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SYNDROM OF SENILE ASTHENIA AS A COMORBID STATE IN A MULTISPECIALITY HOSPITAL

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ABSTRACT — Among one of age-associated diseases, the syndrome of senile asthenia is increasingly common. The massive spread of senile asthenia syndrome among elderly patients forces us to look for new approaches to the treatment and diagnosis of this syndrome and other pathologies of organs and systems. The purpose of this study is: to determine the incidence and structure of comorbid pathology in patients with senile asthenia syndrome followed by the study of the clinical significance in the development of adverse complications in this category of patients.

According to a retrospective analysis of hospitalized patients with senile asthenia syndrome and various comorbid conditions, it was revealed that in the structure of chronic non-infectious diseases, arterial hypertension took the first place among cardiovascular diseases — 130 (100%). The second place among comorbid pathology was taken by chronic heart failure — 84% of cases. Ischemic heart disease was detected in 97 people (74%). Also, a significant place in the structure was taken by chronic kidney disease — 54 (41.5%), degenerative-dystrophic changes in the joints in 123 (94%) cases.

Thus, in the course of the study, it was revealed that senile asthenia syndrome is highly common among comorbid elderly patients. In addition, there is a certain relationship between senile asthenia syndrome and other age-related conditions, which undoubtedly affects the life expectancy and quality of life.

KEYWORDS — geriatrics, elderly age, geriatric patients, senile asthenia syndrome, comorbid conditions.

INTRODUCTION

Today, it is easy to notice the global aging trend and, as a result, an increase in the proportion of elderly people among the general population. This trend is due to the fact that the global aging of the population more and more covers various countries and states all over the world. According to the analysis of data from the Federal State Statistics Service, the population over 60 years old in Russia as of January 1, 2020 is more

than 45% among people of all age groups. In addition, one more trend has recently become noted — this is an increase in life expectancy. All over the world, the work of medical organizations strives to increase the life expectancy of patients and improve their quality of life [1, 2].

Among the patients who seek medical care on an outpatient or inpatient basis, the majority are elderly patients. In this regard, in recent years, such a field of medicine as geriatrics has been developing. Among the patients who seek medical help, it is possible to note patients with various pathologies of organs and systems, including those with age-associated diseases. Among one of these age-associated diseases, the syndrome of senile asthenia is increasingly common.

The British Geriatric Society in the 2014 consensus defines senile asthenia as a special health condition associated with the aging process, in which several body systems gradually lose their reserve capacities [8].

The massive spread of senile asthenia syndrome among elderly and senile patients forces us to look for new approaches to the treatment and diagnosis of this syndrome and other pathologies of organs and systems. The syndrome of senile asthenia can often aggravate the course of underlying conditions.

Currently, among patients of elderly age, cardiovascular pathology undoubtedly occupies a leading position. According to Rosstat (Russia), mortality from diseases of the cardiovascular system (CVD) in the Russian Federation in 2017 amounted to 587.6 cases per 100 thousand of the population with the initial registration of 4 million 706 thousand patients with diseases of the circulatory system [7].

Often, the severity of the process is not determined by the process itself, but by various accompanying changes in the body. One of such changes, aggravating the course of various diseases of organs and systems, is precisely the syndrome of senile asthenia. Against the background of aging processes in the body, various functional disorders occur, which can lead to the development of severe pathology. Thus, it can affect patients' life expectancy and their quality of life.

The syndrome of senile asthenia entails a decrease in physical activity, impaired functional activity, a change in the compensatory and restorative

reserve of the body, increases the risk of adverse complications and disasters. Against this background, the number of hospitalizations of patients for inpatient treatment more than doubles, and the risk of death increases [9].

In connection with the increase in patients with comorbid pathology in combination with the syndrome of senile asthenia, it is necessary to timely identify functional disorders in the body and predictors of the development of adverse complications. This will help optimize the approach to treatment and diagnosis among patients of this category and, accordingly, provide timely medical care. It is important at the initial contact between the doctor and the patient to identify the presence of senile asthenia syndrome, which, as mentioned above, can aggravate the course of any existing or developing pathology in the body [3, 5, 6].

The aim of the study: to determine the incidence and structure of comorbid pathology in patients with senile asthenia syndrome, followed by the study of the clinical significance in the development of adverse complications in this category of patients.

