

Low Blood Pressure in Young Women: Poor Concentration, Apathy, Acute Morning Weakness and Dyspeptic Symptoms

*Baev Valery Mikhaylovich, Koryukina Irina Petrovna, Kudryavtseva Elena Nikolaevna,
Koltyrina Elena Nikolaevna, Golubina Irina Nikolaevna,
Danshina Anastasia Sergeevna and Luchnikova Natalya Petrovna*

Vagner Perm State Medical Academy Petropavlovskaya str. 26, Perm, 614990 Russia

Abstract: The aim of the study was to identify the differences in the frequency of non-specific complaints in young women with low and normal systolic blood pressure (SBP). The single-step research method was used. The target group included women aged 18–30. The women with acute respiratory viral infection and pregnant women were excluded from the research. The normal SBP was assessed as the range of 120-129 mmHg and low SBP was the range of 61–99. The symptoms; specific for low arterial tension were studied. 1264 women were divided into two groups: those with low (n=91) and normal SBP (n=287). The study data were analyzed with Z-test. The examination results showed a difference in the frequency of complaints among women with low and normal SBP, such as poor concentration (36% and 20%), acute weakness and dizziness in the morning (35% and 23%), apathy (37% and 11%), heaviness in the epigastric region and a bitter taste in the mouth, appetite loss, eructation of swallowed air, heartburn, flatulence and constipation (22% and 11%). Headaches, dizziness, tendency to faint, sensitivity to cold (cold hands and feet) and fatigue are not the distinguishing symptoms of arterial hypotonia in young women.

Key words: Low blood pressure % Young women

INTRODUCTION

In present, the low blood pressure (LBP) is considered to be a risk factor of cardiovascular complications in elderly patients [1-4]. Ambulatory monitoring of blood pressure has indicated that the LBP is most common among patients and reaches 56% [5]. However, there is still a strong opinion of physicians about the safety of chronic LBP, which is based on outdated data obtained in the first half of the XX century [6, 7]. According to the literature data, LBP is associated with a high frequency of such symptoms as debilitation, dizziness, faints, chilliness in limbs, etc. [8-11].

The specificity of the complaints known from the scientific literature, which are attributed to LBP, is disputable and requires additional study.

The purpose of this study was to identify the difference in the proportions of non-specific complaints among young women with low and normal SBP.

MATERIALS AND METHODS

Arterial hypotension was an objective of our study. The subject of the study was the identification of the relationship between arterial hypotension (in the preclinical state) and subjective symptoms of hypoperfusion of organs and body systems.

The single-step research method was used. Students of higher educational institutions in Perm were examined before being allowed to participate in sports activities. The examination was carried out in the outpatient clinic. Examination time was chosen between 3 and 7 p.m. The inclusion criteria were as follows: females aged 18–35. The women with acute respiratory viral infection and pregnant women were excluded from the research. The study protocol complied with the Declaration of Helsinki (1975) and its revised version (1983). Design, research protocol and informed consent of the patients to participate in the study were approved

by the Ethics Committee of the Vagner Perm State Medical Academy, Russian Ministry of Health. Persons admitted to the examination provided a written consent to participate in this study.

SBP in the range of 120-129 mmHg was regarded as normal [3]. SBP in the range of 61-99 mmHg was regarded as low [12]. Blood pressure was measured twice for the right arm in the sitting position; (with the forearm lying on the table) with tonometer A&D UA-777 (AGD Company, Japan).

The authors have developed a questionnaire with a list of complaints; typical of low BP, the symptoms of dysfunctions of the digestive system were also added [10, 13-17]. The evaluation was carried out using the responses to the question “Do you have any of these complaints?”:

- C Slugginess;
- C Apathy;
- C Feeling—of acute weakness and dizziness in the morning;
- C Poor capacity for physical work;
- C Feeling of shortness of breath at rest; shortness of breath becomes more evident at low physical activity;
- C Swelling of legs and feet in the evening;
- C Irritability and emotional instability;
- C Potency and libido problems in men, menstrual cycle disturbance in women;
- C Frequent feeling of heaviness in the epigastric region and a bitter taste in the mouth, loss of appetite, belching air, heartburn, flatulence and constipation;
- C Cardiac pain;
- C Headaches;
- C Fatigue and/or the need for prolonged sleep;
- C Poor concentration;
- C Rapid fatigue during physical exercise;
- C Increased sensitivity to cold (cold hands and/or feet);

- C Dizziness;
- C Tendency to faints.

Response variants were “yes or no”.

A total of 1264 students corresponded to the selection and rejection criteria. All students were divided into two groups: test (low SBP, n = 91) and control groups (with normal SBP, n = 287). The groups differed in terms of age, weight, SBP and diastolic blood pressure (DBP) (Table 1).

