Inspiratory muscle training reduces blood pressure and sympathetic activity in hypertensive patients: A randomized controlled trial.

Janaina Barcellos Ferreira, PT; Rodrigo Della Méa Plentz, PT, PhD; Cinara Stein, PT; Karina Rabello Casali, PhD; Ross Arena, PT, PhD; Carolina Viero; Luiza Hoscheidt; Pedro Dal Lago, PT, ScD

1UFCSPA, Porto Alegre, Brazil; 2IC/FUC, Porto Alegre, Brazil; 3University of New Mexico School of Medicine, USA.

Methods

Prospective, controlled, double blinded randomized.

Clinical Trials Register Number: NCT01250444

Purpose

The aim of this study was to further elucidate the effects of IMT on blood pressure, autonomic cardiovascular control and functional capacity in patients with essential hypertension.

Results

Figure 1. Flow diagram of the recruitment process and allocation of the participants.

Table 1. Baseline characteristics of participants.

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<th>IMT (n=6)</th>
<th>P-IMT (n=7)</th>
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<tbody>
<tr>
<td>Gender (M/F)</td>
<td>3/3</td>
<td>2/5</td>
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<tr>
<td>Age (years)</td>
<td>61.8±11.1</td>
<td>52.1±8.8</td>
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<tr>
<td>Body Mass Index (Kg/m²)</td>
<td>26.8±2.5</td>
<td>27.8±1.7</td>
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<tr>
<td>Pmax (cmH2O)</td>
<td>93.0±29.7</td>
<td>94.3±24.6</td>
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<tr>
<td>SBP (mmHg)</td>
<td>133.1±6.9</td>
<td>130.0±6.4</td>
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<tr>
<td>DBP (mmHg)</td>
<td>80.6±12.3</td>
<td>88.4±9.3</td>
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Values expressed as mean ± standard deviation. IMT: inspiratory muscle training; P-IMT: placebo-inspiratory muscle training. Pmax: maximal static inspiratory pressure; SBP: systolic blood pressure; DBP: diastolic blood pressure.

Figure 2. Functional capacity represented by VO2 (A) and VE/VO2 (B) in IMT and P-IMT groups, before and after protocol. Two way ANOVA; p=0.05.

Statistical Analysis:

Descriptive data are presented as mean ± SD.

Baseline and blood pressure data were compared by the Student t test.

Heart rate variability components were analyzed by two-way ANOVA and post-hoc analysis was conducted by the Neuman-Keuls test.

A p-value <0.05 was considered statistically significant for all tests.

Conclusions

IMT demonstrates beneficial effects on systolic and diastolic blood pressure as well as autonomic cardiovascular control in hypertensive patients.

Disclosures:

The authors have no conflicts of interest to disclose regarding this work.