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SPECTRUM OF AUTONOMIC NERVOUS SYSTEM DISORDERS IN THE ELDERLY DEPENDING ON GENDER

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Abstract
Cerebrovascular diseases are one of the most urgent and priority problems of modern medicine. With increasing life expectancy there is a significant increase in cerebrovascular pathology, in particular, chronic cerebral ischemia, with a clear correlation between dysfunction of cardiovascular and other visceral systems of the body and deterioration of the condition and functioning of the central nervous system.

Keywords Autonomic nervous system, old age, cerebrovascular diseases.

INTRODUCTION

The diagnosis of "autonomic dysfunction syndrome" (ADS) is not presented in ICD-10. The code G90 – disorders of the autonomic nervous system [1] – is used as an official diagnosis for autonomic disorders. However, ADS is a disorder that is common in the population. One of the most common reasons for visiting primary care physicians is severe physical symptoms, such as heart pain or gastrointestinal disorders [4]. Moreover, every fifth visit to primary care is associated with physical symptoms that physicians cannot attribute to organic pathology or mental disorder. These unexplained symptoms can range from acute to chronic and from mild to severe, and contribute significantly to individual disability and the global burden of disease.

The syndrome of vegetative dysfunction is currently considered as a comorbid pathology of chronic cerebral ischemia, accompanying it as it develops. With increasing age, the patient experiences gradation of vegetative dysfunction. Changes occurring in the vegetative nervous system precede the neurological disorders that arise subsequently and serve as a manifestation of maladaptive reactions.

The aim of the study. To identify the frequency and nature of neurovegetative disorders depending on gender in elderly people.

METHODS

The study included 163 elderly patients aged 60 to 74 years (average 67.2+6.8 years) with clinically and laboratory confirmed stage 2 chronic cerebral

ischemia syndrome (CCIS2) and autonomic dysfunction syndrome (ADS) (106 (64.4%) women, 58 (35.6%) men). All patients were hospitalized in the neurology department of the Andijan State Medical Institute.

By gender, the patients were divided into 2 groups: Group I consisted of men (58 patients), Group II consisted of women (106 patients). The average age of women was 68.3+3.9 years, and of men - 64.1+4.5 years. The control group (CG) consisted of 20 patients who did not have clinical and laboratory criteria for CCI and SVD, comparable in gender and age. (Table 1).

Distribution of patients into groups

patients	n	%	Average age years
Male	58	35,4%	64,1+4,5
Female	106	64,6%	68,3+3,9

The state of the autonomic nervous system was assessed based on the characteristics of the initial vegetative tone (IVT), autonomic reactivity (AR), and autonomic support of activity (ASA). IVT and AR allow us to judge the homeostatic capabilities of the body, and ASA allows us to judge its adaptive mechanisms. The initial vegetative tone (IVT) was assessed based on the Kerdo vegetative index (VI), minute blood volume (MBV) (using the Lilje-Strander method), and cardiointervalography (CIG) [4]. The assessment of the initial vegetative tone (IVT) makes it possible to study the vegetative indices at relative rest (the balance of the parasympathetic and sympathetic influence of the ANS). The tension index (TI) is a reflection of the body's adaptation to pathology. Vagotonia was considered TI < 30 c.u., eutonia - TI = 30-60 c.u., sympathicotonia - TI > 90 c.u., TI > 160 c.u. - hypersympathicotonia (4).

RESULTS

The following symptoms of VDS were revealed in elderly patients during the survey: headaches (HB) - in 68.9%, esophageal dyskinesia (aerophagia, lump in the throat) - in 34.1%, gastric and intestinal dyskinesia (irritable bowel syndrome) - in 64.6%, clino-orthostatic hypotension (COH) - in 43.3%, neurogenic dysfunction of the bladder was in 23.8%, vestibulopathic syndrome (dizziness) - in 24.4%, panic attacks - in 18.9%, local hyperhidrosis - in 37.8%, angiotrophoneurosis was rare in 9.1% of cases (t.2).

As for gender differences, it was found that the frequency of vegetative complaints in women was more pronounced than in men. Reliably significant differences were for such complaints as "esophageal dyskinesia (aerophagia, lump in the throat)"; "stomach and intestinal dyskinesia (irritable bowel syndrome)"; "neurogenic dysfunction of the bladder"; "panic attacks" and "local hyperhidrosis" (Table 1).

In elderly patients with a vagotonic type in the anamnesis, pathology of the endocrine system was detected 1.5 times more often ($p<0.05$), frequent functional disorders of the gastrointestinal tract (GIT), with the sympathicotonic type, dysfunctions of the cardiovascular system were recorded, frequent extrasystoles, tachycardia, mild pathology of the central nervous system, deviations in the neurological status (microsymptomatology) were observed with high frequency in all forms of VDS.

During a structural study of concomitant neurological pathologies, it was found that women more often develop markers of more complex neurological dysfunctions, including neurogenic dysfunction of the bladder (1.7 times), panic attacks (2.3 times), $p<0.05$).

Table 2

Initial vegetative tone in elderly people with CCI II

Groups	Eytonia		Sympathicotonia		Vagotonia	
	n	%	n	%	n	%
мужчины n=58	5	8,6%	31	53,4%	22	37,9%
women n=106	10	9,4%	61	57,5%	35	33,0%
total	15	9,1%	92	56,1%	57	34,8%

The study revealed that the imbalance of vegetative homeostasis was characteristic of the majority of subjects – 90.9% (n=149). The groups had a small number of patients with eutonia, which is a sign of the balance of regulatory sympathoadrenal and cholinergic effects on the body. In general, elderly patients had a predominance of sympathicotonia compared to vagotonia and normotonia – 56.1%, 34.8% and 9.1%, respectively. Sympathicotonia indicates the tension of adaptive-compensatory mechanisms in the body.

In the studied groups, there was a reliably significant difference in the number of patients with sympathicotonia depending on gender. Thus, sympathicotonia was detected in men - in 31 patients (53.4%), in 22 patients (37.9%) vagotonia was observed, only 8.6% of patients had normal vegetative tone (Table 2).

Among women, the sympathetic influence was also predominant - in 61 (57.5%) patients, parasympathicotonia was in 35 women (33.0%), eutonia in 10 (9.4%). Patients with sympathicotonia predominated in the group of women. In the group of men, patients with parasympathetic vegetative tone reliably predominated ($p<0.05$).

CONCLUSIONS

Thus, among elderly people, autonomic dysfunction occurs in 90.9% of cases, more often in women. It should also be noted that features of autonomic tone were found in elderly patients with a predominance of hyperactivity of the sympathetic autonomic nervous system. This suggests that there is a high probability of failure

of the body's adaptive capabilities. Given the high degree of aggravation of various comorbid conditions, we can talk about the risk of reducing the functional reserves of the cardiovascular system.

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