Standing practice in rehabilitation early after stroke

Submission date	Recruitment status No longer recruiting	[X] Prospectively registered		
04/07/2016		[X] Protocol		
Registration date	Overall study status	Statistical analysis plan		
19/12/2016	Completed	[X] Results		
Last Edited	Condition category	[] Individual participant data		
31/10/2022	Circulatory System			

Plain English summary of protocol

Background and study aims

A stroke is a serious condition where the blood supply to a part of the brain is cut off, usually by a blood clot blocking an artery (ischaemic stroke) or a bleed (haemorrhagic stroke). A large proportion of stroke victims suffer from long-term complications depending on the area of the brain that is affected, affecting their ability to speak, think and move. People with severe stroke experience significant muscle weakness which means that they spend much of their time in bed or sitting. This inactivity can cause their muscles to become even weaker and stiffer and may lead them to experience sudden drops in blood pressure when they move from lying to standing (orthostatic hypotension (OH). This further interferes with their ability to participate in intensive stroke rehabilitation, overall recovery and quality of life. Currently physiotherapy for people with severe stroke concentrates on practicing tasks such as getting in and out of bed into a chair that are important for independence and achieving safe discharge home. Standing up early after a stroke may help strengthen muscles, reduce OH and minimise or prevent muscles becoming stiff and weaker. A standing frame has the ability to assist people with severe stroke safely into a supported standing posture, however there are not given to patients when discharged and are not often used in stroke rehabilitation units. This study aims to assess whether it is possible for people with severe stroke to use a standing frame to practice functional movements such as standing and moving between sitting and standing during their hospital-based rehabilitation.

Who can participate?

Adults with severe stroke who are patients in participating Stroke Rehabilitation Units in Cornwall and Devon.

What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group take part in the functional standing frame programme. This involves a maximum of 30 minutes using the standing frame plus an additional 15 minutes to provide time for usual physiotherapy where participants may practise transfers, arm activities or activities chosen by participants or guided by physiotherapists. Participants will undertake the functional standing frame programme for ideally up to five days per week for a total of three weeks. Those in the second group practice routine physiotherapy stroke rehabilitation for 45 minutes per day (or as long as a tolerated) ideally up to five days per week for three weeks. Participants in both groups complete a range of

assessments and questionnaires at the start of the study and then again after three, six and twelve months to assess their function and ability to undertake activities of daily living.

What are the possible benefits and risks of participating?

Participants who use the standing frame may benefit from improvements to their symptoms and enhanced recovery. There are no notable risks involved with participating.

Where is the study run from?

- 1. Camborne Redruth Community Hospital (UK)
- 2. Bodmin Community Hospital (UK)
- 3. Skylark Ward, Stroke Rehabilitation Unit (UK)
- 4. Elizabeth Ward, Stroke Rehabilitation Unit (UK)

When is the study starting and how long is it expected to run for? April 2016 to March 2019

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

Who is the main contact?
Miss Angie Logan
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Contact information

Type(s)

Scientific

Contact name

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Contact details

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers

Study information

Scientific Title

A randomised controlled feasibility study to investigate the effects of a functional standing frame programme versus usual physiotherapy in people with severe sub-acute stroke on function, quality of life and neuromuscular impairment

Acronym

SPIRES

Study objectives

The aim of this study is to find out whether a functional standing frame programme for people with severe stroke is feasible to implement in a sub-acute inpatient rehabilitation setting and if it leads to an improvement in functional ability and quality of life, orthostatic hypotension and a reduction in neuromuscular impairment.

Ethics approval required

Old ethics approval format

Ethics approval(s)

South West Research Ethics Committee, 03/08/2016, ref: 16/WA/0229

Study design

Multi-centre randomised controlled feasibility trial

Primary study design

Interventional

Secondary study design

Randomised controlled trial

Study setting(s)

Hospital

Study type(s)

Treatment

Participant information sheet

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

Health condition(s) or problem(s) studied

Stroke

Interventions

Participants will be randomised using a secure web-based system and a minimisation algorithm. The minimisation procedure will minimise group imbalance among the two intervention groups. Groups will be matched for:

- 1. Fatigue (fatigue vs no/minimal fatigue)
- 2. OH (hypotension vs no hypotension)

Functional standing frame programme (intervention group):

The intervention will occur for a period of three weeks and will start as early as possible after randomisation to ensure that the treatment can be completed whilst an inpatient. The functional standing frame programme will occur in a SRU gym/therapy room which is private. The functional standing frame programme involves a maximum of 30 minutes using the standing frame plus an additional 15 minutes to provide time for usual physiotherapy where participants may practise transfers, upper limb activities or activities chosen by participants or guided by physiotherapists. Participants will undertake the functional standing frame programme for ideally up to five days per week which is aligned with the Royal College of Physicians Guidelines.

Usual physiotherapy (control group):

This is defined as routine physiotherapy stroke rehabilitation for 45 minutes per day (or as long as a tolerated) ideally up to five days per week for three weeks, which is aligned with Royal College of Physicians Guidelines.

Participants in both groups are followed up after 3, 6 and 12 months.

Intervention Type

Other

Primary outcome measure

Function/ability to undertake activities of daily living is measured using the Barthel Index of Activities of Daily Living and Edmans Activities of Daily Living Index for Stroke Patients at baseline, 3, 6 and 12 months.

