

Does vitamin D improve markers of vascular health in stroke patients?

Submission date 21/02/2007	Recruitment status No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 01/05/2007	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 26/02/2018	Condition category Circulatory System	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Small studies have shown that vitamin D, a hormone that the skin usually makes using sunshine, may be able to reduce blood pressure and improve blood vessel health in some people. People who have had a stroke very often have low vitamin D levels, and people with low vitamin D tend to have higher blood pressure. People with high blood pressure have blood vessels that do not work as well as normal, and this leads to a higher risk of heart problems and strokes.

The aim of the study is therefore to test whether giving extra vitamin D to people who have had a stroke in the past helps to reduce blood pressure and improve other measures of blood vessel and heart health.

Who can participate?

Adults aged 18 years and over who have had a stroke

What does the study involve?

The study lasts for 16 weeks. Participants are randomly allocated to one of two groups, and given either a single capsule of vitamin D or a matching placebo (dummy) tablet.

Participants are assessed at the start, and 8 weeks and 16 weeks, with each visit lasting 1.5 hours. At each visit, participants receive some or all of the following depending on which visit it is:

- Blood pressure measured
- Blood sample taken
- Test the function of the artery in their arm. The artery is scanned with an ultrasound machine before and after inflating a blood pressure cuff on their forearm for 5 minutes. The test is repeated after giving the participant a medication (GTN) spray under their tongue.
- Wear a blood pressure cuff and a heart rate monitor (ECG) for 24 hours including at home

What are the possible benefits and risks of participating?

Although participants are unlikely to benefit directly by taking part in the trial, those who receive the vitamin D might find that blood pressure is lower.

Although this dose of vitamin D has been used before and is known to be safe there is a small possibility of side effects. Participants are closely monitored for side effects caused by high calcium levels: sickness, diarrhoea, thirst or dizziness. To reduce the chance of vitamin D increasing the calcium level in their blood, participants are also asked not to take vitamin D

supplements or calcium supplements whilst taking part in this study.
Having blood taken can cause some bruising. The blood pressure cuff causes mild discomfort to some people.

Where is the study run from?
Ninewells Hospital Dundee (UK)

When is the study starting and how long is it expected to run for?
September 2006 to May 2009

Who is funding the study?
Chest Heart and Stroke Scotland (UK)

Who is the main contact?
Dr Miles Witham (Scientific)
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Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Protocol serial number
Res/A107

Study information

Scientific Title
The effect of vitamin D replacement on markers of vascular health in stroke patients - a randomised controlled trial

Study objectives
That a single dose of oral vitamin D can lower blood pressure and improve endothelial function in stroke patients

Ethics approval required

Old ethics approval format

Ethics approval(s)

Tayside Local Research Ethics Committee, 14/05/200, ref: 07/S1401/41

Study design

Double blind randomised placebo controlled trial.

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Stroke

Interventions

A single oral dose of 100,000 U ergocalciferol (vitamin D) or placebo.

Intervention Type

Other

Phase

Not Specified

Primary outcome(s)

Blood pressure (seated office and 24 hour measurements) (added 26/02/2018: measured using a blood pressure cuff) at baseline, 8 and 16 weeks after vitamin D administration.

Key secondary outcome(s)

Current secondary outcome measures (as of 26/02/2018):

All outcomes are measured at baseline, and 8 and 16 weeks after vitamin D administration:

1. Endothelial function of the artery in the arm is measured using ultrasound following an inflated blood pressure cuff
2. B-type natriuretic peptide is measured from a blood sample
3. Heart rate variability is measured using a 24 hour ECG
4. Vitamin D deficiency is measured using 25OHD

Previous secondary outcome measures;

The secondary outcomes will also be measured at baseline and then at 8 and 16 weeks after vitamin D administration.

1. Endothelial function
2. B-type natriuretic peptide
3. Heart rate variability

Completion date

31/05/2009

Eligibility

Key inclusion criteria

1. Clinical diagnosis of completed stroke (ischaemic or haemorrhagic)
2. Serum 25-hydroxy vitamin D level less than 50 nmol/L

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Key exclusion criteria

1. Hyper- or hypocalcaemia
2. Metastatic malignancy
3. Liver function tests over three times limit of normal
4. Estimated glomerular filtration rate (GFR) less than 40 ml/min
5. Previous clinical diagnosis of osteomalacia
6. Taking vitamin D preparations
7. Unable to give written informed consent
8. Unable to swallow tablets orally
9. Atrial fibrillation (to provide a more homogeneous aetiology)

Date of first enrolment

28/01/2008

Date of final enrolment

31/08/2008

Locations

Countries of recruitment

United Kingdom

Scotland

Study participating centre

Department of Medicine & Therapeutics

Dundee

United Kingdom

DD1 9SY

Sponsor information

Organisation

University of Dundee (UK)

ROR

<https://ror.org/03h2bxq36>

Funder(s)

Funder type

Charity

Funder Name

Chest Heart and Stroke Scotland (UK)

Results and Publications

Individual participant data (IPD) sharing plan

The protocol is available from the authors on request but is not available online. Study data are available for non-commercial, bona-fide academic analyses in collaboration with the authors; decisions on data access will be made between the investigators and the Sponsor (University of Dundee). Participant consent for unrestricted sharing of individual participant data was not obtained

Contact for data sharing: Dr Catrina Forde (c.forde@dundee.ac.uk)

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/10/2012		Yes	No
Basic results		21/02/2018	26/02/2018	No	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes