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RESPONSES OF BLOOD PRESSURE AND AUTONOMIC FUNCTION MODULATION IN AN OVERLOADED FORCE OF THE MECHANICAL INTERMITTENT CERVICAL TRACTION

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ABSTRACT

Background and Purpose: Cervical traction, which is a physical therapy, frequently used to treat the cervical diseases, such as disc herniation and cervical spondylosis. We have observed rare cases of side effects in elderly patients, but not in younger. The purpose of this study was to investigate responses in cardiovascular functions during cervical traction with normal and overloaded forces.

Materials/Methods: In this pilot study, 100 healthy young people were randomly divided into two groups. Subjects in group A (n = 49) and group B (n = 51) received mechanical intermittent cervical traction in a supine position under 14% (normal force) and 25% (overloaded force) body weights respectively. Assessments of blood pressure, heart rate, heart rate variability, percentages of high-frequency (HF) and low-frequency (LF) signals, and LF/HF ratio were performed before, during, and after 15-min traction.

Results: We found that systolic blood pressure, diastolic blood pressure, and heart rate variability do not elevate during cervical traction, and nearly returned to original levels immediately after traction in both groups ($p > 0.05$). Comparing two groups, no significant changes in heart rate, HF%, LF%, and LF/HF ratio were found during and after 15-min cervical traction ($p > 0.05$).

Conclusions and Clinical Relevance: Traction forces of 14% and 25% body weight in the supine cervical traction can be provided without significant responses of the blood pressure autonomic function modulation. The safety of cervical traction with other traction forces or in patients with a risk of the cardiovascular disease requires further studies.