Endothoracic Myofascial Release Technique: Effects on the Autonomic Nervous System in an Asymptomatic Population

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BACKGROUND It has been demonstrated that myofascial release techniques (MFR) have an effect on the fascial system (stiffness) [1]. The effect of osteopathic manipulative treatment on the Autonomic Nervous System (ANS) has become well understood and documented [2]. The aim of this study was to evaluate the effectiveness of a MFR on endothoracic myofascial somatic dysfunction (EMSD) and to observe the ANS activity using markers such as heart rate variability (HRV), heart rate (HR), blood pressure (BP), and temperature in an asymptomatic population.

METHODS Healthy subjects, students from the CEESO Lyon, were divided into three groups: a treatment group (N=22), a placebo group (N=15), and a control group (N=14). The study was carried out as a double blind randomized controlled trial with two osteopathic practitioners. Researcher A: measured HRV, HR, BP, temperature and EMSD quantity and severity before and after the intervention (placebo, MFR technique or non intervention) performed by Investigator B. Researcher C, using an emotional consistency scientific tool, analyzed HRV during the intervention, a spectral method based on the normalized measures of high and low frequencies reflecting cardiac coherence (HFnu and LFnu).

RESULTS All subjects completed the study. The subjects who received the technique showed a decrease of EMSD severity (p-value < 0.0001) and a decrease of number of EMSD (-77%) (-7% in the control group, -13% in the placebo group). MFR technique had an effect on HFnu and LFnu (p-value < 0.0001). Results were not significant for HR, BP and temperature. No statistical differences have been observed between the control group and the placebo group concerning the severity of somatic dysfunction or the HFnu and LFnu values.

CONCLUSIONS The study suggests a level of effectiveness of endothoracic MFR technique on the number and the severity of EMSD. MFR also revealed significant effect on HRV, a marker of ANS activity. This modification is probably due to the proximity of the vagus nerve and thoracic sympathetic ganglia. Further research is needed to explain this process. A study on on patients with aetiology of autonomic dystonia may provide interesting results.

REFERENCES

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All authors hereby declare that this experiment have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.