E-Poster

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From Chronic Pain to Dynamic Function: How Exercise Retraining Redefines Chronic Rotator Cuff Tendinopathy Rehabilitation

Topic: Miscellaneous

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BACKGROUND

Chronic rotator cuff (RC) tendinopathy affects a significant portion of the working-age population, leading to persistent pain, functional limitations, and reduced work capacity. While exercise therapy is crucial, protocols integrating upper limb ergocycle training—combining aerobic conditioning, progressive resistance, and task-specific exercises—remain under-explored. This study investigates the efficacy of a structured ergocycle-based exercise retraining (ERT) program in improving physical function and facilitating occupational reintegration. This study aimed to evaluate the impact of a 12-week ERT program on physical reconditioning, functional capacity, and occupational reintegration in patients with chronic RC tendinopathy.

METHODS

This prospective study included 40 patients (18-55 years) with chronic RC tendinopathy, all of whom were eligible for rehabilitation. The patients underwent a 12-week ERT protocol using an upper limb ergocycle at the Physical and Rehabilitation Medicine Department of Ibn Rochd University Hospital in Casablanca. The program progressed through three phases: initial low-intensity endurance with isometric exercises, moderate-intensity interval training for aerobic capacity, and high-intensity intervals with occupation-specific drills. Outcomes included the Shoulder Pain and Disability Index (SPADI), QuickDASH, Western Ontario Rotator Cuff Index (WORC), Numeric Pain Rating Scale (NPRS), peak oxygen uptake (VO_2max), ultrasonographic tendon evaluation, and self-reported occupational reintegration rates.

RESULTS

After the end of the re-training program, we noted : VO_2 max increased by 18% ($p = 0.002$), ergocycle power output by 45% ($p < 0.001$), SPADI scores decreased by 36% ($p < 0.001$), QuickDASH by 29% ($p = 0.001$), and WORC by 32% ($p < 0.001$). Pain decreased by 4.5 points on the NPRS ($p < 0.001$), correlating with improved tendon homogeneity ($r = 0.67$, $p = 0.02$). Occupational reintegration was achieved by 82% of participants, with 78% maintaining outcomes at six-month follow-up.

CONCLUSION

This structured ergocycle-based ERT program effectively enhances physical reconditioning, improves functional capacity, and supports occupational reintegration in patients with chronic RC tendinopathy. It provides a practical rehabilitation framework to address physical deconditioning in this population.

Statement of Disclosures

None

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