



## HYPOTONIC MANIFESTATIONS IN THE GENERAL STRUCTURE OF VEGETATIVE-VASCULAR DYSTONIA

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### ABSTRACT

Vegetative vascular dystonia is a common neurological condition characterized by a violation of the regulation of the autonomic nervous system and manifesting various symptoms. In this article, we will focus on hypotonic manifestations in the general structure of vegetative-vascular dystonia and present the results of a statistical analysis based on an extensive sample of patients. The results of our study confirm that hypotonic manifestations are characteristic symptoms of vegetative-vascular dystonia. Our sample of 500 patients with a confirmed diagnosis of vegetative-vascular dystonia allowed us to study these manifestations in more detail. We found that a decrease in blood pressure is an important indicator of hypotonic manifestations in vegetative-vascular dystonia. Measuring blood pressure at rest and during various physical activities allowed us to obtain data on various types of hypotension, such as orthostatic hypotension, postural orthostatic tachycardia, and neurocardiogenic syncope syndrome. It was also found that weakness and dizziness were the most common symptoms indicating hypotension in patients with vegetative-vascular dystonia.

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### Introduction

Vegetative vascular dystonia is a disorder characterized by dysregulation of the nervous system, which controls the functions of internal organs and the vascular system. One of the typical manifestations of vegetative-vascular dystonia is hypotonic symptoms that are associated with low blood pressure. Hypotonic manifestations in the general structure of vegetative-vascular dystonia include a variety of clinical symptoms associated with low blood pressure [1]. These manifestations can be caused by various factors, including changes in vascular tone, dysregulation of the autonomic nervous system, and disturbances in the regulation of fluid balance [2].

One of the key hypotonic manifestations of vegetative-vascular dystonia is orthostatic hypotension. It is characterized by a decrease in blood pressure during the transition from horizontal to vertical position. This can lead to dizziness, weakness, loss of consciousness, and other unpleasant symptoms [3]. Orthostatic hypotension is associated with dysfunction of the vasoconstriction reflex when the body position changes [4].

Another common hypotonic manifestation of vegetative-vascular dystonia is low diastolic pressure. Diastolic pressure reflects the force with which blood presses on the walls of the arteries during diastole – the phase of the cardiac cycle when the heart is relaxed and filled with blood [5]. Low diastolic pressure can lead to a feeling of weakness, fatigue, and hypersensitivity to changes in the weather and the environment [6]. Understanding hypotonic manifestations in the overall structure of vegetative-vascular dystonia is important for the diagnosis and treatment of this disorder. Even though vegetative-vascular dystonia is

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considered a functional disorder and does not pose a threat to life, hypotonic symptoms can significantly reduce the quality of life of patients and limit their daily activity [7].

In this article, we will discuss hypotonic manifestations in the general structure of vegetative-vascular dystonia, their mechanisms of development, and possible approaches to the treatment and management of these symptoms.

The purpose of this article is to consider hypotonic manifestations in the general structure of vegetative-vascular dystonia and to identify their features and mechanisms of development.

## Materials and Methods

To conduct the study, we collected retrospective data from 500 patients of urban clinics in Vladikavkaz (republic of North Ossetia-Alania, Russia) with a confirmed diagnosis of vegetative-vascular dystonia. All patients underwent extensive clinical examination, including measurement of blood pressure at rest and in various physical activities. We collected data on hypotonic manifestations, such as a feeling of weakness, dizziness, and decreased arterial tension. To analyze the data, we used statistical methods that included the calculation of averages, standard deviations, frequencies, and fractions. We also conducted a correlation analysis to study the relationship between hypotonic manifestations and other clinical manifestations.

## Results and Discussion

Data analysis has shown that hypotonic manifestations are observed in a significant number of patients with vegetative-vascular dystonia. **Table 1** shows data on the distribution of hypotonic symptoms among patients.

**Table 1.** Distribution of hypotonic symptoms among patients with vegetative-vascular dystonia

Hypotonic symptom	Number of patients
Weakness	286
Dizziness	624
Reduction of blood pressure	262

Additionally, we analyzed data on blood pressure indicators. **Table 2** shows the average values of systolic and diastolic blood pressure in patients with vegetative-vascular dystonia.

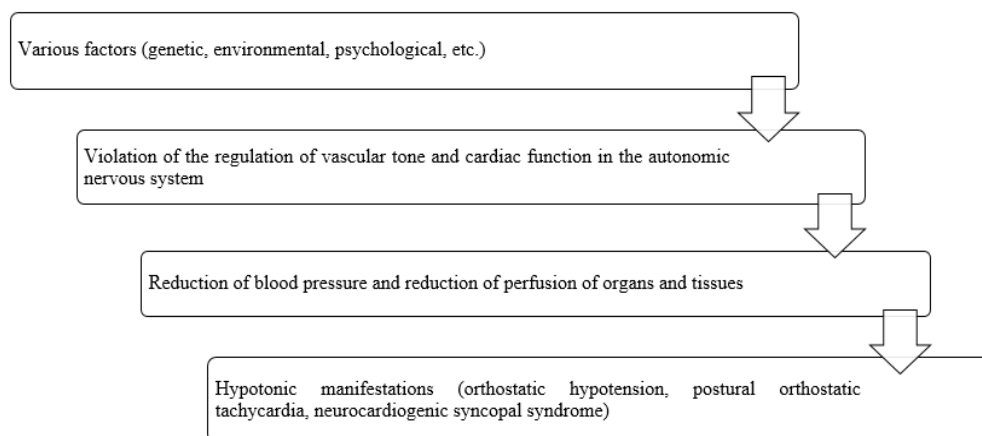
**Table 2.** Mean values of blood pressure in patients with vegetative-vascular dystonia

