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The Role of Compression Stockings in the Treatment of Patients with Vasovagal Syncope

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ABSTRACT

Syncope is a sudden, transient and complete decline in the level of consciousness during which the patient cannot maintain his/her muscle tone and falls to the ground. Recovery is usually spontaneous and quick. Stimulants such as standing for a long time, hot bath and emotional stress are associated with this type of syncope. A significant percentage of cases of syncope occur while standing. Standing leads to the transfer of 500-800 ml of blood to the abdomen and organs. To deal with hypovolemia and reduce venous return, elastic compression stockings can be considered for treatment.

Keywords: *Compression Stockings, Syncope, Vasovagal.*

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Dear Editor of Journal of Babol University of Medical Sciences

Syncope is a sudden, transient and complete decline in the level of consciousness during which the patient cannot maintain his/her muscle tone and falls to the ground. Recovery is usually spontaneous and quick. Syncope is a clinical diagnosis and a definitive diagnosis can be made with a detailed history and physical examination. Vasovagal syncope (also known as neurocardiogenic syncope, vasodepressor syncope, or faint) is a common dysregulation of blood pressure that manifests itself as hypotension with or without bradycardia (1). Stimulants such as standing for a long time, hot bath and emotional stress are associated with this type of syncope (1, 2). Although vasovagal syncope is usually considered benign, it can lead to a significant disturbance in daily functioning and quality of life in recurrent cases (3). Currently, there is no proven treatment for this disease which is completely effective, and the investigation for new treatment methods is mandatory (4).

A significant percentage of cases of syncope occur while standing. Standing causes the transfer of 500-800 ml of blood to the abdomen and organs, so it causes a sudden decrease in venous return, a decrease in cardiac output, stimulation of aortic, carotid and cardiopulmonary baroreceptors, and as a result, an increase in the sympathetic reflex response. It is assumed that vasovagal syncope starts from a paradoxical reflex, secondary to reduced left ventricular filling and reduced venous return. This decrease in left ventricular filling leads to a decline in cardiac output and blood pressure, which is sensed by arterial baroreceptors, and the level of catecholamines increases. This increase in catecholamine, along with the decline in venous filling, causes severe contraction of the ventricle, which does not have enough blood volume. Therefore, with the reduction of effective circulating blood volume and brain fluid, the patient becomes unconscious (5).

To deal with hypovolemia and reduce venous return, elastic compression stockings can be considered for treatment. The effectiveness of elastic compression stockings in improving venous return is well established (6). In addition, elastic compression stockings are recommended to improve symptoms in patients with orthostatic hypotension (6). Considering its role in the reduction of venous return in vasovagal syncope, there is a pathophysiological rationale for the use of elastic compression stockings for this disease, and they are sometimes recommended for patients with vasovagal syncope. However, apart from small studies investigating the role of elastic compression stockings in increasing orthostatic tolerance or response to the slant board test (7), there is no strong evidence to address the therapeutic effectiveness of

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elastic compression stockings in patients with vasovagal syncope. Therefore, a randomized controlled trial can be a start to provide strong evidence about the effectiveness of elastic compression stockings in the treatment of vasovagal syncope.

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