

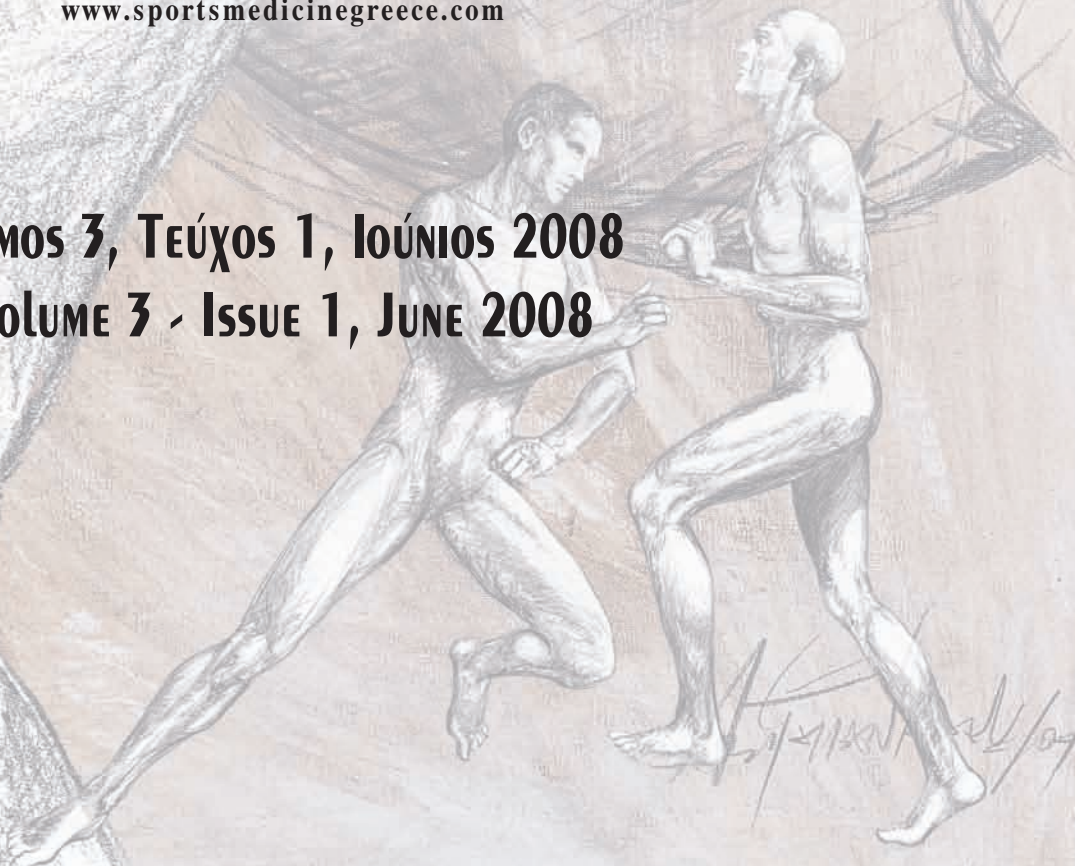
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The effectiveness of venotonic drags in the treatment of ankle sprains edema

Chytas A., Lirtzis Ch., Fotiadis E., Svarnas Th., Ntovas Th., Koimtzis M.

Abstract

Introduction: The effectiveness of micronised purified flavonoid fraction has been recorded as far as the treatment of various types of edema is concerned but is yet to be clarified whether these drugs are effective or not for the treatment of posttraumatic edema.

Aims: This study constitutes a progressive, randomized, controlled research which aims to evaluate the effectiveness of micronised purified flavonoid fraction in treating acute posttraumatic edema resulting from ankle's sprains.

Materials and methods: We conducted a follow-up of 96 patients with ankle sprains grading II and III. The study group (48 patients) were treated for 20 days with micronised purified flavonoid fraction. The control group (148 patients) were not treated with any substance. During the follow-up period we estimated the ankle's periphery as well as the severity of pain due to trauma on the 1st, 7th and 20th posttraumatic day. Results: Seventeen out of 96 patients were excluded by the research because they didn't conform with theurapetic protocol. Eventually the study was conducted with a study group of 42 patients and a control group of 37 patients. As far as the ankle's perimeter is concerned there was no statistically significant difference between the two groups on the 7th ($p=0,908$) posttraumatic day. During the analysis of subgroups there was a minor statistical difference between the patients which were treated with ice pads.

