

EDITORIAL

Is Patient Education about the Benefits of Physical Activity a Good Adjunct Treatment Strategy in Hypertension?

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Editorial referring to the article: Does Hypertension Knowledge Influence Levels of Physical Activity in Hypertensive Patients From a Southern Brazilian Community?

Systemic arterial hypertension (SAH) is a chronic condition that is highly prevalent worldwide. It occurs without symptoms in most individuals and represents the main modifiable risk factor for cardiovascular disease. The adoption of behaviors that do not involve medication, such as changes in lifestyle and regular practice of physical exercise, along with strict adherence to prescribed medication, is a major challenge in the treatment of this disorder.^{1,2}

The guidelines of the American Heart Association and the American College of Cardiology³ on hypertension recommend the implementation of lifestyle changes as the first line of treatment for low- to moderate-risk groups, thereby emphasizing the importance of such measures.

As SAH has multiple causes, it is very difficult to establish the role of each element involved in the development of this condition. Santos and colleagues,⁴ in their article published in the current issue, discuss the interrelationship between regular exercise and patient knowledge of the disease and provide important information, especially given the scarcity of studies on this subject.

Burini et al.,⁵ evaluated the effect of physical exercise alone (without medication or special diet) in overweight men with hypertension. The authors found benefits in terms of a reduction of blood pressure to normal

levels, regardless of normalization of body mass index. However, they also found an inverse effect, of an increase in blood pressure levels and subsequent return to baseline values within four months after cessation of supervised physical activity. These authors also showed better cost-effectiveness of physical exercise over the use of anti-hypertensive drugs.

The effect of an educational program on knowledge and practice of home blood pressure monitoring was evaluated in a study conducted by Fu et al.⁶ with individuals with uncontrolled hypertension. Participants were randomly allocated either to a group education or individual counselling to perform home blood pressure monitoring. The practice and knowledge of ambulatory monitoring were evaluated using a questionnaire, applied at the beginning of the program and at six months after conclusion of the intervention. The authors found that individuals who engaged in educational activities as part of a group were eight times more capable of absorbing and retaining information on ambulatory monitoring of blood pressure than the group who received individual counseling. They also found that older, retired individuals and those with adequate knowledge of health issues were more likely to adhere to weekly blood pressure monitoring during the six-month follow-up period. Although these findings strongly suggest that group educational activities are more effective than individual ones, it remains doubtful whether the group strategy could be successfully applied to physical activity and other risk factors.

In a randomized, double-blind, placebo-controlled trial by Fuchs et al.,⁷ carried out in Brazil, prehypertensive individuals (systolic blood pressure between 120 and

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139 mmHg and diastolic pressure between 80 and 89 mmHg) would be allocated to receive either a combination of anti-hypertensive drugs or placebo if they did not reach optimal blood pressure after three months of lifestyle intervention. The authors found that half of these individuals achieved normal levels of blood pressure with lifestyle changes and were excluded from the subsequent phase involving medication.

It is possible that the practice of physical exercise alone, without intervention regarding other risk factors, may produce a beneficial effect regarding hypertension control. Silva et al.,⁸ studied obese individuals with hypertension undergoing a twelve-week supervised physical exercise program and found a reduction in blood pressure to normal mean levels. However, no significant changes in anthropometric parameters (body weight, body mass index, or waist-to-hip ratio) were observed, which may be explained by the fact that physical exercise was the only non-pharmacological intervention applied. It is possible that a reduction in calorie intake may also help to reduce these indices.

Ribeiro et al.⁹ compared the effectiveness of a physical exercise program, a health education program and a control group on physical activity levels in users of the Brazilian National Unified Health System (SUS). The study covered twelve months of intervention and six months of subsequent follow-up. It was found that both intervention groups increased the time of weekly leisure physical activity and annual scores of physical exercise, recreation and active transport. The physical exercise group obtained a higher mean of the annual score of physical exercise compared to the other groups ($p < 0.001$). In the post-intervention period, however,

the physical exercise group experienced a decrease in their annual physical exercise score (mean -0.3; CI 95% -0.5-0.1), while the health education group experienced an increase (mean 0.2; CI 95% 0.1-0.4). These results suggest that education centered on lifestyle changes and healthy habits may produce a longer-lasting effect in terms of the ongoing practice of physical exercise than simply participating in a physical exercise program. It is clear, however, that the adoption of both strategies should produce the best results.

