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Background:

Patellar tendinopathy is an orthopedic chronic condition characterized by dysfunction, structural histological changes and pain in the lower pole of the patella.

VISA-P score is used to evaluate patellar tendon pain and functionality. Algometry is a validated tool to assess pain, which measures pressure pain threshold (PPT).

Tecatherapy is a kind of radiofrequency that generates local diathermy, causing analgesia.

Percutaneous Microelectrolysis (MEP®) is an alternative for treating tendinopathy that uses galvanic current in the order of micro Amperes, applied with an acupuncture needle connected to the cathode. This invasive technique claims to promote analgesia due to H₂ liberation and controlled local inflammation caused by NaOH release, leading to the repair of affected tissue.

Eccentric exercises have proved to be effective in tendinopathies

Purpose:

The aim of this study was to evaluate the effects of Percutaneous Microelectrolysis (MEP®) combined with Tecatherapy and eccentric exercises on patellar tendinopathy.

Keywords

Patellar tendon - Tendinopathy - Pain - Electrolysis - Percutaneous - Radiofrequency.

Methods:

A longitudinal, prospective, systematic sampling pilot study was performed.

Seven tendons of five patients were included in the study. Disability was measured with VISA-P.

Algometry was performed with a Wagner FDX25 algometer. The evaluation was done before and after 3 sessions.

Capacitive radiofrequency was applied with a VIP device, model Tecatherap-Plus during 7 minutes at G3 of subjective temperature scale. MEP was applied with a Sveltia device, version 3.6 and with 0.30 x 25 mm disposable acupuncture needles.

A diagnostic ultrasound (Mindray, Z5) was used to guide the procedure.

Intensity was increased up to 600 uA. When the patient related "pain", the current was paused. The procedure was repeated until the patient did not relate pain caused by electrolysis anymore.

Three sessions were performed, once per week

Treatment was combined with a home based eccentric exercise protocol (3 series of 15 reps, twice per day).



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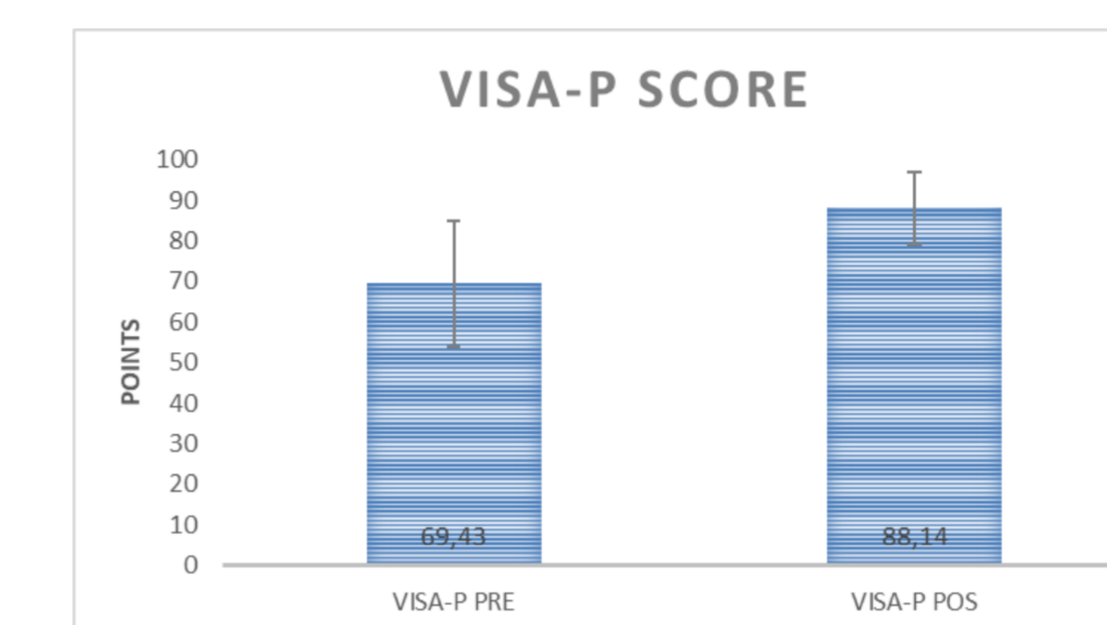


