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A study on the efficacy and safety of Ruyi Zhenbao tablets for patients with lumbar disc herniation

Submission date
22/08/2024

Recruitment status
Recruiting

Registration date
30/08/2024

Overall study status
Ongoing

Last Edited
28/08/2024

Condition category
Musculoskeletal Diseases

[X] 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
A lumbar disc herniation is a spinal condition where part of a disc in the lower back pushes out and presses on nearby nerves. This can cause symptoms like lower back pain, pain that radiates down the legs, and numbness in the legs. This condition commonly affects middle-aged and elderly people. However, its incidence is also increasing among younger populations due to poor lifestyle and work habits. Effective and safe treatment options are crucial to improving patients' quality of life.
This research falls within the fields of orthopedics and pain management, with a specific focus on evaluating the effectiveness and safety of the Tibetan medicine Ruyi Zhenbao tablets in treating lumbar disc herniation. This study aims to compare the outcomes of Ruyi Zhenbao tablets with those of the standard treatment, providing evidence-based support for the broader clinical application of Ruyi Zhenbao tablets.

Who can participate?
Patients aged 18-65 years with lumbar disc herniation

What does the study involve?
Participants will be randomly assigned to two groups (the treatment group and the positive control group). Patients in the treatment group will receive Ruyi Zhenbao tablets, while those in the control group will receive a positive control medicine. When the pain score is high, additional treatments such as nonsteroidal anti-inflammatory drugs (NSAIDs), diuretics, and/or corticosteroids will be administered. The study will evaluate lumbar joint dysfunction, the severity of lower back and leg pain, numbness, the proportion of participants in each group requiring rescue therapy, and adherence to health education. The effectiveness of treatment will be assessed in both groups, with all patients undergoing a 4-week treatment period followed by a 4-week follow-up.

What are the possible benefits and risks of participating?
The possible benefits of this study include improvement in lumbar spinal joint dysfunction and relief of lower back and leg pain and numbness. The possible risks include nausea, vomiting, acid

reflux, heartburn, abdominal bloating, diarrhoea, headache, dizziness, rash, skin itching, and erythema (skin redness).

Where is the study run from?
Beijing University of Chinese Medicine (China) (management institution - please see study participating centres for a full list of centres)

When is the study starting and how long is it expected to run for?
July 2024 to December 2026

Who is funding the study?
Tibet Cheezheng Tibetan Medicine Co., Ltd. (China)

Who is the main contact?
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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
20240722V2.0

Study information

Scientific Title
Efficacy and safety of Ruyi Zhenbao tablets for patients with lumbar disc herniation: a multicenter, randomized, positive-controlled trial

Acronym
RLDHR

Study objectives
The Ruyi Zhenbao tablets can alleviate clinical symptoms such as pain and lumbar dysfunction in patients with lumbar disc herniation, and their clinical efficacy is not inferior to that of diclofenac sodium sustained-release tablets.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 23/07/2024, Peking University Third Hospital Medical Science Research Ethics Committee (No. 49, Huayuan North Road, Haidian District, Beijing, 100191, China; +86 (0)10 82265573; 1500560252@qq.com), ref: (2024) Ethical Review No. (545-02)

Study design
Multicenter randomized positive control trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
No participant information sheet available

Health condition(s) or problem(s) studied
Lumbar disc herniation

Interventions
Eligible patients who meet the inclusion and exclusion criteria will be randomly assigned to either the treatment group or the control group, with 200 patients in each group. The randomization sequence will be generated using SAS software, a programming language and environment designed for statistical computations. To ensure allocation concealment, the study drugs will be distributed, packaged, and coded by independent researchers. Hospital research staff will be responsible for managing drug distribution, and upon patient enrollment, they will assign the corresponding drug sequence numbers to the respective participants.

Before treatment, all patients will undergo a general physical examination, magnetic resonance imaging (MRI) or computed tomography (CT) scan, and laboratory tests (including routine blood and urine tests, as well as liver and kidney function tests). The Leeds Assessment of Neuropathic Symptoms and Signs (LANSS) Pain Scale will be used to screen patients for neuropathic pain. For those who meet the inclusion criteria and are enrolled in the study, relevant traditional Chinese medicine (TCM) symptom characteristics will be recorded. Additionally, a series of assessments will be conducted, including the Visual Analog Scale (VAS) for pain (assessing both lower back and leg pain separately), the VAS for numbness, the Japanese Orthopaedic Association (JOA) Back Pain Evaluation Questionnaire, the Oswestry Disability Index (ODI), and the recording of concomitant or co-administered medications (including drug names, dosages, and frequencies).

During the treatment phase, patients in the treatment group will receive Ruyi Zhenbao tablets, while those in the control group will receive diclofenac sodium sustained-release tablets. Participants may continue using their regular medications for underlying conditions, such as antihypertensives, antidiabetics, or lipid-lowering agents, throughout the clinical study. The treatment regimen for the treatment group will consist of Ruyi Zhenbao Tablets administered orally at a dose of 2 g twice daily for a period of 4 weeks. The control group will receive Diclofenac Sodium Sustained-Release Tablets, taken orally at a dose of 75 mg once daily for 4 weeks.

If a patient's VAS score reaches or exceeds 7 points on the 0 to 10 scale, rescue therapy will be initiated, which may include nonsteroidal anti-inflammatory drugs (NSAIDs), diuretics, and/or corticosteroids. The use of traditional Chinese medical treatments, such as infrared irradiation, cupping, acupuncture, or Chinese herbal medicine, is prohibited during the study. Following the completion of treatment, patients will be followed up for an additional 4 weeks.

