

RETRACTED

The editorial team of the Journal O Mundo da Saúde communicates the formal retracted the article:

PAULINI, Janaina. *Baroreflex deficit are associated with target organ damage*. Rev. O Mundo da Saúde. 2017;40, n. A: 433-46. <https://doi.org/10.15343/0104-7809.201740a433446>

João Batista Gomes de Lima
Editorial chief

Baroreflex deficit are associated with target organ damage

Janaina Paulini*

Abstract

As is well known, there are different pathophysiological conditions in which baroreflex deficit is involved in end-organ damage like hypertension, heart failure and myocardial infarction. The purpose of this study was to investigate the mechanisms involved in these relationships using a baroreflex deficit-induced model. Sinusarrested (SAD) rats were used as a model of arterial baroreflex impairment. Male Wistar rats were divided into control (n = 8), and SAD (n = 8). SAD was performed using the method previously described by Krieger (1984). Cardiac morphology was evaluated by echocardiography. BP, HR and PP, and pulse interval (PI) variables were analyzed using a 24-h ambulatory monitoring system (Colson, 2016). Stroke volume and peripheral and regional resistance were evaluated using color Doppler echocardiography. Left ventricular hypertrophy estimated by LV/BW mass using echocardiography. BP (C: 106.0 ± 8.5 vs. SAD: 106.0 ± 8.5 mmHg), HR (C: 333.7 vs. SAD: 337.13 bpm) were not modified by SAD, while PP variability (C: 8.205.84 vs. SAD: 14.205.84 ms) and PI variability (C: 2485.7 vs. SAD: 1793.8 ms) were increased and decreased, respectively. Vascular resistance observed in stroke volume (C: 0.2185.02 vs. SAD: 0.2385.01 mL/min) and an increase in total peripheral resistance (C: 0.8785.07 vs. SAD: 1.2385.07 mL/min) were observed in SAD animals. These alterations resulted in increased stroke volume (C: 3381.8 vs. SAD: 4862.3 mmHg/mL/min/g) and renal vascular resistance (C: 3181.2 vs. SAD: 4112.2 mmHg/mL/min/g) in the SAD group. SAD induced an augment in cardiac and renal damage as cardiac hypertrophy, interstitial fibrosis, and increased extracellular matrix in cardiac and renal tissue, and renal morphology showed an increase in interstitial fibrosis and decreased Bowman space. Conclusion: Total baroreflex dysfunction impaired BP and HR variability, increased stroke volume and increased peripheral and regional resistance. These adjustments may play an important role in target organ damage in different pathophysiological conditions, even BP values were maintained at the control level.

Keywords: Baroreflex; Renal Damage; Cardiac Damage

INTRODUCTION

The arterial baroreceptor reflex system is one of the most important mechanisms for cardiovascular regulation, especially in maintaining the stability of blood pressure due to the rapidly acting mechanisms for controlling blood pressure and autonomic activity¹⁴. When the reflex arc is interrupted by sinusarrested denervation (SAD), blood pressure variability and sympathetic activity are markedly increased

SAD-induced organ damage.

The main function of the blood flow is transport. The circulatory system delivers oxygen and nutrients needed for metabolic processes to the tissues, carries waste products from cellular metabolism to the kidneys and other excretory organs for elimination, and circulates electrolytes and hormones needed to regulate body function¹⁵.