MATERIAL AND METHODS

The study included 130 patients who underwent inpatient treatment in the department of therapeutic profile at G.A. Zakharyin Clinical Hospital No. 6 (Penza, Russia) in 2019–2020. The study was retrospective, was carried out at the Department of Internal Diseases, Penza State University and consisted in the study of patient histories. The study complies with ethical standards, data on individual patients are not covered.

When analyzing the case histories, the following data were taken into account: age (over 65 years old), gender (male or female), the presence of senile asthenia syndrome, a history of arrhythmias, laboratory and instrumental diagnostics data during hospitalization (clinical blood test, lipid profile, creatinine level, glucose, blood electrolytes, blood pressure, electrocardiogram, Holter ECG monitoring, echocardiography). The above criteria made it possible to judge the presence of chronic non-communicable diseases. They also took into account the data on the intake of drugs, taking into account age, the presence of concomitant pathology, which made it possible to assess the treatment regimen and patient adherence to treatment. The diagnosis of cardiac arrhythmias in patients was established on the basis of anamnestic data, according to the results of clinical and instrumental studies. Screening of the syndrome of senile asthenia was carried out using the questionnaire "Age is not a hindrance". (Table 1).

Table 1. Questionnaire "Age is not a hindrance"

| Nº | Question | Answer |
|----|---|---------|
| 1 | Have you lost 5 kg or more in the last 6 months? | yes/not |
| 2 | Do you have any limitations in your daily life due to decreased vision or hearing? | yes/not |
| 3 | Over the past year, have you had any fall-related injuries or non-injured falls? | yes/not |
| 4 | Have you been feeling depressed, sad, or anxious over the past weeks? | yes/not |
| 5 | Do you have problems with memory, understanding, orientation or planning ability? | yes/not |
| 6 | Do you suffer from urinary incontinence? | yes/not |
| 7 | Do you have difficulty getting around the house or outside? (Walking up to 100 meters or climbing 1 flight of stairs) | yes/not |

Note: for each answer "Yes" 1 point is awarded

The interpretation of the results is based on the scores received for all the answers: 5 or more points — a high probability of the diagnosis of senile asthenia syndrome; 3–4 points — the likelihood of senile asthenia syndrome; 0–2 points — low probability of diagnosis of senile asthenia syndrome. Patients with scores of 3 or more underwent a more detailed examination based on the use of a geriatric card, which includes a short battery of tests of physical functioning (The Short Physical Performance Battery, SPPB), dynamometry, Mini-Cog test.

The maximum score for this test is 12 points. A result of ≤ 7 points is a criterion for diagnosing senile asthenia syndrome. (Fig. 1) [4].

Dynamometry is a method that allows you to determine the symmetry (or the degree of asymmetry) of the muscular system. Dynamometry is carried out using an electronic or mechanical dynamometer. The last test that has been used among patients with senile asthenia syndrome is the Mini-Cog test. This test is highly sensitive and informative and is used to detect cognitive impairments. (Table 2).

Interpretation of the results obtained: if the patient scored less than 3 points, the likelihood of cognitive impairment is high.

Comorbidity in patients with senile asthenia syndrome was assessed using the Charlson comorbidity index. The Charlson Index calculates the risk of mortality in the next 10 years. According to the comorbidity index of 1 point, the 10-year survival rate is 99%, 2 points — 96%, 3 points — 90%, 4 points — 77%, 5 points — 53%, 6 points — 21%. (Table 3).

The results obtained in the course of the study were formed into a database in Microsoft Excel 10.0.

