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PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1324401>Available online at: <http://www.iajps.com>**Research Article****PSYCHOPHARMACOTHERAPY FOR SOMATOFORM AUTONOMIC DYSFUNCTION IN STUDENTS-MEDICANS 1 COURSE**

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Abstract:

Relevance: Somatization is an urgent problem of clinical and public health. Psychosomatic symptoms are difficult to treat and often lead to difficulties at work and social disadaptation. Particular importance somatoform autonomic dysfunction is for medical students in connection with high training load, stress and affective disorders.

The aim of the study is the development of differentiated approaches to psychopharmacotherapy in autonomic dysfunction in medical students.

Material and methods: 166 Russian-speaking first-year students aged 17 to 22 (18.0 ± 0.9) years were examined clinically-psychopathologically and psychometrically: 38 (22.9%) male and 128 (77.1%) female.

Results: Somatoform autonomic dysfunction (SAD) was detected in 12.6% of cases. The clinical picture was polymorphic: symptoms were seen on the side of the cardiovascular, respiratory, digestive system and, more rarely, urinary. The symptoms of SAD were formed on the background of severe asthenia in combination with anxiety, subclinical obtrusiveness, and dysmorphophobia, agoraphobia and panic attacks. In situations of psychoemotional stress, there were individual conversion symptoms. Training stress and low level of conflict and stress resistance helped to actualize the symptoms. 57% of students with SAD had suicidal behavior in the anamnesis (52% - internal forms and 5% - suicidal attempts); 9.5% had suicidal thoughts for the period of the survey. Carrying out a complex of psychological correction and psychopharmacotherapy showed high efficiency.

The conclusion: Strenuous study and educational stress cause subclinical asthenia, anxiety, depression and sleep disturbances in medical students of 1-year course, as well as vegetative dysfunction. A complex of psychocorrectional work is required in the structure of the training "Stress Management" and psychopharmacotherapy.

Key words: educational stress, medical students, somatoform autonomic dysfunction, anxiety, depression, stress management, psychological correction, psycho-pharmacotherapy.

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INTRODUCTION:

Somatization is a clinical and public health current problem as it can lead to social dysfunction, occupational difficulties and increased healthcare use [1]. As a result of the course of SAD, both recovery and development of cardiovascular pathology are possible: in almost 30% of cases of hypertension syndrome [2].

A systematic review and meta-analysis of the prevalence of somatoform autonomic dysfunction [3] in 70,085 patients (in the age range from 15 to 95 years) seeking primary care -sanitary assistance showed a frequency from 26.2% to 34.8%.

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) [4] changed the term «somatoform disorders» to «somatic symptom and associated disorders» and other modified diagnostic labels and criteria. More research is needed on the similarities and differences between physically unexplained and conditioned by medicine conditions [5].

Psychosomatic symptoms present a real problem for medical practice [6]. They are often described as non-specific, inorganic, functional, dysfunctional, or idiopathic. These "diagnostic puzzles" are difficult to treat. Psychosomatic symptoms are classified as hysteria, psychogenic, psychosomatic, conversion, somatization and somatoform.

Complaints about physical symptoms such as chronic pain, headache, dyspnea, joint pain, chest pain, dizziness, palpitations and fatigue, in the absence of an identifiable organic substrate, have a wide spread in medical practice [3, 7].

Particular importance is somatoform autonomic dysfunction for medical students due to high training load, stress [8, 9, 10, 11] and affective disorders [12, 13].

The aim of the study is the development of differentiated approaches to psychopharmacotherapy in autonomic dysfunction in medical students.

MATERIALS AND METHODS:

During the third and fourth month (November and December) of training at the 1st year of the Medical Institute, we examined a solid sample consisting of 166 Russian-speaking students aged 16 to 22 (18.0 ± 0.9) years: 38 (22.9%) male and 128 (77.1 %) female. The main research methods were:

1. Medico-sociological (questionnaire using the author's questionnaire, which includes a block of socio-demographic data, information about the way of life).

