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One year follow-up in elite athletes with early tendinopathy - clinical and ultrasonography findings

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INTRODUCTION:
Knowledge of how to treat chronic tendinopathy has advanced in recent years, but the understanding of the disease progression and treatment of early tendinopathy is limited. The primary aim of this prospective observational study was to investigate possible changes in clinical and ultrasonographic imaging outcomes over the course of 12 months in elite athletes presenting with Achilles and patellar tendinopathy within <3 months after symptom onset. The secondary aim was to assess the prognostic values of the baseline ultrasonography and clinical outcomes on the progression of these outcomes.
METHODS:
Sixty-five elite adult athletes (24±5 yrs) with early Achilles or patellar tendinopathy (symptom duration <3 months) were examined at baseline and after 12 months. Recommendations on load management was the only intervention. We assessed the following clinical outcomes: Victorian Institute of Sports Assessment (VISA) questionnaires, pain (numerical rating scale 1-10 (NRS) scores), and ultrasonography outcomes: thickness, echogenicity, and Doppler flow area. A linear mixed effects model was used to analyze changes from baseline to 12 months in all outcome variables and also used to assess any potential association between baseline ultrasound findings and clinical outcomes on the changes in these parameters after 12 months, using a backward elimination process.
RESULTS:
Elite athletes with early tendinopathy had clinically relevant improvements on VISA (>14 points) and most NRS (>2 points) pain scores after 1 year. Tendinopathic Achilles and patellar tendons had greater thickness than the contralateral tendon at baseline. Injured Achilles tendons demonstrated a trend towards reduced thickness after 12 months ($p<0.1$) while injured patellar tendons remained enlarged. Lower baseline Doppler flow was associated with greater reduction in thickness after 1 year ($p<0.05$), and longer initial symptom duration was associated with greater reduction in pain over 1 year ($p<0.05$). Higher baseline VISA scores also tended to be associated with greater increases in echo intensity (less hypoechogenic) ($p<0.1$).
CONCLUSION:
These novel data suggest that symptoms of both early Achilles and patellar tendinopathy improved clinically in the long-term, but only patients with early Achilles tendinopathy showed trends towards improved morphology after 12 months. Patellar tendon thickness and echogenicity remained unchanged despite clinical improvement. Finally, lower baseline Doppler flow, longer symptom duration and better initial VISA scores tended to represent a better prognosis for tendinopathy morphology and symptoms in elite athletes.

Topic: **Sports Medicine and Orthopedics**

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