Secondary outcome measures

- 1. Blood pressure is measured using sphygmomanometer at baseline, 3, 6 and 12 months
- 2. Knee muscle strength is measured using hand held dynamometer at baseline, 3, 6 and 12 months
- 3. Length of muscles at hip, knee and ankle is measured using Goniometry at baseline, 3, 6 and 12 months
- 4. Muscle tone is measured using the Modified Ashworth Scale at baseline, 3, 6 and 12 months
- 5. Balance/trunk control is measured using the Trunk Control Test at baseline. 3. 6 and 12 months
- 6. Mood is measured using the PHQ-9/SAD-Q10 at baseline, 3, 6 and 12 months
- 7. Quality of life is measured using the Stroke & Aphasia Quality of Life Scale-39 at baseline, 3, 6 and 12 months
- 8. Quality of life is measured using the EQ-5D-5L at baseline, 3, 6 and 12 months
- 9. Fatigue is measured using the Fatigue Visual Analogue Scale at baseline, 3, 6 and 12 months

Overall study start date

01/04/2016

Completion date

31/03/2019

Eligibility

Key inclusion criteria

- 1. New (first/recurrent) clinical diagnosis of stroke, cerebral haemorrhage or infarct confirmed by consultant or CT scan leading to admission to the SRU
- 2. Aged 18 years and over
- 3. Graded as mRS 4 or 5 and/or NIHSS≥16 (severe or very severe stroke and unable to stand without support/mechanical aid and assistance of two people)
- 4. Able to give informed consent or assent from a consultee
- 5. Conscious and responsive to verbal commands

Participant type(s)

Patient

Age group

Adult

Lower age limit

18 Years

Sex

Both

Target number of participants

50 in total (25 in each group)

Total final enrolment

45

Key exclusion criteria

- 1. Systolic blood pressure ≤100mmHg or ≥220mmHg at rest lying or sitting
- 2. Oxygen saturation ≤87% with or without supplementary oxygen (e.g. severe acute/chronic cardiorespiratory disease)
- 3. Resting heart rate of ≤40 or ≥110 beats per minute (e.g. cardiovascular instability)
- 4. Temperature ≥38.5 degrees centigrade or ≤35 degrees centigrade
- 5. Orthopaedic impairments which prevent full weight bearing in standing
- 6. Malnutrition Universal Screening Tool score of \geq 2, or not meeting nutritional demands for therapeutic interventions
- 7. Documented clinical decision for receiving end of life care
- 8. Unstable coronary or other medical condition that is judged by the PI/CI or clinical team to impose a medical risk to the patient by involvement in the study
- 9. Severe communication and/or cognitive deficit which affects their ability to follow instructions (e.g. assessed functionally by specialist clinicians as being a risk to themselves or others due to their inability to follow non-verbal prompts or are behaving erratically)
- 10. Immobile and not weight bearing pre-stroke
- 11. Additional neurological deficits unrelated to the current or past stroke (e.g. peripheral neuropathy or Multiple Sclerosis), because these impairments are not related to the condition of interest
- 12. Weight of 115kg or more, this is the weight limit on the standing frames
- 13. Being discharged out of county, e.g. admitted during holiday/visit to Cornwall or Devon because they would be unable to participate in follow-up assessments
- 14. Already registered in an intervention trial

Date of first enrolment

Date of final enrolment 31/10/2017

Locations

Countries of recruitment

England

United Kingdom

Study participating centre Camborne Redruth Community Hospital

Lanyon Ward, Stroke Rehabilitation Unit Cornwall Partnership Foundation NHS Trust Barncoose Terrace Redruth, Cornwall United Kingdom TR15 3ER

Study participating centre Bodmin Community Hospital

Woodfield Ward, Stroke Rehabilitation Unit Cornwall Partnership Foundation NHS Trust Boundary Road Bodmin, Cornwall United Kingdom PL31 2QT

Study participating centre Skylark Ward, Stroke Rehabilitation Unit

Mount Gould Community Hospital Livewell Southwest Plymouth United Kingdom PL4 7PY

Study participating centre Elizabeth Ward, Stroke Rehabilitation Unit Bideford Community Hospital North Devon Healthcare Abbotsham Rd

Sponsor information

Organisation

Royal Cornwall Hospitals NHS Trust

Sponsor details

Knowledge Spa Royal Cornwall Hospitals Truro England United Kingdom TR1 3HD

Sponsor type

Hospital/treatment centre

ROR

https://ror.org/026xdcm93

Funder(s)

Funder type

Government

Funder Name

National Institute for Health Research

Alternative Name(s)

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Results and Publications

Publication and dissemination plan

Current publication and dissemination plan as of 19/04/2021:

A manuscript for publication was submitted in March 2021 following revisions. The outcome is pending.

Previous publication and dissemination plan:

Planned publication in a high-impact peer-reviewed journal.

Intention to publish date

31/08/2021

Individual participant data (IPD) sharing plan

The current data sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<u>Protocol article</u>		01/12/2018		Yes	No
Results article		03/03/2022	31/10/2022	Yes	No
HRA research summary			26/07/2023	No	No