Although it is difficult to pinpoint the precise extent to which each factor (lower body weight, nutritional counseling, or increased physical exercise) contributes to successful non-pharmacological treatment of arterial hypertension, their effectiveness is unquestionable. However, whether this positive effect is sustainable in the long term, is still debatable. Also, some of these factors are influenced by geographic, socioeconomic and cultural factors, and huge differences can thus be found between different populations.^{4,10}

The identification of hypertensive patients in the early stages of the disease may provide a good opportunity to strongly advocate the practice of physical activity, prescribed by a multidisciplinary team. The simple prescription of physical exercise, even when accompanied by audiovisual or printed educational material, has been shown to be insufficiently convincing and hence ineffective for most patients.¹⁰

The research conducted by Santos et al.³ shows the importance of the patient's knowledge about arterial hypertension and the benefits of physical training. This may help to improve adherence to lifestyle modification measures.

References

1. Monteiro MF, Sobral Filho DC. Physical exercise and blood pressure control. *Rev Bras Med Esporte*, 2004; 10 (6):513-6.
2. Barroso WKS, Rodrigues CIS, Bortolotto LA, Mota-Gomes MA, Brandão AA, Feitosa ADM, et al. Diretrizes Brasileiras de Hipertensão Arterial – 2020. *Arq Bras Cardiol*. 2021; 116(3):516-658.
3. Unger T, Borghi C, Charchar F, Khan N, Poulter N, Prabhakaran D, et al. 2020 International Society of Hypertension global hypertension practice guidelines. *J Hypertens*. 2020; 75(6):1334-57.
4. Santos RZ, Korbes AS, Martins ETC, De Lucca M, De Lucca L, Karsten M, Benetti M. Does Hypertension Knowledge Influence Levels of Physical Activity in Hypertensive Patients From a Southern Brazilian Community? *Int J Cardiovasc Sci*. 2021;34(5):542-9.
5. Burini RC, Simonetti LA, Maestá N, Waib PH. Efficiency and Costless of a Long-term Physical Exercise Program to Non-medicated Hypertensive Males. *Adv Stud Med Sci*. 2013; 3(1):111-23.
6. Fu SN, Dao MC, Wong CKH, Cheung BMY. Knowledge and practice of home blood pressure monitoring 6 months after the risk and assessment management programme: does health literacy matter? *Postgrad Med J Epub*. 2021[ahead of print]:0:1-7.
7. Fuchs SC, Poli-de-Figueiredo CE, Figueiredo Neto JA, Scala LC, Whelton PK, Mosele F, et al. Effectiveness of Chlorthalidone Plus Amloride for the Prevention of Hypertension: The PREVER-Prevention Randomized Clinical Trial. *J Am Heart Assoc*. 2016 Dec 13;5(12):e004248.
8. Silva BZ, Silva EG, Costa FC, Santos JA, Pereira PS, Carvalho EB, et al. Effects of exercise program on anthropometric and blood pressure of obese individuals. *ConScientiae Saude* 2011;10(2)256-62.
9. Ribeiro EHC, Garcia LMT, Salvador EP, Costa EF, Andrade DR, Latorre MRDO, et al. Assessment of the effectiveness of physical activity interventions in the Brazilian Unified Health System. *Rev Saude Publica*. 2017;51:56.

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10. Barone Gibbs B, Hivert M-F, Jerome GJ, Kraus WE, Rosenkranz SK, Schorr EN, et al. on behalf of the American Heart Association Council on Lifestyle and Cardiometabolic Health; Council on Cardiovascular and Stroke Nursing; and Council on Clinical Cardiology. Physical activity as a critical component of first-line treatment for elevated blood pressure or cholesterol: who, what, and how? A scientific statement from the American Heart Association. *Hypertension*. 2021;78(2):E26-E37.

