USING AND BENEFITS OF THE DIAGNOSTIC PROGRAME MFK SYSTEM IN CLIENTS WITH VERTEBROGENAL PROBLEMS

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Abstract

The research study is focused on the potential diagnostic program. The MFK System for the regeneration of the musculoskeletal system. This research was conducted at the Institute for Clinical and Experimental Medicine in Prague (IKEM). 38 test subjects were monitored (mean age – 49 years) who are dedicated to mountain hiking and had a diagnosis of vertebrae problems. These individuals were divided into an experimental sample – ES (N = 28, 10 men, 18 female) and the sample Control Tech - E (n = 10, 4 males, 6 female). Individuals from both samples underwent 10 medical massages. Before the first and after the tenth therapeutic massage the pain level was recorded using the Wong - Baker Faces® pain scale of facial pain and muscle test was performed using the diagnostic program The MFK System. In the ES sample group for each medical massage was used the diagnostic program The MFK System. Based on the analysis results, it was demonstrated that the use of the diagnostic program The MFK System have significant impact on the choice and parts of the medical massage and consequent it's effects. The EC sample achieved a reduction in pain level.

INTRODUCTION

Medical rehabilitation is part of a package of measures that lead to optimal social rehabilitation of the affected human health due to illness, injury or congenital defects (Dylevský, 2001). Standard kinesiology examination of the musculoskeletal system and information about the degree of pain are fundamentally subjective information. In clinical tests of muscle and muscle dynamics of relationships has proven assessment first posture and gait, further shortened and weakened muscles and examination of simple movement stereotypes (Janda, 1984).

In order to arrive at the answer to the question what is a functional disorder of the musculoskeletal system from the perspective of the whole, must be used for this purpose such investigative methods that explain each tone muscles throughout the muscular system. It is not enough just because of the muscular system examination and palpation. Musculoskeletal examination and palpation shows the consequences of the limited functioning of the muscular system. Muscle test myokinetic activation contributes to finding those locations weakness causes more specifically related to the consequences of malfunctions locomotor system. Limits the movement of normal speech are

either a symmetric stability or instability in asymmetric overall perspective on the musculoskeletal system (Končalová, 2009).

Diagnosis of wellness regeneration and reconditioning services in today puts aim to objectify human subjective information. Diagnostic equipment, software or application in this respect thus far the only novelty. Diagnostic program MFK System allows objectively observe the occurrence of painful areas and the effectiveness of therapeutic procedures (Končalová, 2011).

The method MFK performs medical examinations masseur repeated myokinetic activation 41 postural and phasic muscles of the left and right side. At the same time also tested imbalance and overall functional status movement stereotypes. Results decreased muscle activation record against the norm in the diagnostic program MFK System. Program results should be evaluated and treated kinesiology view on the musculoskeletal system in the form of image maps. This image is used to assess the current state of functional muscular system test subject.

Digital processing of information on changes in the activation of the Musculoskeletal System program MFK is a modern and efficient way of objectification of subjective data. Image maps are used like kinesiology analysis application plan to build medical massage (Kajzar, 2016).

The pain assessment used a standardized scale, a visual analog (Visual Analogue Scale - VAS), numerical (Numeric Rating Scale - NRS), such as facial Wong - Baker Faces® facial pain scale - FPS or Melzack scale of pain intensity (Schejbalová, Trč 2008, Vorlíček, 2012, Pokorná, 2013).

AIM, HYPOTHESES

The main aim of the research study was to determine whether the use of the diagnostic program can MFK System medical masseur in the form of a digital image to effectively assist in the choice of techniques and massage places so that the efficiency of regeneration of the musculoskeletal system as possible.

The objective revealed the following hypotheses.

Hypothesis H1:

We assume that the diagnostic program can MFK System medical masseur in the form of a digital image to effectively assist you in choosing the application of massage so that the regeneration efficiency is maximized.

Hypothesis H2:

We assume that the ES will be due to the diagnostic program MFK System between the first and tenth visit to a change in the number of muscle reduced myokinetic activation against the norm.

