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Randomised, double blind, placebo-controlled, trial of long-term ascorbic acid treatment in Charcot-Marie-Tooth disease type 1A

Submission date
22/04/2008

Recruitment status
No longer recruiting

Registration date
09/06/2008

Overall study status
Completed

Last Edited
04/07/2011

Condition category
Nervous System Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[X] Results
[ ] Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
CMT-TRAUK 2

Study information

Scientific Title

Acronym
CMT-TRAUK

Study objectives
To assess the efficacy and safety of chronic treatment with ascorbic acid in Charcot-Marie-Tooth disease type 1A (CMT1A). To date there is no pharmacological treatment for CMT1A patients. Recently, treatment with ascorbic acid (AA) has been shown to be effective for transgenic mice overexpressing PMP22, a model of the human disease.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Ethics approval received from the National Hospital for Neurology and Neurosurgery Ethics Committee and the Institute of Neurology Joint Research Ethics Committee (REC) on the 6th October 2006 (ref: 06/Q0512/88).

Study design
Phase III prospective, randomised, double-blind, placebo-controlled trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Charcot-Marie-Tooth disease type 1A (CMT1A)

Interventions
The AA treated group received chronic therapy with ascorbic acid 1500 mg/day divided in morning (500 mg tablets) and evening (two 500 mg tablets) doses for a period of two years. The same dose regimen was prescribed for the group randomised to the placebo.

Total duration of follow-up for all treatment arms: 2 years.

Intervention Type
Drug

Phase
Not Specified

Drug/device/biological/vaccine name(s)
Ascorbic acid

Primary outcome(s)
Improvement of 0.5 or more in the Charcot-Marie-Tooth neuropathy score (CMTNS) in participants treated with AA versus 1 point worsening in the placebo group at 24 months since enrolment.

Key secondary outcome(s)
Changes in:
1. Distal arm and leg strength (measured by maximum voluntary isometric contraction), performed every 6 months (baseline, 6, 12, 18 and 24 months)
2. 10-metre time walking, performed every 6 months (baseline, 6, 12, 18 and 24 months)
3. Nine-hole-peg test, performed every 6 months (baseline, 6, 12, 18 and 24 months)
4. Overal Neuropathy Limitation Scale, performed every 6 months (baseline, 6, 12, 18 and 24 months)
5. Visual Analogue Scale (VAS) for pain and fatigue, performed at baseline, 12 and 24-month visits
6. Health-related quality of life (assessed with the 36-item Short Form [SF-36] health survey), performed at baseline, 12 and 24-month visits
7. Electrophysiological parameters, performed every 6 months (baseline, 6, 12, 18 and 24 months)
8. Assessment of small fibre function with thermal thresholds, contact heat evoked potentials (CHEPs) and pain questionnaires are performed at baseline visit and 24-month visit

Completion date
01/08/2009

Eligibility

Key inclusion criteria
1. Clinical diagnosis of CMT1A
2. Genetic confirmation of CMT1A, based on presence of 17p11.2 duplication
3. CMT neuropathy score (CMTNS) between 1 (excluding the electrophysiological component) and 35 (including the electrophysiological component)
4. Aged 18 - 70 years, either sex
5. Ability to accomplish the primary outcome measures
6. Women of child-bearing age only if not pregnant or breast feeding
7. Signed informed consent

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria

1. Clinical or echographic diagnosis of nephrolithiasis
2. Positive history of recurrent renal colic
3. One or more episodes of renal colic during the six months prior to enrolment
4. Deficit of glucose-6P-dehydrogenase (G6PD) (non-spherocytic haemolytic anaemia due to G6PD deficiency)
5. Acquired or hereditary haemochromatosis; thalassemia major; sideroblastic anaemia
6. Treatment with ramified chain amino-acids or other drugs considered as potential therapeutic agents for CMT1A during the three months prior to screening
7. AA treatment in the three months prior to screening
8. Other causes of neuropathy (e.g. diabetes, monoclonal gammopathy, cryoglobulinaemia, neoplasms, vitamin B12 deficiency, hepatitis C virus [HCV]-related liver disease)
9. Presence of other neurological disorder (such as multiple sclerosis, cerebrovascular diseases, movement disorders), or major comorbidities (e.g., definite cognitive impairment, psychiatric disease, heart or lung failure, orthopaedic or rheumatological disorders)
10. Limb surgery during the six months prior to screening (or planned before final assessment)

Date of first enrolment
01/03/2007

Date of final enrolment
01/08/2009

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
MRC Centre for Neuromuscular Disease and Department of Molecular Neurosciences
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Sponsor information

Organisation
University College London (UCL) and University College London Hospitals NHS Trust (UCLH) (UK)

ROR
https://ror.org/02jx3x895

Funder(s)

Funder type
Charity

Funder Name
Muscular Dystrophy Campaign (UK)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/04/2011		Yes	No