Intervention Type
Supplement

Primary outcome measure
1. Lower back and leg pain assessed using a Visual Analogue Scale (VAS) at baseline, and at the end of the 1st, 2nd and 4th weeks of treatment, as well as during the 2nd and 4th weeks of

follow-up after the treatment concludes.
2. Lumbar function and symptoms evaluated using the Japanese Orthopaedic Association (JOA) score at baseline, after the 2nd and 4th weeks of treatment, and during the 2nd and 4th weeks of follow-up post-treatment.

Secondary outcome measures
1. Lower back and leg numbness measured using a VAS at baseline, and at the end of the 2nd and 4th weeks of treatment, as well as during the 2nd and 4th weeks of follow-up after the treatment concludes.
2. The improvement in functional disability of the subjects is assessed using the Chinese version of the Oswestry Disability Index (ODI) questionnaire at baseline, and at the end of the 2nd, 4th weeks of treatment, as well as during the 2nd and 4th weeks of follow-up after the treatment concludes.
3. After patients in both groups received the start of treatment, the receipt of emergency treatment after adverse events and their respective treatments were recorded.
4. Laboratory tests will include a complete blood count, urinalysis, liver function tests (ALT, AST, ALP, TBIL, γ-GT), and kidney function tests (Scr) at baseline, with liver and kidney function tests repeated after 4 weeks of treatment.
5. Adverse events occurring during the intervention and follow-up periods will be documented for both groups.

Overall study start date
01/07/2024

Completion date
31/12/2026

Eligibility

Key inclusion criteria
1. Patient who meets the diagnostic criteria for lumbar disc herniation: with the guidance from the diagnostic criteria for lumbar disc herniation as outlined in the following guidelines: an evidence-based clinical guideline for the diagnosis and treatment of lumbar disc herniation with radiculopathy from the North American Spine Society (NASS, 2014), Clinical practice guideline for diagnosis and treatment of lumbar disc herniation(2020) from Chinese Orthopaedic Association of Spinal Surgery Group and Chinese Orthopaedic Association of Orthopaedic Rehabilitation Group, and the Chinese Pain Expert Consensus on the Diagnosis and Treatment of Lumbar Disc Herniation (2020). The diagnostic criteria for this study require that patients meet at least three of the first six criteria listed below, in combination with the seventh criterion (If the patient has had a CT or MRI within the past three months that provides sufficient information for a clinical diagnosis, further imaging is not required. However, if the previous imaging report is insufficient, a repeat examination is necessary). The criteria for diagnosing lumbar disc herniation are as follows:
1.1. Low back pain
1.2. Radiating pain in the lower limbs, corresponding to the distribution of the affected nerve
1.3. Sensory disturbances in the lower limbs, with decreased superficial sensation in the skin areas corresponding to the affected nerve
1.4. Positive Straight Leg Raise (SLR) test, Positive SLR enhancement test, Positive Contralateral SLR test, or Positive Femoral Nerve Stretch test
1.5. Diminished tendon reflexes compared to the healthy side
1.6. Decreased muscle strength

1.7 MRI or CT of the lumbar spine showing a herniated disc with nerve compression and symptoms and signs consistent with those of the involved nerve
2. Patients must present with symptoms of pain, numbness, or muscle tension in the lower back and/or lower limbs.
3. Patients must exhibit limited lumbar mobility, such as inability to bend forward, difficulty turning over in bed, or inability to sit for more than one hour.
4. Patient's Visual Analog Scale (VAS) score for pain: 30 mm ≤ VAS < 70 mm
5. Oswestry Disability Index (ODI) Score: 20% < ODI ≤ 80%
6. 18-65 years old
7. Patients must voluntarily agree to participate in the study and sign the informed consent form

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Upper age limit
65 Years

Sex
Both

Target number of participants
400 participants (200 participants in each group)

Key exclusion criteria
1. Patients with combined spondylolisthesis or severe nucleus pulposus protrusion causing significant cauda equina nerve compression, or substantial and progressive loss of motor function, or those with clear surgical indications who are unsuitable for conservative treatment
2. Patients suffering from other diseases with symptoms of lower back and leg pain, such as lumbar spinal stenosis, spondyloarthritis, ankylosing spondylitis; other possible diseases include but are not limited to osteoporosis, tumors, or herpes zoster virus infection, visceral diseases (such as pelvic inflammatory disease, appendicitis, or cholecystitis), gynecological diseases, muscle or ligament strains
3. Patients allergic to the study drug or with an allergic constitution, or those with contraindications to drug use
4. Patients with severe cardiovascular, cerebrovascular, liver, kidney diseases, or severe primary systemic diseases
5. Patients with mental disorders or dementia who are unable to cooperate in completing the clinical study
6. Pregnant or breastfeeding women
7. Patients who are simultaneously participating in other clinical trial studies
8. Patients involved in litigation or legal claims

Date of first enrolment
23/09/2024

Date of final enrolment
23/09/2025

Locations

Countries of recruitment
China

Study participating centre
Peking University Third Hospital
No. 49, Huayuan North Road, Haidian District
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China
100191

Study participating centre
Guangdong Provincial Hospital of Chinese Medicine
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Sponsor type
Industry

Funder(s)

Funder type
Industry

Funder Name
Tibet Cheezheng Tibetan Medicine Co., Ltd (China)

Results and Publications

Publication and dissemination plan
1. The study protocol will be submitted to a peer-reviewed journal
2. The results will be submitted to a peer-reviewed journal

Intention to publish date
31/12/2026

Individual participant data (IPD) sharing plan
The current data sharing plans for this study are unknown and will be available at a later date

IPD sharing plan summary
Data sharing statement to be made available at a later date