Hypothesis H3:

We assume that the EA will be due to the diagnostic program MFK System between the first and tenth visit to a change in pain.

Characteristics of samples

Table 1 Representation of the sexes in the monitored sample

	number of probands	v %
Man	14	37
Women	24	63
Total sample	38	100

Table 2 Representation ages in the investigated sample

	number of probands	v %
18 – 30 years old	8	21
30 – 50 years old	24	63
50 – 70 years old	5	13
70 – 80 years old	1	3
Total sample	38	100

Procedure

The research was conducted on an outpatient physiotherapy department of the Institute of Clinical and Experimental Medicine (ICEM), Prague in the years 2015/2016. Before the intervention program was carried out in all probands in both groups, clinical examination myokinetic muscle activation 41 right and left sides, and according to test pain score (Wong - Baker Faces® Pain Rating Scale). This was followed by a ten-week intervention program.

Probands underwent both groups studied in the same environmental conditions always weekly medical massage. In ES health massager a clinical examination myokinetic muscle activation and diagnostic image maps used in the program MFK System. Application site medical massage on the body of the probands were chosen on the basis of the maps generated by the program MFK System. For CS medical masseur conducted clinical tests of muscle tone and balance sheet based on a subjective application of medical massage elected body probands. After completion of the intervention program were in both groups carried out the examination again in the same environmental conditions as before the intervention program. All probands were before the research was familiar with the research process and was adopted by them, informed consent. After completion of the intervention program was all probands provided individual consultations results.

For the intervention program has been continuously stored data. After its completion, the analyzed data.

METHODS

Diagnostical

A. Clinical examination myokinetic muscle activation.

This is a muscle test, which on two-point scale of 0-1 evaluates muscle strength. 0 = normal force of muscle (muscle test according to Janda Grade 5) and 1 = reduction versus standard (Janda step 0-4) (Janda et al., 2004). Tests are always 41 of the muscles on the right and 41 on the left side muscles. (Markova, 2015)

B. MFK method and application of the MFK System.

Method MFK (Manual Physical Therapy Correction) process includes five consecutive steps physiotherapy - history, examination, diagnosis, treatment, control - connected with the program MFK System (Figure 1). The second step MFK method is tested with the above-mentioned special combination of 41 functional muscle tests compiled into a stationary battery. The individual test results are continuously stored diagnostic program MFK System, which evaluates the overall status and displays it on the monitor diagnostic projection maps. It also displays the optimum place an optimal intervention of medical massage. The computer program allows you to store data and their statistical processing.

C. Wong - Baker Faces® pain scale
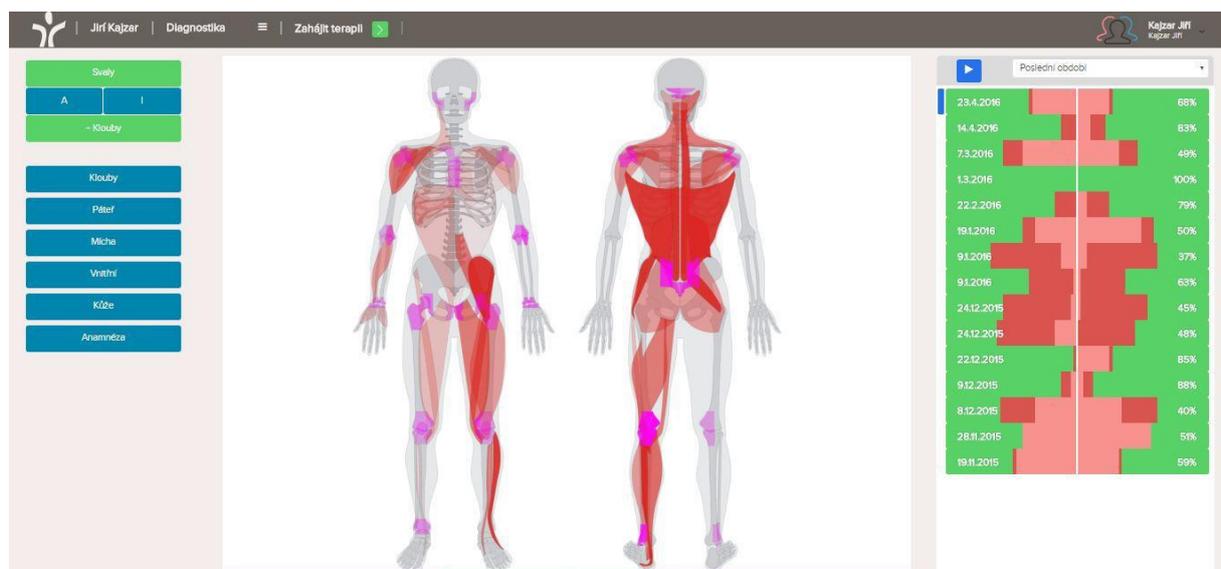
Figure 1 Example of diagnostical projection maps of the program MFK System

