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PHYSIOTHERAPY CAN BE OPTIONAL FOR SOME PATIENTS, SAYS NEW TRIAL

Acute rehabilitation after traumatic shoulder dislocation

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Most anterior shoulder dislocations occur for the first time related to sports (59%¹ to 74%²), or from falls.¹ Following closed reduction, primary care for these injuries involve a supportive sling and individually tailored advice for optimising recovery such as rehabilitative exercises to improve range of motion, sensorimotor control, strength, and function. To inform decision making, a linked *BMJ* paper by Kearney and colleagues (doi:10.1136/bmj-2023-076925) compared the effectiveness of two different approaches to acute rehabilitation following anterior shoulder dislocations (ARTISAN) across 40 hospital sites in the UK's National Health Service. The approaches were advice, supporting materials, and the option to self-refer to physiotherapy, or the same advice and supporting materials alongside a tailored programme of physiotherapy.³

This randomised clinical trial was well planned, executed, and reported, and the authors should be commended for conducting a trial involving 482 patients (at baseline) and 96 clinicians during the covid-19 pandemic.

The primary outcome measure, the Oxford shoulder instability score, includes questions about re-dislocations, physical impairments, and psychosocial consequences of the injury. Higher scores (maximum 48) indicate better function. Trial results showed that adding an individualised physiotherapy-led exercise prescription to advice and self-management was not superior to advice and self-management alone (between group difference favouring physiotherapy 1.5 (95% confidence interval -0.3 to 3.5)). When translating the findings to general clinical practice, several factors need to be considered.

Patient preferences and shared decision making are crucial during rehabilitation following a shoulder dislocation. In Kearney and colleagues' trial, following the advice session, around 20% of participants of the advice only group self-referred to an ongoing physiotherapy programme. In the advice and physiotherapy group, close to 20% of participants attended only one or none of the physiotherapy sessions prescribed following initial advice. Thus, while some preferred a single session of advice, others preferred further treatment from a physiotherapist. Reporting the characteristics of participants (eg, age, gender, and mechanism of injury) who, in a sense, crossed over between intervention arms might have increased the clinical value of this study. The results suggest that patients with an acute, first-time shoulder dislocation could choose to start with advice only and seek physiotherapy-led exercise only if required.

The physiotherapy interventions evaluated in Kearney and colleagues' trial focused on range of motion and exercises to strengthen the posterior rotator cuff, with less attention given to subscapularis, and very few (if any) overhead exercises. Inclusion of exercises to improve the strength and motor control of subscapularis, and overhead exercises at increasing speeds may improve outcomes and should be considered in future trials.⁴

Additionally, fear of reinjury is heightened after a traumatic shoulder dislocation,⁵ remains elevated for some time,⁶ and predicts recurrent instability.² Interventions to reduce fear of reinjury include motor imagery, virtual reality, exercise pacing with metronomes,⁴ and progressive exercises to improve sensorimotor control and visuomotor reaction time.^{7,8} Such interventions are particularly important for people returning to physical occupations or sports necessitating high shoulder loads. They were not included in this trial's interventions and should be explored in future trials.

Shoulder dislocations typically differ by age.^{9,10} Younger people (<40 years, 46% of the sample) are more likely to have labral tears and recurrent dislocations.¹⁰ Older people (≥40 years, 54% of the sample) typically have more rotator cuff tears and tuberosity fractures as concomitant injuries, decreased range of motion post-injury, and lower recurrence rates.¹¹ In the ARTISAN trial, only 36% of participants were injured during a sporting activity, a lower proportion than in other studies.^{1,2} Specifically, the ARTISAN trial reported a statistically non-significant 3.8 point change (95% confidence interval 0.6 to 6.9) in Oxford shoulder instability score among younger adults (<40 years) given physiotherapy led rehabilitation. But the trial was not powered to evaluate physiotherapy-led rehabilitation in the younger group only, and the question remains whether different findings would have been seen with a larger sample of younger participants, particularly those with injuries related to sports.

Participants were recruited over three years, only the first of which was before the covid-19 pandemic. The re-dislocation rate of 2% is substantially lower than previously reported rates (between 36%² and 100%¹²) in the first year after injury. Continuing with the trial during the pandemic and post-pandemic period may have confounded results: the lower recurrence rate reported by Kearney and colleagues may be due to reduced physical demands and the suspension of team sports during the pandemic and its aftermath, as well as due to the wide age range. Thus, participants and the outcomes of the ARTISAN trial

may not be representative of the wider population of people with a first time anterior shoulder dislocation.

These authors should be congratulated for completing the multicentre ARTISAN trial during very challenging global conditions. The results show that physiotherapy-led rehabilitation, including generalised range of movement and strengthening exercises (mainly below shoulder height), plus patient advice, confers minimal advantage over advice and education alone. Caution is needed when extrapolating these results, however, particularly concerning younger patients wishing to return to sports, occupations, or activities with high shoulder loads.

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