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LOW LOAD 'MOTOR CONTROL' STABILITY EXERCISES CAN BALANCE ACTIVATION OF RECTUS ABDOMINIS MUSCLE.

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SUMMARY

To verify the effect of three low load 'motor control' stability (MCS) exercises on balance of rectus abdominis . MCS exercises have been developed throughout the years to try to improve pain and function specially on patients with mechanical dysfunctions. All 35 females with low back pain were between 19 and 23 years old and performed three modalities of exercise during 10 sessions of 20 minutes. A pressure biofeedback unit (PBU) from Chatanooga brand was used on lumbar spine to control it during the exercises. Low load MCS exercises can balance the activation of rectus abdominis muscle

INTRODUCTION

MCS exercises have been developed throughout the years to try to improve pain and function specially on patients with mechanical dysfunctions. More attention has been given to activation and balance of deep muscles on MCS training. Many stabilizers are able to function as stabilizers because of there fascial attachments and although rectus abdominis has longitudinal fibers and be superficial this muscle is linked to fascia. Balance is important in all levels and authors believe that deep muscles are not able to stabilize joints alone, specially on high load activities.
High load exercises usually demands equipments and supervision, the exercises on this study were easy to get and simple to do it at home. These exercises could help patients and athletes to get and keep balance on trunk muscles without the need to go to a gym or a rehab center

METHODS

Electrodes of Ag/AgCl were positioned on rectus abdominis muscle based on Cram and Kasman (1998). All 35 females with low back pain were between 19 and 23 years old and performed three modalities of exercise during 10 sessions of 20 minutes. A pressure biofeedback unit (PBU) from Chatanooga brand was used on lumbar spine to control it during the exercises. Subjects were asked to keep it on 40 mmhg. To get EMG data, a Miotool 400 from Miotec brand was used during maximum isometric recruitment before and after the training. The mean activation of RMS signal was considered and the significance level adopted were 0,05.

RESULTS AND DISCUSSION

The initial activation signal of rectus muscle before exercise were 354,23µV on right side and 322,22 µV on the left side. After the exercises it was recorded 435,44 µV and 430,23µV on right and left sides respectively. Although activation signal were higher after the exercises, data were not statistically significant with $p > 0,05$. The data from this work has to be linked with other evidences as only one muscle could be studied. Besides it was not statistically significant it is important to notice that muscle balance between sides were much better after the MCS training. Even a low load exercise seems to be able to balance a muscle with high load demand as rectus.
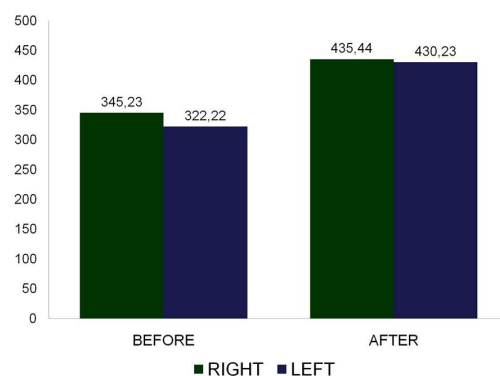

Figure 1: Before and After EMG activation of Rectus Abdominis.

CONCLUSIONS

Low load MCS exercises can balance the activation of rectus abdominis muscle. We suggest for future works to collect data from other muscles together for a better understanding of this response. High load exercises usually demands equipments and supervision, the exercises on this

study were easy to get and simple to do it at home. These exercises could help patients and athletes to get and keep balance on trunk muscles without the need to go to a gym or a rehab center

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