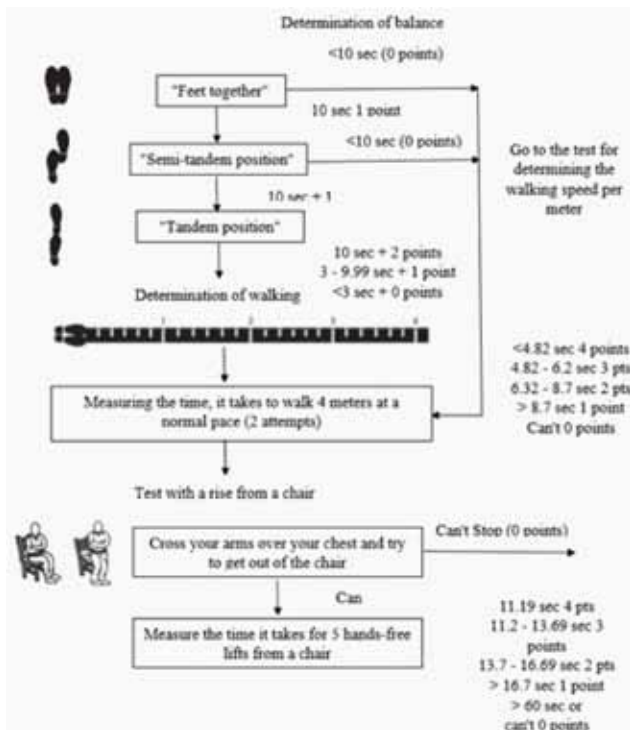


Fig 1. The Short Physical Performance Battery (SPPB)

Table 2. Mini-Kog test

| Step | Action | Points |
|------|---|--|
| 1. | Tell the patient: "Listen to me carefully. Now I will name 3 words, and you will need to repeat them after me and remember." Later I will ask them from you. "Pronounce 3 words clearly: key, lemon, flag. If the patient has not repeated all 3 words, from the words again. If the patient cannot repeat all 3 words after 3 attempts, refer to Step 2. | Not accrued |
| 2. | Tell the patient: «Next, I want you to draw a round clock. Arrange all the numbers that should be on the dial» Upon completion, ask the patient to adjust the clock to show the time at 11 hours and 10 minutes. | Correctly drawn clock - 2 points. A correctly drawn clock contains all the necessary numbers in the correct sequence without duplication. The numbers 12, 3, 6, 9 are located in the corresponding places. The arrows point to the numbers 11 and 2 (11:10). The length of the arrows is not included. Failure to draw the clock correctly or failure = 0 points |
| 3. | Ask the patient to recall 3 words from Step 1. | For each word played in Step 3, the patient receives 1 point. If you did not remember 1 word – 0 points |

Table 3. Charlson Comorbidity Index

| Points | Diseases |
|--------|---|
| 1 | myocardial infarction congestive heart failure peripheral arterial disease cerebrovascular disease dementia COPD connective tissue disease peptic ulcer mild liver damage diabetes |
| 2 | hemiplegia CKD dialysis with organ damage malignant tumor without metastases leukemia lymphomas |
| 3 | moderate to severe liver damage |
| 6 | metastatic malignant tumors AIDS |
| | + 1 point is added for every 10 years of life after 40 (40-49 years - 1 point, 50-59 - 2 points, etc.) |

The analysis of the data obtained during the study was carried out using the StatSoftStatistica 10 program.

RESULTS

Patients (130 people) who were included in the research work were distributed according to gender — 57 male patients (43.8%), 73 female patients (56.2%) (Fig. 2). The median age of the subjects was 76 (65; 92) years.

According to the comprehensive geriatric assessment (which also includes the questionnaire Age is not a hindrance, a short battery of tests of physical functioning, dynamometry, the Mini-Kog test), all patients were divided into two main groups: the first group — patients with senile asthenia syndrome — 121 people (93%), the second group included patients with preasthenia — 9 people (7%). (Table 4).

As a result of the analysis of the case histories of patients with senile asthenia syndrome, diseases of the cardiovascular system took the first place among comorbid pathologies. The most common disease among CVS was arterial hypertension, which was detected in all patients (100%), which is a significant factor in the onset of chronic and acute forms of ischemic heart disease. Chronic heart failure (CHF) occurred in 84% of cases (110 patients). Next in terms of the frequency of

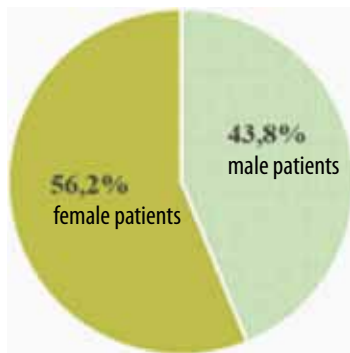


Fig. 2. Distribution of patients by gender

Table 4. CGA parameters in comorbid patients with senile asthenia syndrome

| Indicator | Patients (n = 130) | P |
|---|--------------------|--------|
| Questionnaire "Age is not a hindrance", points | 4 (2;5) | <0,001 |
| Brief Battery of Physical Functioning Tests, Points | 4 (2;5) | <0,001 |
| Mini-Kog test, points | 2 (1;4) | <0,001 |

Note: the results are presented as Me (25%; 75%)

occurrence was ischemic heart disease in 97 people (74%). Postinfarctioncardiosclerosis was diagnosed in 39 people (30%). Angina pectoris was present in 52 patients (40%) (Fig. 3).

