adequate contraception, that is to use condoms during the 3 months following the administration of the product
 - 2.15. Pre-injection neutralising anti-AAV1 antibodies titer (on pre-enrolment / D-30 visit) superior or equal to 1/800

Date of first enrolment

21/11/2006

Date of final enrolment

01/06/2010

Locations**Countries of recruitment**

France

Study participating centre
Service de Médecine Interne
Paris
France
75013

Sponsor information

Organisation
Genethon (France)

Sponsor details
1 Bis Rue de L'Internationale
Evry
France
91000

Sponsor type
Research organisation

Website
<http://www.genethon.fr>

ROR
<https://ror.org/03fj96t64>

Funder(s)

Funder type
Research organisation

Funder Name
Genethon (France)

Results and Publications

Publication and dissemination plan
Not provided at time of registration

Intention to publish date

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration