General versus specific spinal manipulation for back pain

Submission date 16/03/2017	Recruitment status No longer recruiting	Prospectively registered	
		[] Protocol	
Registration date	Overall study status	Statistical analysis plan	
12/04/2017	Completed	[X] Results	
Last Edited 22/10/2019	Condition category Injury, Occupational Diseases, Poisoning	Individual participant data	

Plain English summary of protocol

Background and study aims

Pain in the lower back is very common and can get better over time. However, if it becomes worse it can require treatment. Spinal manipulation is often used to treat the low back pain. Spinal manipulation is therapeutic technique applied by a doctor, physiotherapist or other manual therapist to help patients with spinal pain. Spinal manipulation involves the rapid movement (thrust) of the spine to stimulate the nerves and joints in a certain way that reduces pain. This often makes a popping noise come from the joints. The application of spinal manipulation has traditionally involved targeting the technique to a particular level of the spine where the problem is occurs. This involves a time-consuming assessment process to figure out where this is, which has been deemed necessary as the effect of spinal manipulation. Recent research has questioned both the accuracy of spinal manipulation and the necessity for specific targeting of the spine. This study evaluates the effects of a targeted manipulative thrust technique versus a thrust of equal magnitude (strength), applied to the spinal region, to assess any difference in muscular responses and pain.

Who can participate?

Adults aged 18 to 60 with lower back pain.

What does the study involve?

Participants are randomly allocated to one of two groups. All participants attend three one hour treatment sessions within seven to nine days apart. Those in the first group receive a targeted thrust at a certain part of the spine (as determined by their physiotherapist). Those in the second group receive a thrust in a more general area of the lower spine. The thrusts in both groups are done with the same amount of strength and force. Participants are measured for their pain levels and muscle responses at each of the sessions.

What are the possible benefits and risks of participating?

Participants may benefit from long-term reduction in back pain. There is a small risk of short-term (less than 24 hours) of soreness after a treatment session.

Where is the study run from? Wellcome Clinical Research Facility (UK)

When is the study starting and how long is it expected to run for? April 2005 to June 2007

Who is funding the study? Investigator initiated and funded (UK)

Who is the main contact? Dr Chris McCarthy cmccarthy@mmu.ac.uk

Contact information

Type(s) Scientific

Contact name Dr Chris McCarthy

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers 005/CMFT/005

Study information

Scientific Title

A randomised controlled trial comparing targeted thrust manipulation with a general manipulation thrust in low back pain: Is a general approach as effective as specific?

Study objectives

Targeted spinal manipulation is more effective at reducing low back pain than a general thrust technique.

Ethics approval required Old ethics approval format

Ethics approval(s) North Manchester Local Research Ethics Committees, 01/03/2005, ref: 02/NM/406

Study design Single centre double blind randomised controlled 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 below to request a patient information sheet

Health condition(s) or problem(s) studied

Lower back pain

Interventions

Participants are randomly allocated to one of two groups. Randomisation is done through minimisation using BMI and gender as variables. Participants receive three sessions that are spaced seven to nine days apart. At the initial visit, all participants go through an initial assessment for their history of back pain prior to their therapy.

Group 1: Participants receive a targeted manipulative thurst (TT) to the lumbar spine. This is done through a single high velocity low amplitude thrust delivered to the participant in a side lying position localised to a clinician-defined symptomatic spinal level.

Group 2: General manipulation thrust (GT) to the lumbar spine. This is done through a high velocity movement with the participants in the side lying position not directed towards a specific lumbar level.

Participants receive the treatment for three treatment sessions spaced seven to nine days apart. Pressure-pain thresholds (PPT) are assessed using algometry and muscle activity (magnitude of stretch reflex) via surface electromyography (EMG) before and after each session. Subjective assessments of pain and disability are also collected using Roland Morris Disability and VAS scores before and after each session. The subjects received the same intervention at each of the tree sessions to examine any changes in response with repeated intervention.

Intervention Type

Other

Primary outcome measure

Pain is measured using the Visual Analogue Scale for pain experienced at baseline and after session one, two and three.

Secondary outcome measures

1. Self-reported disability is measured using Roland Morris Disability Questionnaire at baseline and after session one, two and three

2. Pressure pain threshold is measured using a manual algometry pressure on the spinal muscles at baseline and after session one, two and three

3. Muscular reflexogenic responses (peak EMG amplitude) are measured using surface electromyography at session one, two and three

Overall study start date

01/04/2005

Completion date

11/06/2007

Eligibility

Key inclusion criteria

Adults aged 18 to 60 with low back pain
Roland Morris Pain and Disability Questionnaire (RM) score of 4 or more at the initial examination
Symptoms for at least 3 weeks

Participant type(s) Patient

Age group Adult

Lower age limit 18 Years

Sex Both

Target number of participants 38 in each arm

Key exclusion criteria

- 1. Frank spinal deformity
- 2. Lumbosacral anomalies
- 3. Neoplastic disease of skeletal or soft tissue of the spine
- 4. Bone disease e.g. Paget's disease, osteoporosis, osteomyelitis
- 5. Inflammatory arthritis, rheumatoid arthritis, ankylosing spondylitis
- 6. Gout
- 7. Cord signs: signs of a upper motor neuron lesion at the spinal cord level
- 8. Positive Lhermitte's sign: This is where on flexion of the neck tingling or shock like sensations run down the arms to the fingers or down the legs and is a sign of a lesion in the posterior columns of the cervical cord (Draper, 1985).
- 9. Cervical and thoracic joint conditions producing neurological symptoms in one or both lower limbs
- 10. Evidence of involvement of one or more spinal nerve root
- 11. Cauda equina syndrome- triad of low back and or leg pain, numbness in the sacral region and loss of bladder or bowel control (Draper, 1985).
- 12. Advanced diabetes when tissue vitality might be low
- 13. Vascular abnormalities, visceral arterial disease
- 14. Congenital generalised hypermobility Ehlers-Danlos syndrome
- 15. Advanced degenerative changes
- 16. Severe root pain
- 17. Undiagnosed pain
- 18. Painful joint conditions, psychologically reinforced where manipulation runs the risk of producing an obsessional neurosis of vertebral displacement.
- 19. Warfarin sodium anticoagulant medication.
- 20. Pregnancy

Date of first enrolment

01/06/2005

Date of final enrolment

01/03/2007

Locations

Countries of recruitment England

United Kingdom

Study participating centre Wellcome Clinical Research Facility Central Manchester Foundation NHS Trust Grafton Street Manchester Manchester United Kingdom M13 9WL

Sponsor information

Organisation University of Manchester

Sponsor details Oxford Road Manchester Manchester England United Kingdom M13 9PL

Sponsor type University/education

Website www.manchester.ac.uk

ROR https://ror.org/027m9bs27

Funder(s)

Funder type Other

Funder Name Investigator initiated and funded

Results and Publications

Publication and dissemination plan Planned publication in a high impact peer reviewed journal.

Intention to publish date 01/05/2017

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Christopher McCarthy

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<u>Basic results</u>		31/03/2017	24/04/2019	No	No
Results article	results	01/10/2019	22/10/2019	Yes	No