Statistical analysis was performed using the program “Statistica 6.1” (StatSoft-Russia, 2009). The non-parametric statistics was used, since SBP was characterized by maldistribution (Kolmogorov-Smirnov and Lilliefors tests, $p < 0.05$). Z-test was used to compare the percentage of complaints between the groups. The differences were considered to be significant at $p < 0.05$.

RESULTS

The difference between women with low and normal SBP was in the complaints of poor concentration, acute weakness and dizziness in the morning, apathy, heaviness in the epigastric region and a bitter taste in the mouth, appetite loss, eructation of swallowed air, heartburn, bloating and constipation (Table 2).

DISCUSSION

We assume that the differences between the groups in age and weight did not affect the reliability of the study, since LBP is associated with lower weight [18]. The difference in age (1 year) should not be regarded as a significant factor.

It is believed that the clinical presentation of low blood pressure is stipulated by hypoperfusion of organs followed by neurovegetative disorders [19, 20].

Table 1: Comparative characteristics of the test and control groups.

Parameter	Test group (n=91) median (25-75%)	Control group (n=287) median (25-75%)	p
Age, years	19 (18-20)	18 (18-19)	0.021
Height, cm	162 (158-168)	164 (160-169)	0.055
Wight, kg	50 (48-56)	56 (52-64)	0.000
SBP, mmHg	90 (90-97)	122 (120-125)	0.000
DBP, mmHg	60 (59-62)	79 (72-80)	0.000

Table 2: Differences in symptoms in women in the test and the control groups.

Symptoms	Test group n = 91	Control group n = 287	P
Slugginess	34 (37%)	79 (28%)	0.134
Apathy	25 (27%)	32 (11%)	0.000
Feeling of acute weakness and dizziness in the morning	32 (35%)	67 (23%)	0.032
Poor capacity for physical work	27 (30%)	67 (23%)	0.226
Feeling of shortness of breath at rest; shortness of breath becomes more evident at low physical activity	14 (15%)	41 (14%)	0.401
Swelling of legs and feet in the evening	12 (13%)	24 (8%)	0.219
Irritability and emotional instability	35 (38%)	79 (28%)	0.09
Potency and libido problems in men, menstrual cycle disturbance in women	14 (15%)	31 (11%)	0.401
Frequent feeling of heaviness in the epigastric region and a bitter taste in the mouth, appetite loss, belching air, heartburn, flatulence and constipation	20 (22%)	31 (11%)	0.013
Cardiac pain	19 (21%)	57 (20%)	0.954
Headaches	51 (56%)	140 (49%)	0.297
Fatigue and/or the need for prolonged sleep	63 (69%)	179 (62%)	0.278
Poor concentration	33 (36%)	56 (20%)	0.002
Rapid fatigue during physical trainings	35 (38%)	104 (36%)	0.826
Increased sensitivity to cold (cold hands and/or feet)	38 (42%)	122 (43%)	0.963
Dizziness	23 (25%)	70 (24%)	0.957
The tendency to faints	16 (18%)	35 (12%)	0.199

Therefore, LBP is the reason for low concentration and apathy due to brain hypoperfusion. Acute morning weakness and fatiguability can hardly be explained only by the response of a “hypotensive” person to the change in body position after sleeping (orthostatic dysregulation). Moreover, it is even more difficult to reveal a relationship between LBP and the heaviness in the epigastric region and the bitter taste in the mouth, low appetite, belching air, heartburn, flatulence and constipation, although low appetite and flatulence are the symptoms of clinical hypotension. [21]. It is a notable fact that there were no differences in complaints of dizziness and a tendency to faint at low and normal SBP.

In our study, about half of women both with normal and low SBP complained of dizziness and/or the need for prolonged sleep, headaches and increased sensitivity to cold (cold hands and / or feet in the first place). One third of women with both normal and low SBP complained of listlessness, fatiguability during physical activities, irritability and emotional instability.

Emotional behavior and the search for social support as a means of survival under stress are specific for women and underlie a large number of complaints imposed during the medical examination (in contrast to the behavior of men who are focused on self-help) [22].

CONCLUSIONS

- C Headaches, dizziness, tendency to faint, sensitivity to cold (cold hands and feet) and fatigue are not the distinguishing symptoms of arterial hypotension in young women.
- C Young women with low SPB (61-99 mmHg) have the symptoms of weakness and dizziness in the morning; apathy, poor concentration, as well as a feeling of heaviness in the epigastric area and bitterness in the mouth, appetite loss, belching air, heartburn, bloating and constipation 1.5-2 times more often than women with normal SBP.

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