Wong-Baker FACES® Pain Rating Scale

0	2	4	6	8	10
No Hurt	Hurts Little Bit	Hurts Little More	Hurts Even More	Hurts Whole Lot	Hurts Worst

Figure 2 Figure 2 pain scale - Wong - Baker Faces® Pain Rating Scale (http://wongbakerfaces.org/)

Legend: Degrees of Pain

0 –   pain is present.

2 –   mild and dull, active only during movement, movement is restricted, pain medication is not muted.

4 –   pain is intermittent, dull, while moving or at rest, movement is limited at times, pain medication is not muted.

6 –   persistent pain, dull, even when moving peace movement is slightly reduced and the pain is buffered by drugs.

8 –   persistent pain, sharp, the movement and the peace movement is very limited and pain medication is absorbed.

10 – critical condition, persistent pain, sharp, always present, the movement is completely restricted. Pain medication is absorbed.

Intervention

In ES was administered for 10 weeks medical massage using a diagnostic program MFK System. At the CS was applied medical massage according subjective opinion medical masseur. In both cases they were used massage medical equipment and manual techniques friction, rubbing, kneading, beating, vibration and displacement fascia toperfusion subcutaneous tissue and muscles, muscle tone, affect the function of the endocrine system, circulatory and lymphatic, nervous system, metabolism, function level internal organs, psyche and pain.

Statistics

Data analyzes was provided by statistical method paired t-test based on the differences between the values of each loop pair.

RESULTS AND DISCUSSION

Results

Between the first and tenth medical massage by the ES to reduce the number of muscle activation reduced myokinetic against the norm for an average of 48.6 to 25.1. This reduction is significant $p = 0,001$. For CS has

occurred between the first and tenth medical massage to increase the number of muscle with reduced activation myokinetic against the standard average of 34.1 per 51 (Figure 3).

Between the first and the tenth step visit pain ES decreased on average from 5.2 to 2.6 and the CS decreased on average from 3.6 to 3.4. (Figure 4).

