

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

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بالرسالة صفحات لم ترد بالاصل

EFFICACY OF RUSSIAN CURRENT AND LOW FREQUENCY PULSED CURRENT ON QUADRICEPS MUSCLE TORQUE AND SORENESS

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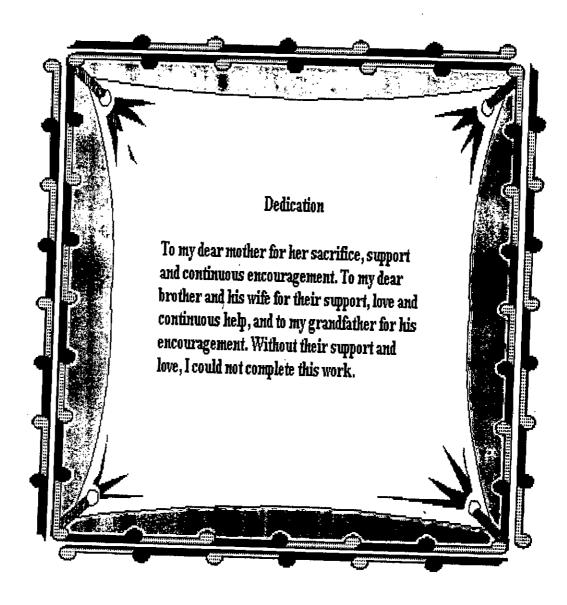
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Abstract

Background: Neuromuscular electrical stimulation (NMES) is used by therapists in muscle strength rehabilitation. Two types of stimulators have aroused special interest, one type produces low frequency pulsed currents and the other, medium frequency alternating currents modulated at low frequencies known as Russian current. The purpose: of this study was to investigate the efficacy of Russian current and low frequency pulsed current on quadriceps muscle torque and soreness. Design and Subjects: A pretest-post test (2×2) design with repeated measurement was used in this study. Thirty healthy female physical therapy student and employees participated in this study, their age ranged between 18-32 with mean age (24.9 ± 0.96) , assigned randomly into two equal groups:- group I (n=15) female subjects) had their non dominant quadriceps femoris muscle stimulated with Russian current for ten minutes, 3times/week for 4 weeks. Group II (n=15 female subjects) had their non dominant quadriceps femoris muscle stimulated with rectangular symmetrical biphasic current for ten minutes, 3times/week for 4 weeks. Methods: The isometric torque of the non dominant quadriceps was evaluated at 60 degrees of knee flexion, using Biodex III isokinetic dynamometer before and after training. Each subject was asked to rate their soreness after 48 hours of electrical stimulation every session by using VAS. Dependent t-test was used to distinguish among the two groups before and after electrical stimulation. Independent t-test was used to further distinguish between both types of electrical stimulation. Results: The results revealed that neuromuscular electrical stimulation produced significant increase in the quadriceps muscle torque in post-stimulation results compared with the pre-test results (25.93% and 15.96%) in group I and group II respectively (p<0,0001). As regards muscle soreness there was a significant difference between the two groups (p<0.05) during the second week of training. Also there was no significant difference between the post-stimulation results of both groups in quadriceps muscle torque (p>0.05) at the end of training. Discussion and conclusion: The finding revealed that neuromuscular electrical stimulation can improve the strength of normal innervated muscles and the Russian current have the advantage over the low frequency pulsed current in terms of strength gained without muscle

Key Words: Electric stimulation, Russian current, muscle torque.



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