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🌐 Intra-articular Injection with Strengthening Exercise and Physiotherapy for Knee Osteoarthritis

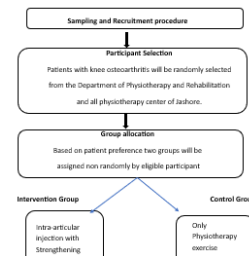
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We use this protocol and it's working

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Abstract

This randomized controlled, single-blind trial will compare the effectiveness of a 40 mg triamcinolone acetonide intra-articular injection combined with strengthening exercises versus conventional physiotherapy in adults aged 40–70 years with knee osteoarthritis. Sixty participants will be randomly assigned to either the injection-plus-exercise group or the physiotherapy-only group, receiving three sessions per week for eight weeks. Pain will be the primary outcome, measured by the Numeric Pain Rating Scale (NPRS), secondary outcomes—physical function, joint range of motion, lower-limb strength, and mobility—will be evaluated using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), goniometer, 30-Second Sit-to-Stand Test, and Timed Up and Go Test.

The study is expected to show greater improvements in pain relief, mobility, range of motion, and muscle strength in the injection-plus-exercise group compared to physiotherapy alone. These findings may support more effective, evidence-based treatment strategies for knee osteoarthritis in clinical practice.

Attachments



Treatment Procedure....

14KB



Protocol Summery.doc...

19KB

Guidelines

To ensure accurate and standardized execution of the randomized controlled trial (RCT) evaluating intra-articular corticosteroid (CS) injection combined with strengthening exercises and physiotherapy in knee osteoarthritis, the following guidelines must be followed:

Study Oversight:

Conduct the single-center RCT at JUST. Randomization will use a computer-generated sequence with allocation concealment via sealed envelopes.

Blinding:

Outcome assessors will be blinded to group allocation.

Training:

Ensure trained professionals perform all interventions.

Orthopedic Surgeon: CS injection administration

Certified Physiotherapist: Supervised strengthening exercises

Assessors: Outcome measurement tools (NPRS, WOMAC, TUG, 30-STS, goniometer)

Participant Screening:

Confirm eligibility based on inclusion criteria: age 40–70, pain, morning stiffness of shorter than 30 minutes or knee crepitus confirmed by a rheumatologist (grades I–III in the Kellgren Lawrence score).

Intervention Delivery:

Control Group: Deliver an 8-week supervised physiotherapy exercise program (3 sessions per week)

Experimental Group: Intra-articular CS injection plus strengthening exercise program starting 7 days post-injection.

Outcome Assessments:

Blinded assessors will measure pain (NPRS), functional mobility (TUG), strength (30-STS), knee ROM (goniometer), and physical function (WOMAC).

Data Management:

Record data on structured forms, anonymize participant information, store in a password-protected database, and conduct regular quality checks to ensure accuracy and completeness.

Materials

Materials

1. Corticosteroid Injection

Preparation: 40 mg Triamcinolone Acetonide, 2% lidocaine

Injection Equipment: 25-gauge needles, 10 ml syringes

2. Strengthening Exercises

Equipment: Resistance bands, ankle weights, floor mats, pillows/bolsters.

Instructional: Printed exercise guides (English/Bengali), home exercise diaries.

Monitoring: Timer, attendance and adherence log sheets.

3. Outcome Assessments

Pain: Numeric Pain Rating Scale (NPRS)

Physical Function & Strength: WOMAC and 30-Second Sit-to-Stand (30-STS) setup (chair, stopwatch), Timed Up and Go (TUG) setup, goniometer for ROM.

4. Data Management

Forms: Data collection sheets for NPRS, WOMAC, TUG, 30-STS, ROM, and adverse events.

Storage: Password-protected computer database, external hard drive/secure cloud storage, locked filing cabinet for physical forms.

5. Safety/Emergency

Supplies: First aid kit, hand sanitizers, surface disinfectants, and emergency contact list.

6. Participant Materials

Informed consent forms and study information sheets (English/Bengali).

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