2. Psychometric: a test for learning stress [14]; Perceived Stress Scale (C. Cohen, G. Williamson), hospital scale of anxiety and depression – HADS [15].

3. Statistical: descriptive statistics, factor (the principal components method with varimax factor rotation) analysis.

To diagnose the SAD, we used the diagnostic research criteria ICD-10 (F45.3) [16].

RESULTS AND DISCUSSION:

In total, the following factors exerted the greatest stressor effect on the first year of medical students (Table 1).

Table 1: Indicators of educational stress (test for educational stress of Yu.V. Shcherbatykh: only the most stressful factors are presented)

№	Indicator	M	δ	Me	Q25	Q75
Stress associated with the organization of the learning process						
1	Strong teachers	5.6	2.3	6.0	4.0	7.0
2	Large training load	8.1	1.8	8.0	7.0	10.0
3	Lack of textbooks	5.2	3.3	6.0	2.0	8.0
4	Unclear, boring textbooks	3.5	2.7	3.0	1.0	5.0
5	Necessity to prepare for lessons a lot of time	6.9	2.8	8.0	5.0	9.0
6	Unreasonable class schedule	4.0	3.1	4.0	1.0	7.0
7	Many lessons per day	4.6	3.2	5.0	2.0	7.0
8	Not objective assessments in some disciplines	3.5	3.1	3.0	1.0	6.0
Stress related to the social situation						
1	Fear of the future	3.7	3.3	3.0	1.0	7.0
2	Problems in the personal life	2.9	3.3	2.0	0.0	6.0
3	Life away from parents	4.6	3.6	5.0	1.0	8.0
4	Lack of money	2.7	2.7	2.0	0.0	5.0
5	Difficulties to properly organize your daily routine	5.3	3.1	5.0	3.0	8.0
6	Irregular meals	5.2	3.2	5.0	2.0	8.0

As can be seen from Table 1, the most significant factors of educational stress are the "large training load", "the lack of textbooks," "life away from parents," "difficulties in organizing the regime of the day," and "irregular meals."

It is important that a significant number - 61 (36.7%) of students struggled with symptoms of stress through the use of sedative medicinal infusion and 48 (28.9%) - took a combination of non-prescription sedatives with herbal tinctures. A small number - 3 (1.8%) took tranquilizers and 5 (3%) - antidepressants. A significant number - 57 (34.3%) resorted to alcohol, and for 14 (8.4%) this way of fighting stress was significant (4 points and higher).

The majority of students - 137 (82.5%) went online to fight with stress, and for 62 (37.3%) of all respondents this method was the most significant (6 points and higher). The use of such methods of fighting stress is a risk factor for the formation of addictive behavior and addictions.

The most significant symptoms that appeared before and during the exams were psychosomatic, affecting the cardiovascular and respiratory systems, as well as mental signs of stress - anxiety, depressed mood and sleep disorders. The most acceptable ways to overcome the symptoms of stress tension, students of 1 year chose to take infusions of medicinal herbs, overeating and less often, using alcohol. At the same time, physical exercises and outdoor walks were not popular methods.

Perceived Stress Scale showed that only in 31.9% of cases stress resistance was defined as good and satisfactory, in the remaining 62.6% and 5.4% it was classified as bad and very bad, respectively.

The overwhelming majority of students - 156 (94%) showed asthenia, which in 118 (75.6%) cases was classified as moderately severe. In 80 (51.3%) cases, it was combined with a pronounced emotional lability, in 75 (48.1%) with attention disorder, and in 82 (52.6%) cases with autonomic instability. In 144 (92.3%) patients, asthenia was associated with various sleep disorders: 73 (46.8%) when falling asleep, 81 (51.9%) - during sleep and 136 (87.2%) - on waking. It is characteristic that in a significant number of cases - 46 (29.5%) there was a combination of pre- and post-somnolent disorders.