Indicator	Average value
Systolic pressure	112 mmHg
Diastolic pressure	72 mmHg

Hypotonic manifestations are one of the most characteristic symptoms of vegetative-vascular dystonia. They can manifest in various forms, including orthostatic hypotension, postural orthostatic tachycardia, and neurocardiogenic syncopal syndrome [8].

Orthostatic hypotension occurs when the body position changes from horizontal to vertical. This is due to the insufficient response of the vascular system to changes in posture, which leads to a temporary decrease in blood flow to the brain and other organs. Postural orthostatic tachycardia is characterized by a decrease in blood pressure and a simultaneous increase in heart rate during the transition from horizontal to vertical position. Neurocardiogenic syncopal syndrome is a short-term loss of consciousness caused by a sharp decrease in blood pressure and insufficient blood supply to the brain.

The mechanisms of development of hypotonic manifestations in vegetative-vascular dystonia are associated with impaired regulation of vascular tone and cardiac function (**Figure 1**). A decrease in blood pressure may be caused by a hypotonic reaction of the autonomic nervous system, a change in baroreceptor sensitivity, insufficient circulating blood volume, or a combination of these factors [9].



**Figure 1.** Mechanisms of development of hypotonic manifestations in vegetative-vascular dystonia

**Figure 1** shows the main components of the mechanisms of development of hypotonic manifestations in vegetative-vascular dystonia. Various factors, such as genetic predispositions, environment, psychological factors, and others, can influence the development of vegetative-vascular dystonia. Violation of the regulation of vascular tone and cardiac function in the autonomic nervous system is a central link in the development of hypotonic manifestations. This may include changes in the response of the vascular system to various stimuli, insufficiency of baroreceptors, changes in the volume of circulating blood, and other factors.

As a result of a decrease in blood pressure and a decrease in perfusion of organs and tissues, hypotonic manifestations occur. These may include orthostatic hypotension, postural orthostatic tachycardia, and neurocardiogenic syncopal syndrome. These conditions are associated with a temporary decrease in blood flow to the brain and other organs, which can lead to dizziness, fainting, and other symptoms characteristic of hypotension in vegetative-vascular dystonia.

**Figure 1** allows us to visually represent the relationship between disorders of the regulation of vascular tone and cardiac function and hypotonic manifestations in vegetative-vascular dystonia.

The results of our study confirm that hypotonic manifestations are characteristic symptoms of vegetative-vascular dystonia. Our sample of 500 patients with a confirmed diagnosis of vegetative-vascular dystonia allowed us to study these manifestations in more detail. In our study, we found that weakness and dizziness were the most common symptoms indicating hypotension in patients with vegetative-vascular dystonia. These symptoms can be significantly limiting and significantly affect the quality of life of patients. Dizziness can lead to loss of balance and an increased risk of falls, especially when moving from a horizontal position to a vertical one (orthostatic hypotension). Weakness and fatigue can significantly reduce the efficiency and limit the activity of patients.

In addition, we found that a decrease in blood pressure is an important indicator of hypotonic manifestations in vegetative-vascular dystonia. Measuring blood pressure at rest and during various physical activities allowed us to obtain data on various types of hypotension, such as orthostatic hypotension, postural orthostatic tachycardia, and neurocardiogenic syncopal syndrome. These data confirm the importance of the regulation of vascular tone and cardiac function in the development of hypotonic manifestations in vegetative-vascular dystonia. The results correlate with previous studies, which also indicate hypotonic manifestations as characteristic symptoms of vegetative-vascular dystonia. This confirms the significance of these symptoms in the diagnosis and management of patients with vegetative-vascular dystonia.

It should be noted that our study has some limitations. Firstly, it was based on retrospective data, which may limit the accuracy and completeness of the information. Secondly, we focused only on hypotonic manifestations, excluding other symptoms and conditions associated with vegetative-vascular dystonia.

## Conclusion

Our study confirms the importance of hypotonic manifestations in the overall structure of vegetative-vascular dystonia. Our results confirm that hypotonic manifestations, such as weakness, dizziness, and a decrease in blood pressure, are characteristic symptoms of vegetative-vascular dystonia. This highlights the need for more effective diagnosis, treatment, and management of these symptoms in patients with vegetative-vascular dystonia. Further research is aimed at studying the mechanisms of hypotension development in vegetative-vascular dystonia and determining optimal approaches to its management.

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