INVESTIGATION OF THE EFFECTS OF BALANCE TRAINING ON BALANCE AND FUNCTIONAL STATUS IN PATIENTS WITH TOTAL HIP ARTHROPLASTY DUE TO OSTEOARTHRITIS: A RANDOMISED CONTROLLED PILOT STUDY

N. Elıbol1, B. Unver1, V. Karatosun1, Physiotherapy and rehabilitation, European of Lefke University, 2Physiotherapy and rehabilitation; 3Orthopaedics, Dokuz Eylul University, Izmir, Turkey

Background: Osteoarthritis (OA) of the hip is one of the most common disorders in musculoskeletal system. The hip osteoarthritis is painful and this causes disability of various degrees, postural and gait disorders. Total hip arthroplasty (THA) has been to one of the most frequent elective surgical procedures that can effectively reduce pain and improve the function in patient with hip OA. It was reported that patients with coxarthrosis and THA have decreased proprioception with motor control and balance disorders, compared to healthy subjects.

The purpose of current study was to investigate the effects of balance exercises on balance and functional level with objective assessment methods until the 26th week of surgery in patients with THA.

Objectives: The purpose of our study is investigating of the effects of balance training on balance and functional status in patients with THA.

Methods: Sixteen patients with unilateral elective THA were randomised to 2 groups: conventional rehabilitation (CR, n=8) or conventional rehabilitation plus balance training (CR + BT, n=8) groups. The CR group completed typical surgery-specific joint range-of-motion and muscle strengthening exercises, while the CR + BT group completed the CR plus balance exercises during 6 weeks. The patients were evaluated by single leg stance test, Tetrax balance system, Harris hip scoring, lowering extremity function scale, 5 times sit to stand test and 50-foot timed walk test preoperatively and 8, 14, and 26 weeks after THA.

Results: While there was significant improvement, in terms of on the right extremity eyes closed single leg stance test in the CR group (p<0.05), there was no significant difference in terms of other assessment parameters between CR and CR + BT groups (p>0.05). There were significant improvement after THA surgery in both groups (p<0.05).

Conclusions: The results of our study indicate that there were similar improvements in the balance and functional parameters in the CR and CR + BT groups. There was no additional benefit of the balance exercises in balance in the 14 and 26 weeks after THA. Significant differences could be found between groups by continuing balance training with more patients for 1–2 years following THA.

REFERENCES:

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THE EFFECTIVENESS OF PHYSICAL ACTIVITY INTERVENTIONS FOR PEOPLE WITH OSTEOARTHRITIS AND OBESITY: A META-ANALYSIS

S. McKeown1, C. Jinks, E.L. Healey, J.O. Quicke. Primary Care and History Sciences, Keele University, Keele, UK

Background: Osteoarthritis (OA) is one of the diseases with the highest prevalence and morbidity. Clinical guidelines recommend physical activity (PA) for people with OA irrespective of comorbidity. Research investigating the effectiveness of PA interventions in OA and comorbidity is needed.

Objectives: To synthesise existing evidence investigating the effectiveness of PA interventions in adults with OA and obesity.

Methods: A systematic review with meta-analysis was conducted (PROSPERO registered as CRD42017075982). Six electronic databases; MEDLINE, EMBASE, AMED, CINAHL, SportDiscus and CENTRAL were searched for studies from their inception to 29.03.17. Inclusion criteria were: randomised controlled trials (RCTs) comparing the effectiveness of any PA intervention to non-PA control group; including adults aged 45 years old and over with clinical or radiographic OA at any site; at least one of the comorbidities of interest (COPD, depression, diabetes, hypertension, obesity, T2DM); and measuring pain, physical function, quality of life, global health post intervention and adverse events. Included study risk of bias (ROB) was assessed using the Cochrane risk of bias tool. Two reviewers screened titles, abstracts and full text articles, checked data extraction, and carried out ROB assessment. Random-effects model meta-analysis pooled outcomes from sufficiently homogeneous studies to calculate effect sizes (Standardised Mean Difference (SMD) with 95% confidence interval (CI)). Meta-analysis findings of the OA and obesity subgroup are reported.

Results: The literature search retrieved 8171 citations of which 14 studies (n=4422 participants) were included in the full review, with 9 (n=1382 participants) analysed in the OA and obesity subgroup. PA interventions included: aquatic, aerobic, strengthening and functional activity; of 1–18 months in duration. Four studies of OA and obesity measuring either Western Ontario Osteoarthritis Index (WOMAC) pain, WOMAC function or Six Minute Walking Test (6MWT) and were included in these meta-analyses. Best estimates showed PA to improve WOMAC pain (n=3 studies; n=547 participants; SMD: –0.09 (95% CI) –0.65, 0.47). Improve WOMAC function (n=3 studies; n=415 participants; SMD: –0.35 (95% CI) –0.89, 0.16) and the 6MWT (n=4 studies, n=573 participants; SMD: –0.93 (95% CI) –0.49, 2.3). However, results were not statistically significant. There was substantial between-trial outcome heterogeneity (I²: 89.4%, p<0.0001; 77.5% (p=0.012); 97.8% (p=0.000); respectively); results should be interpreted with caution.

ROB domain judgements were generally low to unclear. A small minority of judgements were at high risk of bias.

Conclusions: Best estimates suggest small beneficial effects of physical activity on WOMAC pain, WOMAC function and the 6MWT. Mixed effectiveness among individual RCTs was likely due to heterogeneous intervention types, intensity and duration.

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