In 133 (80.1%) cases, individual symptoms of autonomic instability combined with asthenia were found and in 15 (9%) cases reach the clinical level of somatoform autonomic dysfunction and in 6 (3.6%) sub-

clinical. Thus, symptoms of SAD of varying severity were revealed in 12.6% of students. In the subsequent clinical analysis, 21 cases of SAD were examined. It is characteristic that in 6 (28.6%) cases of all students with the diagnosis of SAD, the diagnosis of vegetative-vascular dystonia was checked by the examinees long before the present examination (during the school period).

Symptoms of autonomic instability in students with SAD were particularly pronounced during the exams. Thus, tachycardia was characteristic for 86% of people, irregularities in the activity of the heart - 37%, shortness of breath - 57%, difficulty breathing - 33%, non-satisfaction with inspiration - 43%, muscular tension - 52.3%, muscular tremors - 67%, rapid urination - 19%, headaches - 67%, anxiety - 90%, suppressed build-up - 71%, difficult falling asleep - 71% and unpleasant dreams - 33%.

The clinical picture of SAD was polymorphic, often including a combination of cardiovascular, hyperventilation and gastrointestinal symptoms. Sensation of cardiac arrhythmia, periodic aching, stitching, or throbbing pain in the heart, unstable blood pressure, sudden increase in heart rate, dizziness combined with rapid breathing, difficulty in inhaling full chest, feeling of "lack of air", "dissatisfaction with inhalation, accompanied by varying degrees of symptoms of autonomic instability, increased anxiety and fear. Against this background, spastic and aching pains appeared in the lower abdomen, constipation, diarrhea, nausea, a feeling of bloating, belching of the air, flatulence, bloating. Significantly less often the symptomatology concerned the urinary system: "urinary stammering," frequent urge to urinate, especially in situations of psychoemotional stress, unpleasant sensations when urinating.

In 90% of patients with SAD, severe asthenia was diagnosed and in 10% - moderate in 52% of cases combined with impaired concentration, which made it difficult to assimilate the training material.

Anxiety was in 86% of cases and in 62% of cases it reached the clinical level. In 28% of cases of SAD, the symptoms of depression were registered, in 14% of cases it reached the clinical level.

In most cases (95%) with SAD, obsessive symptoms were observed, in more than half of the cases (57%) in moderately expressed degree and in the third part of cases combined with compulsions.

In more than half of the cases (52%) in conflict situations, students with SAD had conversion symptoms

(difficulty in swallowing food, lump in the throat, numbness in the hands, legs, tingling sensation in the body, dyskinesia).

In 28% of cases, there was comorbidity of SAD with agoraphobia and in 52% there were reduced panic attacks. In 52% of cases, SAD was combined with social phobias. In more than half of the cases (52%), students with SAD had symptoms of dysmorphophobia, in the third part of them, hindering social functioning.

In the overwhelming majority of cases, 81% of individuals with SAD had signs of a residual-organic lesion of the central nervous system: they were swinging on a swing and in transport, they did not tolerate heat, stuffiness; there were wincing at falling asleep, in a dream, a sense of falling into pro-mouth, they did not tolerate smells of gasoline, kerosene, cigarette smoke. Most students with SAD (57%) had

a history of syncope and 52% had stuttering at one time or another.

In total, 95% of students had sleep disorders in an overwhelming majority of patients: 62% had presomnia, 48% had intrasomnia, and 90% had post-somnias. In addition, 71% had nightmares, and 19% had a so-called "Sleepy paralysis".

In 57% of cases, students with SAD had a history of suicidal behavior: 33% had suicidal thoughts, 19% had suicidal intentions and intentions, and 5% had suicidal attempts. In addition, internal forms of suicidal behavior occurred in 9.5% for the period of the examination.

Factor analysis by the principal component method with varimax rotation of the factor revealed 5 most significant factors explaining 73% of the dispersion and determining the SAD (Table 2).