For ES number of muscles with decreased activation against the norm and the perception of pain levels while decreasing linear form. For CS, the number of muscles with reduced activation against the norm and the degree of pain increased very slightly declined (Figure 5).
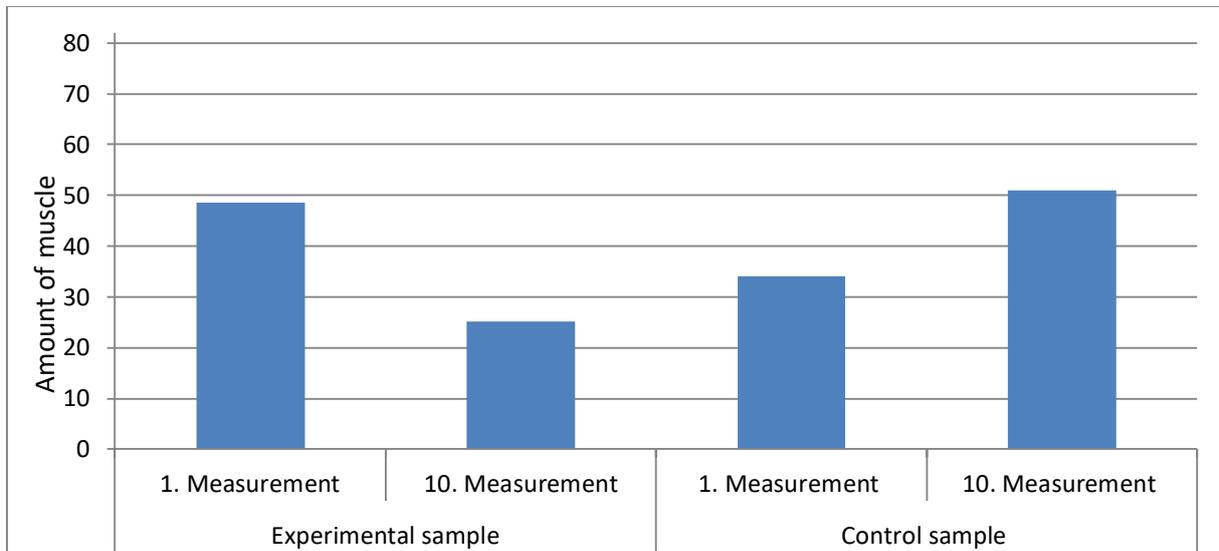
Figure 3 is a reduced amount of muscle activation myokinetic against the norm by the ES and CS
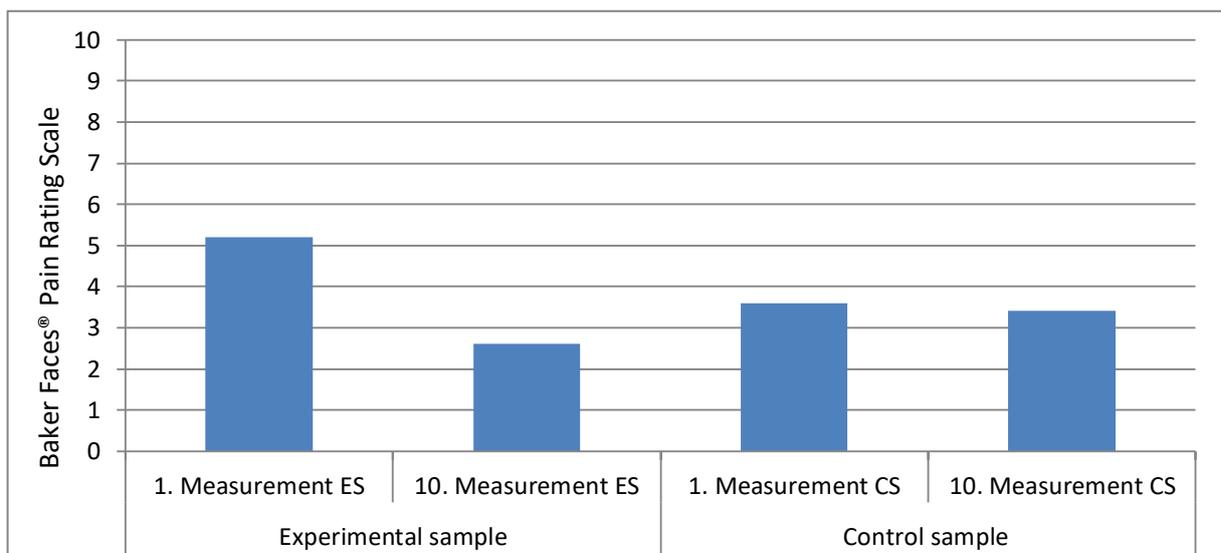
**Figure 4 Changing the degree of pain in the ES and CS between the first and tenth visit to**
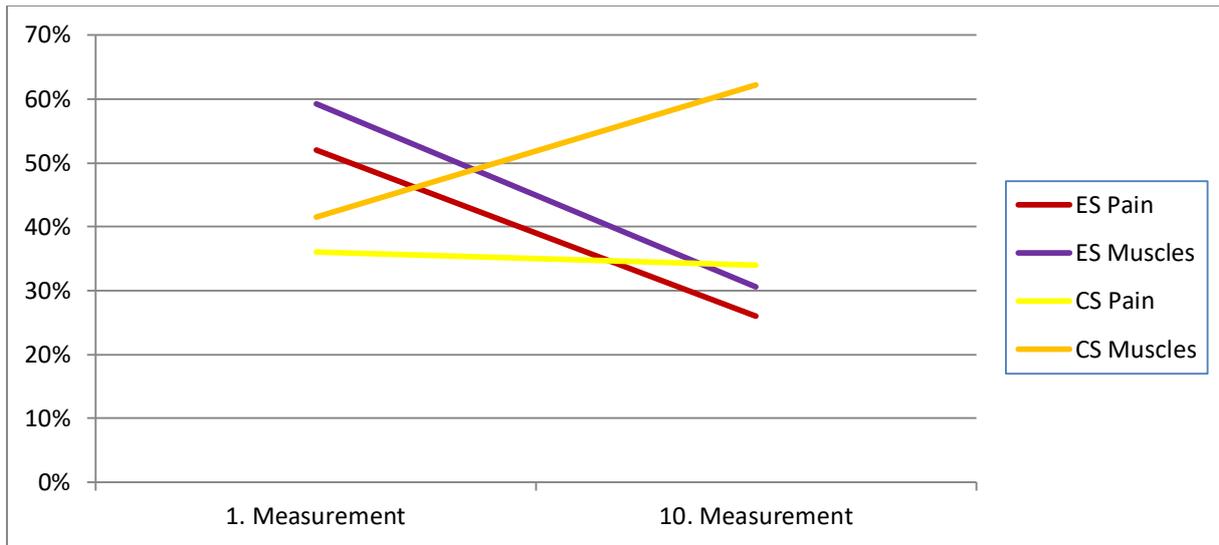
Figure 5 The relationship between the number of muscle reduced myokinetic activation against the norm and the degree of pain in the ES and CS

