A Randomized, Double-blind, Placebo-controlled Study on the Efficacy of Shock Waves in the Treatment of Myofascial Pain Syndrome of the Lumbar and Gluteal Regions

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Introduction

Extracorporeal shockwave therapy (ESWT) has been used successfully in different musculoskeletal conditions. There are no randomized ESWT clinical trials on the treatment of myofascial pain syndrome (MPS) of the lumbar and gluteal regions.

Methods

This was a prospective, randomized, double-blind and placebo-controlled study. From 121 patients with moderate or severe pain lasting >6 months enrolled, a total of 46 with Visual Analogue Scale (VAS) pain intensity =4 were eligible. These were treated with antidepressants, analgesics and physical therapy for six weeks. Seven patients had significant clinical improvement and eight dropped out of the trial. The remainder 31 patients were randomized: 14 active ESWT and 17 placebo. Demographics, clinical presentation, functional disabilities, pain severity were evaluated till the 12nd month. The analyses were intention-to-treat and based on the primary outcome VAS and secondary outcomes Roland-Morris Disability Questionnaire (RDQ), Oswestry Disability Index (ODI) and Short-Form of the McGill Pain Questionnaire (SF-MPQ).

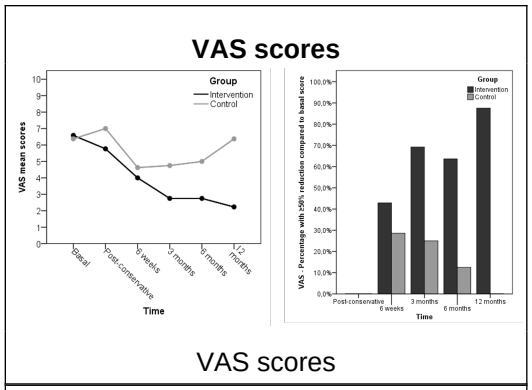
Results

The mean age was 52.4±10.4 and 64.5% female. There were no differences between the groups, except for the median pain duration (active ESWT 9 [quartiles 5-15] months vs placebo 4 [2-8] months, p=0,013). Patients treated with active ESWT presented a significant mean VAS reduction from the third till the 12nd month (basal 6.6±1.2 vs 6.4±1.8, 3-month 2.8±1.5 vs 4.8±2.0, 12-month 2.2±1.4 vs 6.4±1.8, p<0,001). At the 12nd month, more patients on the intervention group had =50% improvement on the VAS (87.5% vs 0.0%, p=0.001), RDQ (70.0% vs 14.3%, p=0.049) and ODI scores (70.0% vs 14.3%, p=0.049).

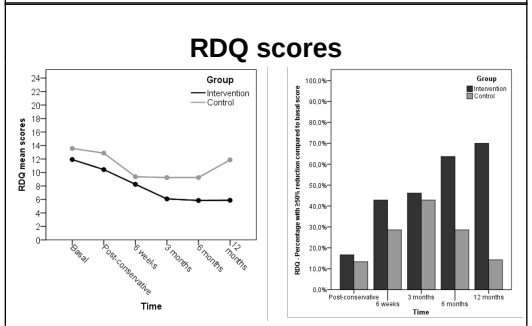
Table 1. Study sample characteristics

Variables	Total (31)	Group		p value
		Intervention (14)	Control (17)	
Age – mean ± SD	52.4 ± 10.4	53.4 ± 9.6	51.6 ± 11.3	0.633
Female – n(%)	20 (64.5)	9 (64.3)	11 (64.7)	1.000
Ethnicity – n(%)				0.924
White	21 (67.7)	10 (71.4)	11 (64.7)	
Black	5 (16.1)	2 (14.3)	3 (17.6)	
Asian	5 (16.1)	2 (14.3)	3 (17.6)	
Pain duration - median and quartiles	5 (3 - 10)	9 (5 – 15)	4 (2 – 8)	0.013

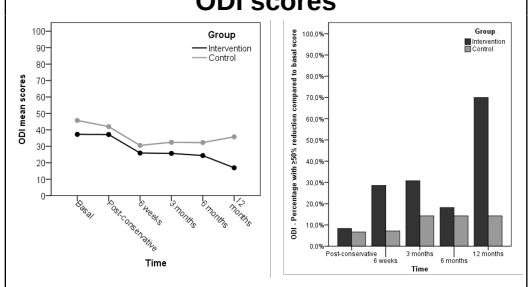
SD: Standard deviation.



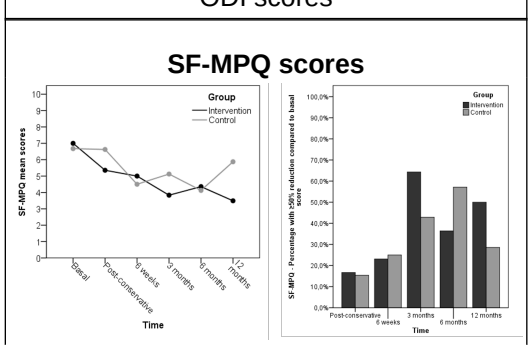
VAS scores



RDQ scores



ODI scores



SF-MPQ scores

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the potential utility of Extracorporeal shockwave therapy (ESWT) on pain management; 2) Discuss the implications of our findings for the management of myofascial pain syndrome of the lumbar and gluteal regions.

Conclusions

The active ESWT provided a significant and lasting reduction in pain intensity from the third till the 12th month of follow-up, suggesting that its analgesic effect settles late and has long duration. Additionally, it improved the functionality according to the RDQ and ODI at the 12th month.