ISRCTN19551752 https://doi.org/10.1186/ISRCTN19551752

A clinical study on neck movement exercises for cervical spondylosis treatment

Submission date
28/11/2025

Recruitment status
No longer recruiting

Registration date
02/12/2025

Overall study status
Completed

Last Edited
02/12/2025

Condition category
Musculoskeletal Diseases

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Cervical spondylosis is a common condition that causes neck pain, stiffness, and difficulty moving the neck. These problems can limit daily activities and reduce quality of life. Exercises that help the neck joints move better are often recommended to relieve pain and improve neck function. This study aims to find out whether adding neck joint movement exercises to standard medication is more effective than medication alone. The study uses our validated camera-based system, RomIX, to measure how well patients can move their neck in different directions before and after treatment.

Who can participate?
Adults aged 18 - 60 years who have been diagnosed with cervical spondylosis and experience symptoms such as neck pain, stiffness, reduced neck movement, or related arm discomfort. Participants must be suitable for taking non-steroidal anti-inflammatory drugs (NSAIDs).

What does the study involve?
Participants are randomly assigned to one of two groups: control group receives standard NSAIDs and exercise group receives the same medication plus daily neck joint movement exercises performed by trained physiotherapists for 14 days.
All participants are assessed at baseline, after the 14-day treatment, and follow-up after 3 months. Assessments include VAS pain level, NDI functional disability, SF-36 quality of life, and neck movement measured using RomIX.

What are the possible benefits and risks of participating?
Participants may experience reduced neck pain and better neck mobility. The exercises are within a comfortable range and administered by trained physiotherapists. Only mild and self-limiting adverse events were reported in patients receiving joint exercises. Drug-related side effects such as stomach discomfort may occur but are usually mild.

Where is the study run from?
Ho Chi Minh City Hospital for Rehabilitation – Occupational Diseases, Vietnam

When is the study starting and how long is it expected to run for?
November 2023 to May 2025

Who is funding the study?
Korea International Cooperation Agency (KOICA) under the project “Education and Research Capacity Building Project at University of Medicine and Pharmacy at Ho Chi Minh City” (Project No. 2021-00020-3).

Who is the main contact?
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Contact information

Type(s)
Principal investigator, Scientific, Public

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Study information

Scientific Title
Effectiveness of neck joint movement exercises in patients with cervical spondylosis: A randomized controlled trial using a photogrammetric instrument

Study objectives
This randomized controlled trial aims to evaluate whether adding neck joint movement exercises to standard medication provides greater improvement in patients with cervical spondylosis compared with medication alone

Ethics approval required
Ethics approval required

Ethics approval(s)

approved 01/11/2023, Ethics Committees of Ho Chi Minh City Hospital for Rehabilitation – Occupational Diseases (313 Au Duong Lan, Chanh Hung Ward, Ho Chi Minh City, 700000, Viet Nam; +84 2838569147; bvphcn.syt@tphcm.gov.vn), ref: No. 18/HDDD-BVPHCN-DTBNN

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Placebo

Assignment
Parallel

Purpose
Device feasibility, Treatment

Study type(s)

Health condition(s) or problem(s) studied
Treatment for patients with cervical spondylosis

Interventions
Control group: Participants receive standard pharmacological management for cervical spondylosis, namely NSAIDs (meloxicam 7.5 mg, celecoxib 200 mg, or diclofenac 50 mg), taken twice daily for 14 days. For participants with gastrointestinal risk, omeprazole 20 mg is co-administered twice daily.

Exercise group: Participants receive the same medication plus daily neck joint movement exercises performed by physiotherapists. The exercises include cervical flexion-extension, rotation, and side-bending mobilization techniques performed within a comfortable range. Each technique is repeated for 8–10 cycles per direction.

Outcomes assessed include VAS pain level, NDI functional disability, SF-36 quality of life, and active cervical range of motion measured using the RomIX photogrammetric instrument. Assessments are performed at baseline, after the 14-day intervention, and at 3-month follow-up.

Participants were randomized in a 1:1 ratio into the control or exercise group using a permuted block sequence with a block size of 4 in RStudio version 4.4.0 to ensure balanced allocation between the two groups. Due to nature of the interventions, clinicians and participants were aware of group assignments. However, all outcomes and data analysts were blinded to allocation, and participants were instructed not to disclose their assigned group during assessments.

Intervention Type

Behavioural

Primary outcome(s)
1. Neck pain level measured using VAS at Baseline, Day 14, and 3-month follow-up

2. Functional disability measured using NDI at Baseline, Day 14, and 3-month follow-up

3. Health-related quality of life measured using SF-36 at Baseline, Day 14, and 3-month follow-up

4. Cervical mobility measured using active cervical range of motion measured using RomIX photogrammetric system at Baseline, Day 14, and 3-month follow-up

Key secondary outcome(s))

Completion date
31/05/2025

Eligibility

Key inclusion criteria
1. Adults aged 18 – 60 years diagnosed with cervical spondylosis, with at least one of the following:
1.1. Cervical spine syndrome with neck pain, paraspinal tightness, or restricted cervical mobility;
1.2. Cervical radicular symptoms, including arm pain, paresthesia, or symptom provocation with neck movements; or
1.3. Vertebral artery-related symptoms, such as occipital headache, dizziness, tinnitus, or visual disturbance associated with neck posture.
2. Radiographic confirmation with cervical X-ray showing Kellgren-Lawrence grade 1 – 2 degenerative changes was required. 3. Magnetic resonance imaging (MRI) was obtained when needed to clarify root involvement or exclude alternative pathology. 4. Participants also needed to have no contraindications to oral NSAIDs.

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Upper age limit
60 years

Sex
All

Total final enrolment
120

Key exclusion criteria
1. Clinical signs of cervical myelopathy
2. Cervical disc herniation on MRI
3. Secondary causes of neck pain (trauma, tumour, infection, osteoporosis, inflammatory disorders, or soft-tissue pathology)
4. Pregnancy or breastfeeding
5. Indication for surgical management
6. Severe hepatic impairment
7. Severe renal failure without dialysis
8. Recent or active gastrointestinal or intracranial bleeding, or systemic bleeding disorders
9. Uncontrolled severe heart failure

Date of first enrolment
01/11/2023

Date of final enrolment
31/05/2025

Locations

Countries of recruitment
Viet Nam

Study participating centre
Ho Chi Minh City Hospital for Rehabilitation – Occupational Diseases
313 Au Duong Lan, Chanh Hung Ward
Ho Chi Minh City
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Sponsor information

Organisation
Ho Chi Minh City Hospital for Rehabilitation – Occupational Diseases

Funder(s)

Funder type

Funder Name
Korea International Cooperation Agency

Alternative Name(s)
KOICA

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Korea, South

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated and/or analysed during the current study will be published as a supplement to the results publication

IPD sharing plan summary
Published as a supplement to the results publication

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet			02/12/2025	No	Yes