Discussion

At ES we examined whether the effect of the diagnostic program MFK System alters the number of muscles with decreased activation against the norm. It was confirmed that in ten visits to a significant reduction in the average number of muscles with decreased activation against the norm, and an average number of 48 to 25. Thus, a significant difference in reducing the incidence of muscle activation was reduced from the standard attribute to the fact that medical masseur in MFK access method applies inserted soft and massage techniques and exercises systematically and thus individually. Before choosing a technology conducting targeted examinations myokinetic activation. Our study also showed that the CS where health massager massage techniques applied subjectively, there was an increase in the average number of muscle reduced myokinetic activation against the norm. The

question remains reason for this change. Whether arose due respect only kinesiology finding omissions and functional changes (Kolar 2009) or because they were not respected holistic relationships within the system and seek the origin of the problem in the whole body system (Véle, 2012).

For the species hypothesis investigated whether the ES will occur between the first and tenth visit to the influence of the use of diagnostic program MFK System to reduce pain.

Although it has hurt a number of objective signs, symptoms, there's no way to measure objectively.

Pain is subjective and can take many forms and migration. However, this does not prove that pain with impaired function is really at the point at which the patient complains. It is therefore very difficult to find the real cause referred pain, unless we examine only palpation aspection and questioning. During the investigation it is therefore necessary to decide

whether the pain indicated a local origin or transferred. (Kolar 2009)

For CS probands diagnosed and treated according to established procedures and only a moderate decline in the perception of the pain. This phenomenon also remains unanswered question.

Some individuals had in our research, even when the output testing performed by a physiotherapist degree of pain 0. Even though the probands showed no signs of pain, the muscle in his body increased number of muscle that had reduced myokinetic activation against the norm. It is therefore possible to say that an individual who does not hurt, might not be without a finding.

Our research confirmed that the diagnostic program MFK System provides an objective view of functional defects of the musculoskeletal system and can help with decisions on the choice of therapy the therapist, which easily can efficiently select and then apply appropriate techniques medical massage. The results presented show that the effectiveness of applied medical massage is higher when using a diagnostic computer program malfunction measuring muscle system.

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