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REHABILITATION PROTOCOLS IN PROXIMAL HUMERUS FRACTURE MANAGEMENT: A SYSTEMATIC REVIEW

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Background: Proximal humerus fractures (PHFs) are very common in adults, especially in the elderly population. Despite their frequency, the optimal postoperative rehabilitation is unknown. A portion of the equipoise regarding optimal management of PHFs may owe to rehabilitation heterogeneity. This study aims to characterize the published rehabilitation regimens utilized for operatively and nonoperatively treated PHFs.

Methods: A systematic review was performed according to PRISMA guidelines. The search was performed using PubMed, MEDLINE, Embase, and Cochrane databases to identify all articles on PHF rehabilitation protocols published between January 1, 2012, and January 1, 2022. All clinical PHF studies were reviewed and those that reported rehabilitation protocols for PHFs after either nonoperative management, open reduction internal fixation (ORIF) with a plate, or ORIF with an intramedullary nail were included. Characteristics of rehabilitation protocols from included studies were characterized descriptively and stratified by PHF management.

Results: We included 40 articles reporting on 3,507 patients (weighted mean age=63.5 years, 66% female). The . Substantial variability was present regardless of management. Key rehabilitation modalities were reported as follows: use of a sling was reported in 34 cohorts, most commonly for 3-weeks; use of pendulum exercises were reported in 21 cohorts, most commonly starting at post-intervention day-1; post-intervention passive ROM was reported for 30 cohorts, most commonly starting at 2-days; active ROM was reported in 8 cohorts, most commonly starting at 3-weeks; active-assist ROM was reported for 21 cohorts, most commonly starting at 3-weeks; full active or unlimited ROM was reported for 20 cohorts, most commonly at 4- or 6-weeks; non-weight bearing status was reported for 6-weeks, most commonly for 6-weeks; strengthening was reported for 16 cohorts, most commonly at 6-weeks; no restrictions was reported for 9 cohorts, most commonly at 6-weeks; use of home exercise programs with handouts was reported for 4 cohorts, all starting at different times; formal physical therapy was reported for 17 cohorts, most commonly starting at day-1.

Conclusions: Rehabilitation protocols for PHFs vary considerably regardless of the management. Future clinical outcome studies comparing methods of PHF management need to consider the influence of postoperative rehabilitation protocol heterogeneity when aggregating patient data from multiple sites.