



Laser Needling in osteoarthritis of the knee in elderly soccer players



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Introduction

Previous knee injuries, sprains and meniscal removal or ligament plastic surgery of the Anterior Cruciate Ligament lead elderly soccer players, both professional and amateur, to develop knee osteoarthritis (OA).

Purpose

This is a medium-term clinical trial of eighteen months related to a new method named LASER NEEDLING. The new device is the INTRA LASER, which has a fast anti-inflammatory and analgesic effect obtained within 24-48 hours after application with a maximum number of 2 invasive treatments, once a week. The second treatment is performed only if the VAS was not reduced by 3 points.

Results

The goal of conservative treatments is to reduce symptoms, not to heal the lesion. We obtained a significant pain reduction, and a good functional recovery, as shown in the table. Patients reduced the use of drugs for three months or more.

Our hypothesis is that the intraarticular laser is effective in inhibiting cytokine for moderate and medium OA pain with stable result for three months. INTRA LASER can also be inserted in "disease modifying therapies" reducing the progression rate of the damage.



Materials

The INTRA LASER is a multifrequency laser produced by Touch Life Rehab® which simultaneously emits three wavelengths conveyed into one optical fiber which can be inserted into a hypodermic 20 or 21 G needle.

The conveyance of the laser radiation in the needle, penetrating in human tissue, generates a volume of stable electromagnetic excitation that induces the effect of biostimulation at the desired depth.

Methods

150 cases of elderly soccer players with "wear and tear" osteoarthritis (OA) of the knee up to grade III according to radiological classification of Kellgren & Lawrence, were treated. Routine plain radiographs, including AP, LAT-LAT, and Standing, may reveal different findings, like joint space narrowing, subchondral sclerosis or cysts depending on the severity of OA. The pain is generally considered inflammatory, but at a later time also of neuropathic type. At first, there is an increased production of inflammatory cytokines by synovial cells, with secondary cartilage and bone subchondral damage. In the advanced stages of OA neuropathic innervation of the subchondral bone, secondary to the destruction of articular chondral surface, may occur. This phase corresponds to the stage 4 of neuropathic pain. The patients have been evaluated according to VAS, DN4, WOMAC at recruitment T0, at two weeks T1 and at three months T2. LASER NEEDLING using the traditional access routes, eliminates the phenomena of reflection and refraction of laser radiation in the surface skin levels, the primary cause of skin heating and loss of efficacy of laser therapy, and allows a much lower dosimetry than the traditional laser therapy.

	total	females	males	
GENDER	150	17	133	
	total	females	males	
AGE	57,2	51,3	58,3	
	T0	T1	T2	T0-T3
VAS	7,8	4,8	3,7	P<0,001
	T0	T1	T2	T0-T3
DN4	3,9	2,1	0,9	P<0,001
	T0	T1	T2	T0-T3
WOMAC	66,4	55,9	52,7	P<0,001

Conclusions

This prospective study conducted over a period of eighteen months which showed analgesic positive results, persuaded us to extend the new method also to tendon and muscle disorders that afflict a much larger amount of athletes and to lower the patients' age.

References

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