Conclusion: As it came up from our study the micronised purified flavonoid fraction are not effective in reducing posttraumatic edema. Although our study is minor in this scientific field, we believe that further investigation is necessary in order to clarify further and to prove whether the micronised purified flavonoid fraction are useful in posttraumatic edema.

Key words : ankle's sprain, micronised purified flavonoid fraction, posttraumatic edema, lymphatic system.

The role of vitamin E and exercise in chronic ischemia of skeletal muscle of rat

Loizidis T., Sioga A., Economou L., Albani M.

Abstract

Vitamin E functions as a natural antioxidant and protects the muscles from free oxygen radicals. The present study sought to examine the effects of vitamin E and exercise on contracting properties and the fine structures of chronic ischaemic extensor digitorum longus and soleus muscles. 21 Wistar rats were used in this study, which underwent

unilateral ligation of the right common iliac artery. Normal saline or vitamin E 4% 100 mgr/kg were administered and an exercise protocol was also applied (50-min intermittent level running every 5 days) for two weeks in all groups. The maximal tension of single isometric twitch tension, titanic isometric tension and half-relaxation tension time were measured at 40, 80 and 100 Hz and then samples were taken for ultrastructural analysis. Electron microscope evaluation revealed in all ischaemic muscles with or without exercise, dilation of sarcoplasmic reticulum, reduction of granules of glycogen and disorganization of microfibrils, while vitamin E administration reduced the morphological alterations. In conclusion, vitamin E supplementation could protect the contralateral and ischemic muscles.

Keywords: ischaemia, exercise, muscles, vitamin E.

Assessment of muscle fiber conduction velocity from surface EMG signals in vastus lateralis and relationship of it with lactate threshold and VO₂max in athletes

Pepera G., Ferguson R., Macaluso A., Farina D.

Abstract

Muscle fibre conduction velocity can provide information about the motor unit recruitment and activation. The intensity of the exercise affects to the motor unit recruitment and to the muscle fibre conduction velocity. High intensity exercises is followed by an increase in the hydrogen ions [H⁺], a decrease in PH and as a result of it an increase in lactate. The aim of this study was to investigate the changes in muscle fibre conduction velocity in relation to an incremental exercise test that is used to determine lactate threshold. Six male healthy participants, aged 18-30 cycled on an electronically braked ergometer at different incremental workloads. Surface elec-tromyogram signals were detected during cycling from vastus lateralis with linear adhesive arrays of eight electrodes. The intensity (expressed at Watts) which elicited the maximal muscle fibre conduction velocity and the lactate threshold, were determined. Maximal muscle fibre conduction velocity was located at 117 ± 44 Watt and lactate threshold at 143 ± 74 W and there appeared to be significant correlated ($R = 0,986$; $P < 0,05$). The intensity (Watts) of the exercise at which the muscle fibre conduction velocity was increased rapidly, was located at the 117 ± 44 Watt. Muscle fibre conduction velocity increase and lactate threshold were also significantly correlated, but they were also at different intensities. The data presented that muscle fibre conduction velocity correlated with lactate threshold. It was showed that as the workload increases, lactate concentration increases and also muscle fiber conduction velocity increases. Muscle fibre conduction velocity started to increase rapidly beyond the lactate threshold point. It was concluded that, during cycling exercise, as power increases progressively larger motor units are recruited, fatigue was occurred, the concentration of H⁺ was increased, so PH was decreased, fact which prevented muscle fibre conduction velocity to be increased more. As a result of it muscle fibre conduction velocity after lactate threshold level remained almost stable or even started to decline.

Keywords: lactate, lactate threshold, muscle fibre conduction velocity, surface electromyogram, dynamic exercises.

Intrasubstance meniscal lesions in athletes of high and medium level - Comparison of MRI, arthroscopy and clinical symptoms

Georgallas C., Meyer O., Godolias G.

