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Elite athletes with early tendinopathy - clinical and imaging findings

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INTRODUCTION:

Tendinopathy poses serious clinical and socio-economic problems, as the prevalence of tendon injuries is high. For affected individuals, the symptoms and reduction in performance often last for years and many never return to their previous performance leading to cessation of their sports career. Knowledge of how to treat chronic tendinopathy has advanced in recent years, but the disease progression and treatment of early tendinopathy is not well understood. The main purpose of this prospective observational study was to investigate possible changes in clinical and imaging (MRI and ultrasonography) outcomes over the course of 3 months in elite athletes presenting with symptoms of Achilles and patellar tendinopathy for <3 months.

METHODS:

65 elite adult athletes (24±5 years) with early Achilles or patellar tendinopathy (symptom duration <3 months) were examined at baseline and after 3 months. Patients were divided into groups based on duration of symptoms at the time of inclusion: 0-1 month (T1), 1-2 months (T2) or 2-3 months (T3). Recommendations on load management was the only intervention. We assessed the following clinical outcomes: Questionnaires (Victorian Institute of Sports Assessment (VISA)) and pain scores (0-10 numeric rating scale (NRS)), as well as ultrasonography (US) outcomes: thickness, echogenicity, and Doppler flow area. Also, dimensions (cross-sectional area (CSA), thickness and length) of the Achilles and patellar tendons were obtained by 3-Tesla MRI. A linear mixed effects model was used to analyze changes from baseline to 3 months in all outcome variables.

RESULTS:

Tendinopathic Achilles and patellar tendons revealed no significant differences on clinical scores (VISA and NRS) or any imaging (US and MRI) variables between T1 (n=19), T2 (n=23) and T3 (n=23) at baseline or after 3 months, with one exception: Patellar tendons in T1 were larger than T2 and T3 at baseline (p<0.05). Elite athletes had clinically relevant improvements on the VISA (>14 points) and most NRS scores (>2 points) after 3 months. Tendinopathic Achilles and patellar tendons had a greater thickness, CSA and Doppler flow than the contralateral tendons at baseline that remained unchanged after 3 months.

CONCLUSION:

These novel data suggest that symptoms of early tendinopathy in elite athletes improved clinically after 3 months, but morphology remained unchanged in both Achilles and patellar tendons. These data also suggest that tendon morphologic changes probably develop a long time before symptoms occur. Finally, based on previous results, recreational and elite athletes do not seem to differ in pain response or tendon dimensions.

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