

Abstract SMWJC21

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Effectiveness of progressive tendon-loading exercise therapy in patients with patellar tendinopathy: a randomised clinical trial

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Background and aim Patellar tendinopathy (PT) is a common chronic tendon injury that is characterised by load-related pain in the patellar tendon. It negatively impacts on participation in sports and physical work.¹ Eccentric exercise therapy (EET) is supported in several guidelines (e.g. NICE). However, EET is pain-provoking and the effects are debated when applied during the competitive season.² Progressive tendon-loading exercises (PTLE) are a novel approach consisting of advancing isometric, isotonic and plyometric exercises within the limits of acceptable pain.³ Aim of this study was to compare the effectiveness of PTLE with EET for PT.

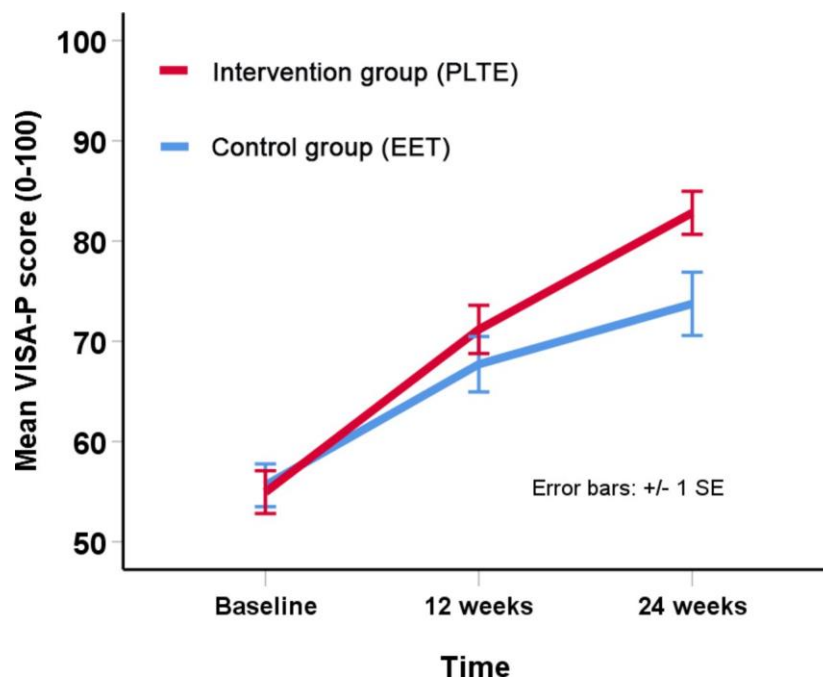
Methods In a stratified, prospectively registered (ClinicalTrials.gov:NCT02938143), investigator-blinded, prospective block-randomised trial, athletes with clinically diagnosed and ultrasound-confirmed PT were randomly assigned to receive either PTLE or EET. The primary end point was clinical outcome after 24 weeks following an intention-to-treat analysis, assessed with the validated Victorian Institute of Sports-Assessment for patellar tendons (VISA-P) questionnaire (0-100). Secondary outcomes included the return to sports rate. Statistical analysis was done using generalised estimating equations.

Results 272 individuals were screened for eligibility between January 2017 and July 2019 and 76 patients were included. The mean (SD) age was 24 (4) years, median (IQR) symptom duration 2 (1-4) years and 76% were male. 38 patients were randomised to the PTLE group and 38 patients to the EET group. Exercise adherence was similar between the PTLE and EET groups (40% vs 49%, $p=0.33$). The improvement in VISA-P score was significantly better for PTLE than for EET after 24 weeks (adjusted mean between-group difference 9 points (95% CI 1 to 16); $p=0.023$). There was a trend towards a higher return to sports rate in the PTLE group (43% vs 27%, $p=0.13$).

Conclusion In patients with patellar tendinopathy, progressive tendon-loading exercises resulted in superior clinical outcome after 24 weeks compared to usual care (eccentric exercise therapy).

Discussion This is one of the few randomised trials in sports medicine with practice-changing results. Interventions were provided using a single consultation with web-based support, making the intervention feasible and generalisable for future implementation. Our findings support the use of PTLE as new standard care for PT.

Figure



The unadjusted time course of the mean VISA-P score in the PTLE group (intervention) and EET group (control). Abbreviations: PTLE, progressive tendon-loading exercises; EET, eccentric exercise therapy; VISA-P, Victorian Institute of Sports Assessment. The error bars represent ± 1 standard error.

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