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Effects of lifestyle changes in patients with metabolic syndrome and heart disease

Raiza Lorena Batista da Silva[1], Janaína Franco Nara[1], Ana Laura Barros Pereira[2], Antônio Pedro Pinto Perez[2], Barbara Breda[2], Mariana de Carvalho Siqueira[2], Jullia Lubiano Dantas[2], Rafaela Brancalhone Ferreira[2], Tiago César Zampaolo[2], Yago de Paiva Meneghin[2,] Maurício Sbardella Brito[3], Jéssica Kauany Carlos Brizon[4], Raphael Barreto Wanderley Rodrigues[4], Gustavo Francisco Santos da Silva[5], Vinícius Eduardo de Oliveira[6], Antonio Vidal de Lima Filho[7], Luma Oliveira Chaves[8], Rodolffo Gustavo Ascarum do Nascimento[9], Annelise Mochi Vasconcelos Guandalini[10], Karla Suzany Oliveira de Andrade[11]

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ORIGINAL RESEARCH ARTICLE

ABSTRACT

This study aimed to analyze how lifestyle changes have impacted the treatment of Metabolic Syndrome (MS) and Systemic Arterial Hypertension (SAH). A systematic review of the literature was conducted using the electronic databases: PubMed and Science Direct. It was observed that the adoption of healthy lifestyle habits is essential for heart disease patients and those with MS, as it can prevent complications, improve quality of life and reduce the risk of cardiovascular and metabolic events.

Keywords: Metabolic Syndrome, Systemic Arterial Hypertension, Change in Lifestyle Habits.

Efectos de los cambios en el estilo de vida en pacientes con síndrome metabólico y enfermedad cardíaca

RESUMEN

Este estudio tuvo como objetivo analizar el impacto de los cambios en el estilo de vida en el tratamiento del síndrome metabólico (SM) y la hipertensión arterial sistémica (HSA). Se realizó una revisión sistemática de la literatura utilizando las bases de datos electrónicas PubMed y Science Direct. Se observó que la adopción de hábitos de vida saludables es esencial para los pacientes con cardiopatías y EM, ya que puede prevenir complicaciones, mejorar la calidad de vida y reducir el riesgo de eventos cardiovasculares y metabólicos.
Palabras clave: Síndrome Metabólico, Hipertensión Arterial Sistémica, Cambio de Hábitos de Vida.

Instituição afiliada – [1]UNIVERSIDAD DEL NORTE, [2]UNIVERSIDADE ANHEMBI MORUMBI,[3]HOSPITAL SÃO FRANCISCO, [4]UNIÃO DAS FACULDADES DOS GRANDES LAGOS, [5]UNIVERSIDADE ESTADUAL DE MARINGÁ, [6]UNIVERSIDADE FEDERAL DE GOIÁS, [7]UNIVERSIDAD SUDAMERICANA SALTOS DEL GUAÍRA, [8]UNIVERSIDADE BRASIL, [9]CENTRO UNIVERSITÁRIO SÃO LUCAS, [10]UNIVERSIDADE PARA O DESENVOLVIMENTO DO ESTADO E DA REGIÃO DO PANTANAL, [11]ESCOLA BAIANA DE MEDICINA E SAÚDE PÚBLICA

Autor / Tradutor correspondente*: Alex Moreira Souza med.alexmoreira@gmail.com*

INTRODUCTION

With the increase in sedentary lifestyles and the growing consumption of processed foods containing high levels of sodium, for example, the prevalence of high blood pressure has increased rapidly, with an incidence that has been covering a wide spectrum of age groups and affecting both men and women. Even with drug therapy, many patients are unable to achieve adequate blood pressure control, given that some of these individuals have great difficulty in changing certain lifestyle habits, such as adopting a healthy diet and practicing regular physical activity[1].

In the same way, population aging, obesity, increasing urbanization and the adoption of a sedentary lifestyle are largely responsible for the increase in the prevalence and incidence of another disease: metabolic syndrome (MS). Just like with high blood pressure, treatment for a patient with MS does not only involve medication, but also changes in lifestyle, such as diet, regular exercise and proper blood glucose monitoring, which, together, not only control the disease, but also promote a better quality of life for the patient, both physically and psychosocially[2].

Despite obtaining a lot of evidence about the benefits of regular physical exercise[3], it has been quite difficult to get patients to adhere to this pillar of treatment, as stated by Giroto *et al*. (2013), in their cross-sectional study in Paraná, analyzing 394 hypertensive and MS, patients aged 20 to 79 years registered in a family health unit, in which the practice of physical activity was reported by only 30.6% of hypertensive patients and 24.5% of those with Metabolic Syndrome, but only 72 (19.9%) reported practicing it regularly[4].

Since both of the aforementioned diseases have dietary errors and a sedentary lifestyle as risk factors, we sought to analyze how lifestyle changes have impacted the treatment of MS and hypertension.

METHODOLOGY

The systematic literature review is basic, exploratory and descriptive in nature, with a qualitative approach and a retrospective bibliographic procedure. The search for

articles was carried out in May 2025, using the electronic databases PubMed and Science Direct. The descriptors “Metabolic Syndrome” AND “Hypertension” were used to search the databases.

RESULTS AND DISCUSSION

A study conducted in Francisco Morato showed that 80.5% of the interviewees had high blood pressure and 56.2% had MS[3]. However, in a study conducted with 430 hypertensive patients in São Paulo, only 47.6% of the individuals had their disease under control. In contrast, a study conducted in the city of Araras reported that 53% of the interviewees with MS had adequate glycemic control[5].

A study conducted with diabetic patients in the city of Curitiba regarding lifestyle changes showed that 73.5% of the interviewed patients started a diet plan, and 45.3% were monitored by a nutritionist[6]. Another study conducted with hypertensive patients in the city of Londrina reported that 68.7% of the patients had some change in their medication after being diagnosed with the disease[7]. In another article conducted in China, diabetic patients were followed for 20 months after starting a balanced diet, and they showed a reduction in HbA1c, with an average decrease of 1.9 (±0.4) percentage points, and a decrease in the results of the glucose tolerance test after 2 hours, with an average reduction of -93.2 (±19.9) mg/dL[8].

Regarding weight loss, a systematic review that included 24 randomized clinical trials, with a total of 3,740 participants, analyzed the effectiveness of lifestyle changes in weight loss, comparing diet and physical exercise (combined and each alone). Compared to diet alone, diet combined with exercise showed a more significant reduction in body weight, with an average difference of 1.50 kg (95% confidence interval (CI) -1.97 to -0.78) in body weight between the patient who improved their diet alone and the one who improved their diet together with physical exercise[9]. The same was verified in a study carried out at the Basic Health Unit of São Paulo, in which an intervention was proposed in a population of diabetic and hypertensive patients through lifestyle changes of this population. With the 239 patients, an absolute reduction of 30% was observed in the number of patients with moderate and severe blood pressure and for diabetics, the absolute reduction was 26%, for those with blood

glucose levels above 200mg/dl, which reflected in the reduction in the use of medications for the treatment of both diseases[10].

FINAL CONSIDERATIONS

According to the findings of this study, adopting healthy lifestyle habits is crucial for patients with heart disease and MS, as it can prevent complications, improve quality of life and reduce the risk of cardiovascular and metabolic events. Changes such as a balanced diet, regular physical activity, weight and stress control, and avoiding smoking and excessive alcohol consumption are essential.

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