

Improvement of pain tolerance using a new electrode adjustment in eletrohydraulic equipments

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Recent studies have demonstrated beneficial effects of Extracorporeal Shock Wave Therapy (ESWT) that consists of a sonic pulse or a focal kinetic energy, in the treatment of chronic diseases of tendons. The equipments utilized have different energy generators: piezoelectric, electromagnetic and electro-hydraulic.

The aim of this study was to evaluate the pain tolerance during ESWT applications comparing the electrode adjustment based in manufacturer guidance with a new modified procedure that consists a lesser visual distance between the metallic tips.

Patients were included if they were 18 years or older, had symptoms for at least 6 months, and/or had failed at conservative treatment. Patients were excluded if they had ESWT contra-indication and/or received local corticosteroid injection in the previous month. We followed the Visual Analog Scale (VAS). The equipment utilized was ORTHIMA (Direx), that operate with an electro-hydraulic generator. The applications consisted of 20 impulses with each adjustment, alternatively, using the same energy of $0.35\text{mJ}/\text{mm}^2$. We performed the tests before the treatments. The VAS was applied immediately after each test. The focus was the site of maximum reproduction of local pain at digitopressure. We did not use any kind of anaesthesia. We evaluated 20 patients. Bilateral disease in 3 cases, with a total of 23 feet. The VAS score was 2.3 with the new adjustment vs. 6.8 with the manufacturer orientation. Our results suggest that the electrode adjustment might be an important factor that increase the tolerability of ESWT and decrease the risks and the costs by the abolition of necessity of anaesthesia.