Results

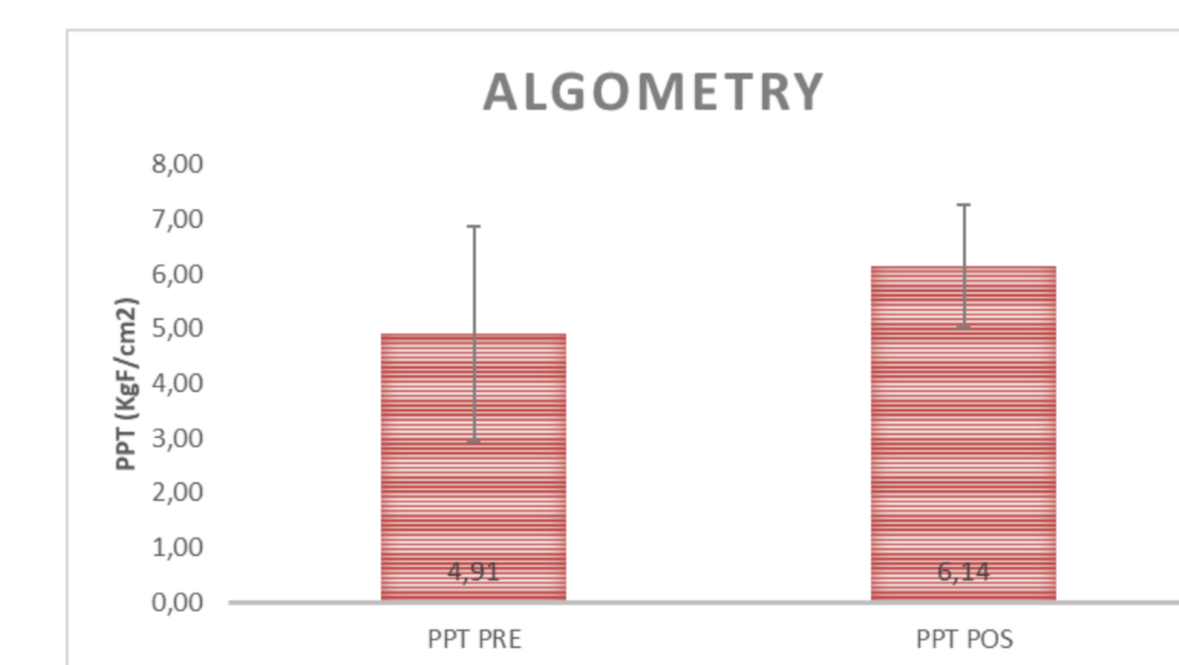
The mean value of VISA-P scale before treatment was 69.43 and after treatment was 88.14.

The mean value of PPT before treatment was 4.91 KgF and after treatment was 6.14 KgF.

	VISA-P PRE	VISA-P POS		PPT PRE	PPT POS
MEDIA	69,43	88,14	MEDIA	4,91	6,14
DES. EST	15,45	8,93	DES. EST	1,95	1,13
MAX	84	97	MAX	9,01	7,23
MIN	40	70	MIN	3,21	3,98



Grafic 1. Results of the VISA-P mean scale, pre and post treatment.



Grafic 2. Results of the mean of the evaluation with algometry, pre and post treatment.

Conclusion(s)

The functional score and the PPT values increased. The use of Percutaneous Microelectrolysis, combined with capacitive radiofrequency and a home based exercise protocol, could be a promissory treatment for patellar tendinopathies. Further studies must be done with a higher n and a control group.

Implications

In some countries shock wave therapy is not available or it is too expensive for the patients. There are many publications about MEP combined with eccentric exercises in other tendons. The application of this kind of treatment could be a cheaper and effective alternative for treating tendinopathies. This pilot study provides more scientific evidence.

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Ethics Approval

Ethics committee of Instituto Universitario Fundación H.A. Barceló. Has approved this work, July 2015.

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