Table 2: Factors determining somatoform autonomic dysfunction

№	Factor and its components	% of the variance
1	Low stress resistance ($r = 0.91$), combined with anxiety ($r = 0.90$) and emotional lability ($r = 0.87$).	21.0
2	Low conflict resistance ($r = 0.86$).	16.3
3	Symptoms of obsessive-compulsive disorder ($r = 0.78$) in combination with attention disorder ($r = 0.78$).	14.0
4	Symptoms of panic disorder ($r = 0.82$) with symptoms of social phobia ($r = 0.75$).	13.0
5	Sleep disorders ($r = 0.77$) in combination with asthenia ($r = 0.71$).	8.7

Studying the attitude of the students themselves to their symptoms showed that 38% did not see any pathology requiring treatment, 48% - indicated the presence of some psychological problems, and 14% saw in themselves the presence of minor symptoms of a mental disorder.

The answer to the question, whether the symptoms listed in this questionnaire prevent you from social adaptation, the answers were as follows: 48% did not notice any problems in social adaptation, 24% noted difficulties in communication, 28% noted serious difficulties that are overcome with work.

As for the question of the advisability of seeking specialized help from specialists in the field of mental health, the majority - 57% consider the state of their mental sphere to be normal, 24% had thoughts of seeking help from a psychologist and 19% from the

therapist, but the fear of stigmatization inhibited the realization of the need.

To prevent the formation of SAD, the conditions of socio-psychological disadaptation, addictive and suicidal behavior, we have developed and implemented a different program of stress management. Along with this, on the basis of anonymity, students with identified SAD were offered psychopharmacotherapy. Completely passed the course of 11 students. For students with depression Fluoxetine was prescribed 0.01-0.02 1 time in the morning for 2-4 months. With subclinical anxiety, nootropics with a tranquilizing effect (Phenybutum) at a dose of 500-750 mg per day were prescribed. With severe anxiety, Thioridazinum was prescribed 15-30 mg per day for 2-3 months, or Alimemazine tartrate 5-15 mg per day. To stabilize the autonomic nervous system, Tofisopam was prescribed 50 mg 1-2 times a day. The drug showed high

efficiency. Being a psycho-vegetative regulator, along with an anxiolytic effect, not accompanied by sedative and miorelaxing action, it has moderate stimulating activity. The latter is very important for therapy during study. All students with signs of residual effects of residual organic lesion of the CNS were prescribed Carbamazepinum 0.2 for ½ tablets at night for 2-3 months, followed by a decrease in the dose to ¼ tablets at night 1-2 months. In the presence of pronounced sleep disorders (nightmarish dreams, wincing in a dream), tranquilizers of the benzodiazepine series were prescribed for a short time (for 7-10 days).

CONCLUSION:

Thus, as a result of the research it was established that the most significant factors of educational stress for the first-year medical students are "a large training load," "absence of textbooks," "life away from parents," "difficulties in organizing the regime of the day," and "Irregular meals". SAD is found in medical students of 1 course in 12.6% of cases, is polymorphic, including symptoms from the cardiovascular, respiratory, digestive system and, more rarely, urinary. Symptomatic of SAD was formed on the background of severe asthenia in combination with anxiety, obsessive-ness, dysmorphophobia, agoraphobia and panic disorders. The factors responsible for the formation of SAD were low stress and conflict resistance, symptoms of obsessive-compulsive and panic disorder, as well as sleep disorders.

Training stress and low level of stress and conflict resistance promote tobacco smoking, alcohol consumption, taking sedative medicinal infusions, and being in the Internet, which can be a risk factor for the formation of addictive behavior and addictions. The high specific gravity of internal forms of suicidal behavior in the anamnesis, and also connected with educational stress and personal problems is revealed.

To prevent the formation of SAD, the state of social and psychological disadaptation, addictive and suicidal behavior, we developed and implemented a differentiated program of stress management (in the form of training with elements of psychological correction). Along with this, psychopharmacotherapy was carried out on request, which showed high efficiency. It is associated, on the one hand, with the subclinical level of the disorder, on the other - due to the fact that the students had not previously taken therapy and they did not have resistance to psychopharmacological drugs. An important factor was the ongoing psychological correction.

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