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Hughes, T and Callaghan, M (2017) Bet 2: Laser therapy in the treatment of acute hamstring muscle injuries. Emergency Medicine Journal, 34 (4). p. 266. ISSN 1472-0205

DOI: https://doi.org/10.1136/emermed-2017-206665.2

Publisher: BMJ

Version: Accepted Version

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BET 2: LASER THERAPY IN THE TREATMENT OF ACUTE HAMSTRING MUSCLE INJURIES

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ABSTRACT

Local laser therapy has been suggested as a promising treatment for acute hamstring muscle tears. We carried out a shortcut systematic review to establish whether therapeutic lasers are beneficial for patients with acute hamstring tears. Despite a comprehensive literature search, no studies that were directly relevant to the question could be identified. The clinical bottom line is therefore that there is currently no evidence for the use of any form of laser therapy in the treatment of acute hamstring muscle tears.

CLINICAL SCENARIO

A 23-year-old patient presents with a 2-day history of an acute grade 2 hamstring tear which occurred toward the end of the first half of a football match. The patient has been using the standard protection, rest, ice, compression, elevation acute injury management regimen and referred for physiotherapy. You plan to begin an active exercise-based rehabilitation programme following day 5 postinjury. You have heard from a colleague who works in sports medicine that application of localised laser therapy can help improve pain, function and the quality of the repair site, and therefore wonder if it should form part of your treatment plan.

THREE-PART QUESTION

In (adults with acute hamstring tears) is (therapeutic laser beneficial) at (decreasing pain, improving function, improving repair quality and reducing recovery time)?

SEARCH STRATEGY

The MEDLINE (1966-11/2014), CINAHL (1982-11/2014), AMED (1985-11/2014), SPORTDiscus (1830-11/2014) and EMBASE (1996-11/2014) databases were searched using the Ovid interface.

The Cochrane Library was also searched.

(Hamstring.mp OR femoris.mp OR gracilis.mp OR semimembranosus.mp OR semiteninosus.mp) AND (exp Lasers/ OR exp Laser Therapy, Low-Level/ OR therapeutic laser.mp OR high powered lasers.mp OR exp Phototherapy/)

For Cochrane: (Laser therapy OR therapeutic laser) AND muscle injury.

Limited to humans and English language.

OUTCOME

No papers were found that had studied the effects of any form of laser therapy on function, repair and recovery time following acute hamstring muscle tears in humans. Three papers were identified that investigated the effect of laser application following delayed-onset muscle soreness/exercise-induced muscle soreness but these were excluded as this condition is not comparable pathologically with macroscopic muscular damage and therefore irrelevant to the question.

COMMENTS

The identification of three studies investigating the effect of laser on delayed-onset muscle soreness/exercise-induced muscle soreness warrants a separate systematic review in future. It appears that at present, evidence and justification to support the use of laser therapy in muscle injury is extrapolated from studies that use animal models only. Therefore, it is clear that further high-quality research is needed to investigate the effects and consequences of laser application in human acute muscle injury and hamstring muscle injury management.

Currently, there is no evidence for the use of any form of laser therapy in the treatment of acute hamstring muscle tears.

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Emerg Med J 2017 34: 266
doi: 10.1136/emermed-2017-206665.2

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