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ORIGINAL ARTICLE

Can Speech-Guided Breathing Influence Cardiovascular Regulation and Mood Perception in Hypertensive Patients?

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Abstract

Objectives: Anthroposophic therapeutic speech (ATS) has been shown to positively influence heart rate variability (HRV) and cardiorespiratory coordination in healthy volunteers. This prospective, exploratory, pre–post study was performed to investigate ATS effects on baroreflex sensitivity (BRS), heart rate (HR), HRV by standard deviation of beat to beat intervals (SDNN), blood pressure (BP), and mood in hypertensive patients.

Design: Patients received three ATS treatments, alternating with three sham interventions (control). During the sessions, BP and electrocardiography were continuously recorded. BRS and SDNN were analyzed from those measurements. Changes in mood score were assessed by a questionnaire. All data were compared before and after intervention (ATS and control).

Results: Thirty-one patients participated, the majority diagnosed with arterial hypertension (22 out of 31). Pre–post analysis of the data revealed immediate and significant changes in hypertensive patients during control and ATS with respect to BRS (control: 6.57 to 6.92 msec/mmHg, $p=0.0349$; ATS: 6.03 to 7.27 msec/mmHg, $p<0.0001$), SDNN (control: 39 to 42 msec, $p=0.0058$; ATS: 38 to 43 msec, $p=0.0003$), and HR (control: 74 to 71 beats per minute [bpm], $p<0.0001$; ATS: 74 to 70 bpm, $p<0.0001$). In normotensive patients, those changes were generally less pronounced and less significant with respect to BRS (control: 8.13 to 8.56 msec/mmHg, $p=0.1102$; ATS: 8.20 to 8.98 msec/mmHg, $p=0.0273$), SDNN (control: 36 to 40 msec, $p=0.0002$; ATS: 35 to 38 msec, $p=0.0556$), and HR (control: 80 to 77 bpm, $p<0.0001$; ATS: 80 to 78 bpm, $p<0.0011$). Only in hypertensive patients significant long-term changes were observed for BRS (6.6 to 7.7 msec/mmHg, $p=0.0070$), SDNN (39.1 to 45.5 msec, $p=0.0074$), and HR (75.8 to 67.2 bpm, $p=0.0001$). No significant long-term changes were observed in normotensive patients. The mean systolic BP did not change significantly during this study. Both ATS and control also yielded improvements in the mood summary score, which again were more apparent for ATS than for sham interventions, but these were more pronounced among normotensive patients (3.5 to 4.2) than for hypertensive patients (2.9 to 3.9).

Conclusion: The results indicate that ATS has the potential to improve cardiovascular parameters which play an important role in BP regulation capability.

Keywords: breathing therapy, therapeutic speech, hypertension, anthroposophic medicine, heart rate variability, baroreflex sensitivity

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