

Immediate effects of suboccipital myofascial induction on postural stability: a pilot study

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Introduction: Standing is a constant postural challenge due to high position of the center of mass regarding the small size of base of support. Somatosensory, vestibular and visual inputs are crucial to preserve the upright orientation and stability [1]. Interestingly, deep myofascial units of the neck are richly innervated with mechanoreceptors, which might have an important role on the somatosensory input [2]. In theory, a myofascial technique directed for this suboccipital myofascial units could influence postural control, both stability and/or orientation, however evidence is lacking. Therefore, this is a pilot study that aimed to test the immediate effects of the suboccipital myofascial induction technique on postural stability of asymptomatic subjects, as well as to prepare research on symptomatic individuals.

Materials and methods: Eleven asymptomatic subjects, aged between 30 and 60 years old, were randomly assigned to a placebo (PG) ($n=5$; 45 ± 9.4 years) or a myofascial induction (MIG) ($n=6$; 41 ± 8.3 years) group; all consent their participation, according to the Declaration of Helsinki. MIG intervention consisted on suboccipital myofascial induction described by Pilat [3], whereas PG intervention consisted on a placebo handling, with a positioning and hand placement like MIG intervention, but without additional pressure. Postural stability was evaluated using a force plate before (M1) and after intervention (M2). It was assessed the mean amplitude, root mean square and mean velocity, in the frontal and sagittal planes, area, and total mean velocity of the center of pressure (CoP). Mann-Whitney test was used with a significance level of 0.05.

Results: There were no statistical significant differences between groups in almost every variables, except for the CoP displacement area in M2, where MIG presented a greater area than PG ($p=0.007$). However, in a more detailed analysis, when assessed the difference variable (M2-M1), significant differences between groups were not observed.

Discussion and conclusions: Suboccipital myofascial induction may not have an immediate influence on postural stability of asymptomatic subjects. However, due to the small sample size and the fact that asymptomatic individuals may present a reduced effect size, results should be analysed carefully, as these factors may influence the ability to detect possible differences.

Therefore, a larger sample and a population with postural dysfunction is needed.

References

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