



Galectin-3 in Blood Serum and Lymphocytes as a Marker of Myocardial Damage in Patients with Arterial Hypertension and COVID-19

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Abstract

Background: The constant increase of arterial hypertension and the development of pathology at an earlier age are global healthcare problems that cause damage to vital organs and worsen patient prognosis. In recent years, studies have shown that galectin-3 plays a role in the development and progression of arterial hypertension and coronavirus disease (COVID-19).

Objective: The explanatory research study aimed to analyze the prognostic value of galectin-3 determination in the serum blood and lymphocytes of patients with arterial hypertension and coronavirus disease (COVID-19).

Methods: The patients were divided into two groups: Group 1 consisted of 36 individuals with AH, Group 2 included 35 patients with arterial hypertension and polysegmental COVID-19 pneumonia, and 16 practically healthy individuals were included in the control group. All patients underwent anthropometry, biochemical blood analysis, determination of galectin-3, level in serum and lymphocytes, IL-1 β , IL-6, and echocardiography.

Results: The highest level of galectin-3 was found in patients of Group 1, while in patients of Group 2, the concentration of galectin-3 was significantly decreased, mostly due to the treatment of COVID-19, in addition to prolonged antihypertensive therapy.

Conclusion: The level of galectin-3 in serum and lymphocytes was significantly higher in patients of both groups compared to the control group ($p < 0.05$). Arterial hypertension causes structural changes in the cardiovascular system that are associated with elevated levels of galectin-3 in serum and lymphocytes. It can be used as a marker of myocardial damage in the context of arterial hypertension and COVID-19.

Keywords: COVID-19, arterial hypertension, galectin-3, inflammation, myocardial remodeling, proinflammatory