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Stem cell trial of recovery enhancement after stroke 3

Submission date	Recruitment status	[_] Prospectively registered
08/12/2011	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
08/12/2011	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
12/09/2016	Circulatory System	

Plain English summary of protocol

Background and study aims
When someone has a stroke permanent brain damage can occur and result in long term disability. At present there is no treatment that improves long-term recovery in people who have had a stroke and are left with disability at least three months after the stroke. It is unclear whether treatment with drugs or rehabilitation therapy at this stage would improve recovery further. Laboratory work suggests that transplantation of stem cells (cells able to re-grow and change into different cell types) can improve recovery after stroke, possibly by helping the brain to replace lost cells. Bone marrow stem cells can be released into the blood stream following injection of a drug called granulocyte-colony stimulating factor (G-CSF). G-CSF has been tested early (in the first few days) after stroke but has not been given later after stroke. We want to test whether it is possible to give a drug (G-CSF) with a course of rehabilitation therapy (such as physiotherapy, PT; or occupational therapy, OT) to people at least three months after stroke. We hope that we will be able to show that giving the drug and the rehabilitation therapy will be possible, and may reduce disability after a stroke.

Who can participate?
Adults (18 years and over, male and female), who have had a recent stroke (90 days to 1 year) with leg or arm weakness, who are no longer having rehabilitation therapy.

What does the study involve?
Involvement in the study will last for 90 days. There will be three clinic appointments Day 0, Day 45 and Day 90. At these appointments participants will have assessments: some assessing mobility and physical ability and others assessing mental health, mental ability and ability to function in everyday society. There will also be some medical assessments looking at general health. Participants will be randomly allocated to four treatment groups (a computer will carry out the randomisation which is like tossing a coin):
G-CSF/No Rehabilitation Therapy
G-CSF/Rehabilitation Therapy
Dummy Drug/No Rehabilitation Therapy
Dummy Drug/Rehabilitation Therapy
A nurse will visit the participants at home to administer the drug in the form of an injection in the fatty layer of the skin for five days and will monitor for signs of side effects of the treatment

and document this. If the participant is to receive rehabilitation therapy they will receive 3 visits a week for 6 weeks. There will be a blood test on the first visit to clinic, and the last day of G-CSF treatment. The first blood test will give a baseline result for blood counts the second will look at substances in the blood that can help tell the effect the drug G-CSF has on the blood. The clinic appointments should last no longer than an hour and a half.

What are the possible benefits and risks of participating?
All drugs may have side effects. The side effects from G-CSF are generally mild. They can include muscle aches and pains, bone pain and dizziness. Bone pain is the most common side effect and can occur in approximately 10-20% of people receiving the G-CSF, however this is usually mild and can be treated with simple pain killers, such as paracetamol. Very rarely can G-CSF cause allergic reactions and temporary enlargement of the spleen, a part of the body that responds to the increase in bone marrow cells. It can also alter blood counts. This is why participants will have blood tests and regular monitoring during the study and if necessary the G-CSF will be discontinued. Participants will be asked to report any side effects to the research nurse. Participation in the study may reduce the symptoms of stroke or improve long-term recovery. The information we get from participants involvement may benefit other people who may have a stroke in the future.

Where is the study run from?
University of Nottingham (UK)

When is the study starting and how long is it expected to run for?
November 2011 to November 2013

Who is funding the study?
National Institute for Health Research (NIHR)

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number

10801

Study information

Scientific Title
Stem cell Trial of recovery EnhanceMent after Stroke 3: a randomised controlled trial

Acronym
STEMS3

Study objectives
Many patients are left with longstanding (chronic) disability after stroke. Despite this most patients receive no therapy beyond the first three to six months after stroke. It is unclear whether treatment with drugs or rehabilitation at this stage would improve recovery further.

Experiments in animals suggest that transplantation of stem cells (cells able to regrow and change into different cell types) can improve recovery after stroke, possibly by helping the brain to replace lost cells. Bone marrow stem cells can be released into the blood stream following injection of a drug called granulocytecolony stimulating factor (GCSF).

GCSF has been tested early after stroke but has not been given to patients later after stroke.

The trial design will allow us to look at the effect of GCSF and therapy in chronic stroke, and to see if the two treatments work better when given together. The results will help in the design of further trials in chronic stroke.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Yorkshire and the Humber - Leeds East, 20/06/2011, ref: 11/YH/0138

Study design
Randomised interventional treatment trial

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Topic: Stroke Research Network; Subtopic: Rehabilitation; Disease: Community study

Interventions
We will perform a trial testing both GCSF, and a course of therapy given to 60 patients who have disability at least 3 months after their stroke. The patients will be living in the community, and will be visited by the research team to be assessed for enrolment in the trial. After consent into the trial, the research nurse will give GCSF or dummy as an injection under the skin for 5 days. Following this, patients will receive therapy from trial staff for 45 minutes three times a week,

for six weeks. The type and content of therapy will be dependent on the patients needs. Six weeks later the patient will be reassessed to see if there has been any change or improvement in their function.

Intervention Type
Drug

Phase
Not Applicable

Drug/device/biological/vaccine name(s)
Granulocytecolony stimulating factor

Primary outcome(s)
1. Feasibility
2. Proportion of participants receiving all 5 GCSF/ placebo injections
3. Proportion of participants receiving all 18 therapy sessions

Key secondary outcome(s)
1. Acceptability
2. Proportion of participants screened who are eligible for enrollment who give consent
3. Tolerability
4. Adverse events (headache, backache) reported after G-CSF administration
5. Secondary Haematological (FBC, WCC, CD34, PLT)
6. Post therapy intervention (day 45 and, end of follow-up day 90):
6.1. Motor function (RMA)
6.2. Change in dependency (modified Rankin Scale shift)
6.3. Change in disability (change in BI)
6.4. Quality of life (EuroQoL)
6.5. Care giver burden

Completion date
31/10/2013

Eligibility

Key inclusion criteria
1. Adults (18 years and over)
2. Male and female participants
3. Motor impairment (arm or leg) with residual disability (modified Rankin Score >1) due to stroke >90 days post onset.

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
1. Lack of residual motor deficit
2. Significant cognitive impairment that will impede ability to complete assessments
3. Diagnosis likely to interfere with outcome or rehabilitation (e.g. terminal illness)
4. Still receiving post stroke rehabilitation
5. Pregnancy
6. Other exclusions of GCSF (as per British National Formulary)

Date of first enrolment
01/11/2011

Date of final enrolment
31/10/2013

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
University of Nottingham
Nottingham
United Kingdom
NG7 2RD

Sponsor information

Organisation
University of Nottingham (UK)

ROR
https://ror.org/01ee9ar58

Funder(s)

Funder type
Government

Funder Name
NIHR Research for Patient Benefit, ref: PB-PG-0909-19113 (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	09/09/2016		Yes	No
HRA research summary			28/06/2023	No	No