

Physiotherapist-Supervised Exercises Compared To Unsupervised Home-Based Exercises After Non-Operatively Treated Proximal Humerus Fracture In Older Adults: A Multicentre Randomized Controlled Trial

Trauma / Shoulder & Upper Arm Trauma / Conservative Treatment & Rehabilitation

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Background

Proximal humerus fracture (PHF) is a common fragility fracture in older adults and can have a substantial impact on the upper limb function. Most of the patients can be treated non-operatively, however, it has only been sparsely investigated if patients benefit from supervised exercise therapy after a PHF.

Objectives

The objective was to investigate if physiotherapist-supervised exercises once a week during 10 weeks in combination with daily home-based exercises was superior to 10 weeks of daily home-based exercises in older adults with a non-operatively treated PHF.

Study Design & Methods

The trial was a superiority, prospective, randomized controlled trial with blinded endpoint assessors which took place in three Nordic countries. Non-operatively treated 2-part PHF patients age 60 years or older were randomized to either 10 weeks of physiotherapist-supervised exercises or 10 weeks of unsupervised home-based exercises. Follow-up visits took place after 3 and 12 months. The primary outcome measure was the Disability of the Arm, Shoulder and Hand (DASH), and secondary outcomes were the Constant-Murley Score (CS), the 15D-instrument, the Visual Analog Scale (VAS), the General Self-Efficacy scale (GSE) and the Pain Catastrophizing Scale (PCS). Non-union of the fracture and patient death within the follow-up period were counted as complications.

Results

72 patients with a non-operatively treated PHF were enrolled, with a mean age of 73 years. After 3 months the mean DASH score in the supervised group was 25.9 (SD 16.0) compared to 22.4 (18.9) in the unsupervised group. The mean difference was 3.5 (95% CI -5.0;12.5) which did not meet the minimal clinical important difference of 10 points on the DASH. Nor did we find any clinical relevant between-group differences on any of the secondary outcome scores at 3 months follow-up. At 12 months follow-up the between-group difference on DASH was 3.7 (95% CI -5.2;12.6) in favor of the unsupervised group. Similarly, there were no between-group differences in the secondary outcome measures. There was one patient in the supervised group with non-union and two patients died before 12 months follow-up. In the unsupervised group three patients suffered non-union and were operated while two patients died within the follow-up period.

Conclusions

In this trial supervised exercise for 10 weeks was not superior to unsupervised home-based exercises for 10 weeks in improving the primary outcome. These results have clinical implications since there is large variation between the type of rehabilitation offered after PHF in the Nordic countries. These results add to the pool of evidence on optimal rehabilitation and allocation of health care resources.