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What is the evidence for use of physiotherapeutic modalities to address tendonitis in the sport horse?

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Clinical question and background
Tendonitis of the superficial digital flexor tendon (SDFT) is a common musculoskeletal injury in the sport horse [1,2], caused by direct trauma or as a result of progressive degeneration due to age or chronic overloading. Clinical treatment and physiotherapy aim to return the horse to at least its original level of performance, whilst minimising the strong risk of re-injury.

Literature search
The evidence for application of different modalities of physiotherapy is scant for treatment and/or rehabilitation of equine tendonitis. The human Achilles tendon is similar in functional and clinical structure to the SDFT of the horse [3]. For this reason, evidence-based practice (EBP) using physiotherapy for the treatment of Achilles tendinopathy (AT) was included in this overview of the efficacy of various therapeutic modalities for this condition.

Database searches were carried out in Cochrane Reviews, Medline and PEDro (Physiotherapy Evidence Database). Study types included in the searches were meta-analysis (MA), systematic reviews (SRs) and randomised controlled trials (RCT). Keywords used in the searches included tendonitis, horse, Achilles, physiotherapy, rehabilitation, laser and therapeutic ultrasound.

Conservative management of mid-portion AT was evaluated in a mixed-methods study [4], using SR outcomes from RCT and independent clinical reasoning input from physiotherapists. This review included 47 studies which were scored according the PEDro scale. Modalities were described as being strong, moderate, limited, conflicting or without evidence for use in a physiotherapeutic setting.

A review study into conservative therapy for the treatment of AT yielded 2852 search results which were evaluated using the PEDro scoring system [5]. In total, 23 suitable studies were identified, 19 of which were considered to be free of bias.

To date only one narrative review article [6] has discussed experimental and observational studies in equine physiotherapy. Experimental studies using therapeutic ultrasound showed potential for tendon healing in 3 small experimental studies. Only one study was presented in English [8], but the abstract could not be identified on the database search.

Appraisal of the evidence
[4] Strong evidence for eccentric loading exercises; moderate evidence for immobilisation with splinting or bracing in acute and chronic phases, active rest, low level laser therapy (LLLT) and concentric exercise; limited evidence for use of orthotics and application of therapeutic ultrasound stimulation (TUS) and no evidence for the use of taping techniques or soft tissue mobilisation. Eccentric loading was most commonly used in practice. Some lower quality studies were included to show all evidence. Outcome measures were found to be inconsistent. Inclusion of clinicians’ opinions was suggested as being a useful adjunct to support EBP practice.

[5] Based on pain scale responses, initial introduction of eccentric exercise with the added application of LLLT was suggested as an appropriate therapeutic approach for the treatment of AT.

[6] No studies were specific to equine tendonitis, although hydrotherapy and therapeutic controlled exercise were cited as being potentially useful in tendon healing.

Limitations of the CAT
The modalities of extracorporeal shock wave therapy (ESWT) and acupuncture were not included in this review. Although used to treat tendonitis in horses, these modalities fall outside the realm of application by a veterinary physiotherapist.

In people, pain is the overarching response variable for physiotherapeutic treatment outcome for AT, based on visual analogue scale (VAS) feedback. This response variable is not suited to monitor treatment outcomes in the horse. As such, results from human studies should not be extrapolated directly to application in the horse. Experimental studies with more objective outcome measures such as ultrasound imaging and kinematic gait assessment, as well as long-term follow-up to monitor return to performance and rate of recurrence of injury, are suggested to study the efficacy of physiotherapeutic treatment modalities to address tendonitis in the horse.

Clinical application
Based on current knowledge, a physiotherapeutic approach to address equine tendonitis should include a specific rehabilitation programme based on gradual increase of limb loading, possibly supported by application of LLLT or therapeutic ultrasound. As the condition is highly variable between horses [2], an individualised treatment programme is advised.

A common consensus in conclusions from human studies is that there is still a dearth of valid, reliable research with sufficient subject numbers and repeatable patient-oriented outcome measures to objectively evaluate the efficacy of various physiotherapeutic modalities available in the treatment of AT.

In the horse, the lack of RCT studies and constraints for research similar to those in human studies should not be reflective of an apparent lack of efficacy of physiotherapy to address tendonitis.

Clinical reasoning should be included in the decision to use physiotherapeutic modalities to address tendonitis in the horse.

References