

Immediate effects of leg-press exercises in individuals with knee osteoarthritis

Gamada A Gudina

Jaypee University of Information Technology, India

Abstract

Although patients with knee osteoarthritis (OA) demonstrate abnormal kinematics involving greater tibial external rotation during squatting, there have not been any previous studies investigating an exercise focused on correcting knee rotational kinematics. This study aimed to determine the immediate effects of exercise with tibial internal rotation (IR) on symptoms and functions in patients with knee osteoarthritis (KOA). This study provides Level II evidence using a small randomized controlled trial. Sixty patients were allocated to either the tibial IR or neutral rotation (NR) group in this randomized controlled trial. The IR group performed a leg press activity with the tibia in maximal IR, whereas the NR group performed leg press activity with the tibia in NR. Outcome measures were (a) 10-m walk test; (b) Timed Up and Go test, (c) knee flexion angle while squatting, (d) knee pain during walking and squatting, and (e) difficulty during walking and squatting. The IR group exhibited greater improvements than the NR group on all outcome measures. After a single session, leg press activity with the tibia in maximal IR improved the symptoms and functions measured in this study more effectively than leg press activity with the tibia in a neutral position. This suggests that correcting rotational malalignment is more important than strengthening the quadriceps for maintaining or even improving function of OA knees.

Received Date: July 5, 2022

Accepted Date: July 10, 2022

Published Date: July 28, 2022

Biography

Gamada A Gudina received PhD degree from Jaypee University of Information Technology, Wazirpur, Solan. She has a teaching experience of around 14 years. She has specialization in Biomedical Signal Processing, Computer- Aided design of FPGA and VLSI circuits, combinatorial optimization. She has published more than 50 papers in reputed journals and 30 papers

in International conferences. She is a senior member of IEEE, life member of Biomedical Engineering Society of India and member of IAENG. She has completed one externally funded project funded by DRDO entitled "Fabrication of Energy Harvesting Prototypes Using Piezoelectric Materials " and one accepted project in Himachal Pradesh Council for Science, Technology & Environment (HIMCOSTE), H.P.