Vertebral artery flow and spinal manipulation: a randomized, controlled and observer-blinded study

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Abstract

BACKGROUND: Several studies have been published on the effect of cervical rotation alone upon blood flow in the vertebral arteries. However, we have not found articles...
addressing the question of how spinal manipulative therapy per se affects the vertebral artery flow. **OBJECTIVE:** The aim of the present study was to investigate whether any changes occur in peak flow velocity in the vertebral artery after spinal manipulative therapy as measured using the latest Doppler ultrasound technology. **DESIGN AND SETTING:** A randomized, controlled and observer-blinded study at a university hospital vascular laboratory. **PARTICIPANTS:** Twenty university students with a “biomechanical dysfunction” in the cervical spine. **RESULTS:** We observed no change in peak flow velocity immediately after spinal manipulative therapy and found no correlation between peak flow velocity and systolic blood pressure. **CONCLUSION:** To the best of our knowledge, this is the first study comparing flow velocity in the vertebral artery before and after spinal manipulative therapy. We found no significant changes in otherwise healthy subjects with a biomechanical dysfunction of the cervical spine. Major changes in peak flow velocity might in theory explain the pathophysiology of cerebrovascular accidents after spinal manipulative therapy. However, in uncomplicated spinal manipulative therapy, this potential risk factor was not prevalent.

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