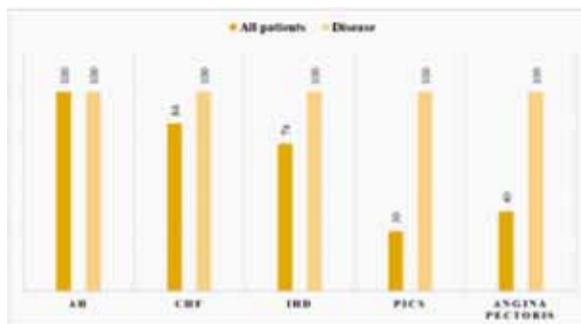


Fig. 3. Distribution of patients by morbidity combined with senile asthenia syndrome

When assessing the lipid profile, namely, the following indicators were taken into account: total cholesterol, triglycerides, high-density lipoproteins, low-density lipoproteins, atherogenic coefficient, the incidence of dyslipidemia was 44 (39.3%) among the men, 68 (60.7%) among the women.

As a result of cardiac remodeling in IHD and AH, 81 patients (62.3%) had rhythm disturbances manifested in the form of a permanent and paroxysmal form of atrial fibrillation. Supraventricular and ventricular extrasystoles were somewhat less common.

Among the diseases of the endocrine system, type 2 diabetes mellitus (DM), when using the data of anamnesis and laboratory research methods, there were 43 people (33%). When assessing the glomerular filtration rate using the CKD-EPI formula, chronic kidney disease was detected in 54 patients (41.5%), in most patients it was stage 3–4.

Degenerative-dystrophic changes in the joints, namely osteoarthritis, occurred in 123 (94%) cases. Iron deficiency anemia occupied a significant place among blood diseases.

The treatment prescribed to patients was, in most cases, multicomponent. Women with comorbid pathology received on average 5 drugs, men 7. Analyzing the prescriptions, it was revealed that all drugs were focused on the correction of all concomitant diseases. In this regard, it is necessary to take into account drug-drug interactions that affect the kinetics of drugs. Adherence in this study was 40% for men and 60% for women.

The Charlson comorbidity index among patients with senile asthenia syndrome averaged 5.8 points, which corresponds to 10-year survival in 21% of patients (Table 5). Among men, on average, the index was 5.6 points, among women — 5.2 points.

CONCLUSION

1. In the study group, among patients with comorbid conditions in combination with senile asthenia syndrome, female patients predominated — 73 (56.2%).

2. In the structure of chronic non-infectious diseases, the first place among cardiovascular diseases was taken by arterial hypertension — 130 (100%). The second place among comorbid pathology was taken by chronic heart failure, which accounts for 84% of cases. Ischemic heart disease occurred in 97 people (74%), which is a significant share in the structure of concomitant diseases.

3. Also, a significant place in the structure was taken by chronic kidney disease — 54 (41.5%), degenerative-dystrophic changes in the joints in 123 (94%) cases.

4. In patients with senile asthenia syndrome, the comorbidity index averaged 5.8 points, which corresponds to 10 — year survival in 21% of patients. The presence of comorbid pathology in patients with senile asthenia syndrome aggravates the course of the underlying disease, which undoubtedly affects its outcome.

Table 5. Evaluation of the prognosis according to the Charlson comorbidity scale

| Points total | 10-year survival rate,% |
|--------------|-------------------------|
| 0 | 99 |
| 1 | 96 |
| 2 | 90 |
| 3 | 77 |
| 4 | 53 |
| 5 | 21 |

Thus, in the course of the study, it was revealed that senile asthenia syndrome is highly common among comorbid elderly patients. In addition, there is a certain relationship between the syndrome of senile asthenia and other age-associated conditions, which undoubtedly affects the life expectancy and quality of life of patients. It is necessary to timely identify geriatric syndromes among patients over 65 years of age, which in turn will help to provide proper medical care and optimize approaches to the diagnosis and treatment of various diseases.

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