DULOXETINE PLUS EXERCISE FOR KNEE OSTEARTHRITIS AND DEPRESSION (DEKODE)

Keywords: Non-pharmacological interventions, Mental health, Comorbidities

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Background: Depression is common in patients with knee OA, and clinical guidelines do not advise treating both conditions simultaneously. However, recent research recommends combining interventions that address symptoms of both conditions to maximize efficacy. Exercise improves pain, disability, and mood, but chronic pain and depression are barriers to physical activity in this population. Duloxetine is indicated to treat neuropathic pain and depression among knee OA patients and could serve as a therapeutic complement to exercise.

Objectives: To assess the feasibility of a 24-week, center-based, aerobic exercise program plus duloxetine to treat knee OA and depression.

Methods: Participants were recruited between August 2021 and November 2022 from the University of Maryland and VA Maryland Health Care Systems and study advertisements. Inclusion criteria were: English speaking; age 40 years or older; symptomatic knee OA satisfying ACR criteria; major depression according to the SCID-I (Structured Clinical Interview for DSM-V, ruling out history of bipolar disorder or psychotic symptoms; substance abuse disorder or suicidal ideation in the last year); no plans for knee surgery; and ability to walk on a treadmill. Exclusions included: exercising at least twice per week; taking duloxetine, antipsychotics, benzodiazepines, or opioid analgesics; cognitive impairment; comorbidity precluding exercise; and pregnant or lactating women. Participants began duloxetine (30 mg/day) as they started exercising, titrating up to a daily optimal dose of 60 mg/day. They were expected to complete 3 supervised treadmill walking sessions per week based on an individualized training plan defined by peak heart rate achieved during a graded exercise test. Data were collected at baseline and 12- and 24-weeks. Feasibility was evaluated via recruitment rates, reasons for drop out, and treatment adherence. Depression and pain severity were measured using the Hamilton Depression Rating Scale (HAM-D) and Knee Injury and Osteoarthritis Outcome Score (KOOS) pain subscale, respectively.

Results: Among 377 interested adults, 98 completed telephone pre-screening (Figure 1). Common reasons for not pre-screening included time commitment (n=39), no depression (n=27), concerns about medication (n=25), already on antidepressants (n=20), and knee surgery (n=12). There were 68 ineligible prescreened individuals who did not satisfy criteria for probable depression (n=45), medications (n=16), knee OA symptoms (n=8), or exercise (n=2). The 30 eligible candidates were invited to in-person screening visits, but 21 did not attend, and only 9 were enrolled. These 9 participants were older women (mean age=64.7 years), 8 identified as Black/African American, 7 attended and/or graduated from college, 3 were married, and 4 were retired. During the in-person screening process, 6 participants did not satisfy DSM-V criteria for major depression, 1 voluntarily withdrew from the study, and only 2 satisfied all eligibility criteria. One participant withdrew at baseline due to a non-study related adverse event and another completed the study protocol. The participant who completed the study was almost 100% adherent to duloxetine and experienced a reduction in depression severity from baseline to 24 weeks (HAM-D=25 to 1). By contrast, exercise compliance was low, with only 26% of planned sessions completed, and knee pain severity changed little from baseline (KOOS=41.7 to 44.4).

Conclusion: Treating knee OA and depression with a center-based exercise program and duloxetine had low feasibility. Critical design challenges amenable to change included the time commitment of 3 weekly supervised exercise sessions among interested individuals and depressive symptoms not satisfying diagnostic criteria for major depression for persons who wanted treatment. A hybrid or home-based exercise program plus duloxetine may be more feasible, and knee OA patients with depressive symptoms who are at risk for major depression could benefit from preventive intervention.

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Crystal arthritis: what is new?

DIAGNOSTIC PERFORMANCE OF HIP ULTRASOUND IN CALCIUM PYROPHOSPHATE DEPOSITION DISEASE

Keywords: Ultrasound, Validation, Crystal Arthritis

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Background: Calcium Pyrophosphate Deposition Disease (CPPD) is a chronic and potentially incapacitating disease. The reference standard for its diagnosis is the identification of calcium pyrophosphate (CPP) crystals in synovial fluid. Ultrasound (US) has been proven to be a high-sensitivity and specificity tool for diagnosing CPPD. Still, its diagnostic performance for hip joint involvement has yet to be determined.

Objectives: To evaluate the diagnostic performance of US compared with synovial fluid analysis and histopathology (hyaline cartilage, fibrocartilage, synovial membrane) for the identification of hip CPP deposits.

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