

Effect of Radial Extracorporeal Shock Wave Therapy for Overuse Injury in Athletes

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Device and producing company:

Swiss Dolor Clast, EMS

Introduction: Overuse injury is a common cause of athletes' complaints about pain and is often difficult to treat. Traditional non-operative treatment consists of rest and the administration of NSAIDs. Some studies have suggested different types of therapeutic interventions such as steroid injection, sclerosing therapy and aprotinin injection. Recently, extracorporeal shock wave therapy (ESWT) has been reported to be effective for the treatment of sports injuries. The purpose of this study was to evaluate the efficacy of radial extracorporeal shock wave therapy (rESWT) in the treatment of athletes with overuse injury.

Methods:

Sixty-nine athletes with overuse injury were treated with rESWT (13 epicondylitis of the elbow, 8 plantar fasciitis, 15 chronic Achilles tendinopathy, 21 jumper's knee and 12 tendinitis of the rotator cuff), 43 males and 26 females, aged between 20 and 35 years (mean age: 23 years). All patients must have undergone clinical diagnosis and had been treated unsuccessfully for at least 3 months, including local injections and non-steroidal anti-inflammatory drugs and physiotherapy. The evaluation consisted of assessments of pain (Visual Analogue Scale, VAS) and functional impairment. The patients were treated in 3-5 sessions (at intervals of 5-7 days, mean 6 days) with 1,500-2,500 impulses per session. Device used was the Swiss Dolor Clast (EMS, Switzerland) and the energy flux density was 0.06-0.12 mJ/mm². The patients received no anesthesia, the energy level was determined by the maximum pain induced by ESWT that could be tolerated by each patient. The pain on palpation of the injury point and pain during daily activity were evaluated at each examination. Evaluation was performed at 0, 1, and 2 weeks and 1, 2, and 4 months postinitiation of therapy. At the end of follow-up, the patients were asked to assess their level of residual pain compared with pain before treatment.

Results:

We obtained satisfactory results in 86.5% of cases (67.2% had excellent results and 19.3% showed good results), with an average time of approximately 4 weeks for resuming sport. Patients showed a considerable pain level decrease 1-2 weeks after the treatment (to the palpation $p < 0.05$ and during daily activity $p < 0.05$) and a further decrease in the subsequent examinations (to the palpation $p < 0.01$ and during daily activity $p < 0.01$). No obvious side effects were observed.

Conclusion:

The outcome of the described rESWT treatment appears to be satisfactory and confirms its role in the treatment of athletes with overuse injury.