Abstract

Meniscal tears are the most frequent type of injuries of the knee, especially in team sports athletes. Furthermore, meniscal tears are the most frequent indications for knee arthroscopy. The precise and within a short-term made diagnosis of a meniscal injury is very important for a quick initiation of treatment in order to achieve the soonest return to sport activities in this special group of patients. The combination of the history of injury, good clinical examination but also of the findings in magnetic resonance imaging and during arthroscopy is crucial for the correct diagnosis and initiation of treatment. However, in cases of intrameniscal lesions, which have an incidence of 3% in meniscal injuries, arthroscopic findings are unclear, the superior and inferior surface of the meniscus show no definite pathologies and there is also no further sign of meniscal injury. In such cases, orthopaedic surgeons are faced with the problem of performance of partial meniscectomy or not. We here report about our experience from a clinical study, where we compared findings in magnetic resonance imaging and during arthroscopy to the clinical symptoms of such intrameniscal lesions.

Key words:: meniscal lesions, arthroscopy, partial meniscectomy, magnetic resonance imaging.

Alterations of hematological factors of inactive persons under the effect of exercise of acute form

Mavrovouniotis F., Kougioumtzidis Ch., Tokmakidis S., Godolias G., Argiriadou E.

Abstract

The purpose of the present study was to examine the hematological factors of inactive persons after an acute bout of exercise. 22 healthy inactive men, aged 36.32 ± 4.45 years, participated in the study. The subjects participated in submaximal exercise (80% HRmax) with progressively increased intensity, in a mechanical bicycle-ergometer, that lasted 21 min and were submitted on blood collection before and immediately after the test. The blood samples were analyzed with the classical hematological methods. Data was analyzed with the statistical analysis student's t-test, for the comparison of the mean values before and after the test. From the statistical analysis came up a significant increase in heart rate ($t = -27.34$, $p < 0.001$), systolic ($t = -7.02$, $p < 0.001$) and mean blood pressure ($t = -3.36$, $p < 0.01$), while diastolic blood pressure was progressively decreasing. After exercise significant increases on white ($t = -7.09$, $p < 0.001$) and red ($t = -4.76$, $p < 0.001$) blood cells, hemoglobin ($t = -9.46$, $p < 0.001$), hematocrit ($t = -12.97$, $p < 0.001$) and on platelet ($t = -6.36$, $p < 0.001$) levels was observed. Consequently, the increase of hematological factors observed in the present study result from exercise intensity. Thus, the observed, after exercise, increase of white blood cells occurs for the reinforcement of organism defence, in such conditions of physical stress. In addition, hemoglobin, hematocrit, red blood cells and

platelet cells concentrations that were increased after high intensity exercise, results from of a direct adaptation that is activated in order to be encountered the organism's increased metabolic requirements.

Keywords: hematological factors, aerobic exercise, bicycle-ergometer.

The efficiency of the therapeutic exercise on balance, mobility and the fear-feeling of falling on elderly people

Iakovidis P., Agelusis N., Porfyriadou A., Gurgulis V., Malliou P.

Abstract

The instability, the reduced mobility and the fear- feeling of falling are deemed to be the most important factors that are seriously connected with the increased frequency of peoples' falls, both while standing and moving. This survey intends to study the results of a special- designed protocol of therapeutic exercises of the elderly, as it arises out of the review of the relevant bibliography and articles. The protocol was designed according to the exercises' principals and the special personal needs of the elderly and includes exercises that combines resistance exercises, flexibility, proprioceptive neuromuscular facilitation, balancing and other diverse mobility and functional activities which have as target to rehabilitate and prevent these peoples' falls. The consistence of the surveys' sample was 40 65-85- year- old people with an antecedent of falling in the past year. These falls were registered in the outpatients department of the General Hospital in Kilkis. As to collect and evaluate the data of the mobility- therapy program we used the functional- balance- scale Berg, the mobility- test Tinetti and the Modified Falls Efficacy Scale. The results arising out of this survey showed a statistically improvement of the persons' balance and mobility, but no differentiation in the fear- feeling of falling. Conclusively, the specific protocol of therapeutic exercises can be used to improve the balance and the mobility of the elderly. As far as it concerns the reduction of the fear of falling, it may be necessary to support these people on a psychological base.

Keywords: exercise, the elderly, balance, mobility, fear of falling.